

**EFFECTIVENESS OF DISCRETE TRIAL TEACHING AND
INCIDENTAL TEACHING STRATEGY TO DEVELOP
RECEPTIVE LANGUAGE SKILLS AMONG CHILDREN WITH ASD,
YEMEN (COMPARISON STUDY)**

Ms. Amani Qasim Ahmed Al-Gashany¹ & Saumya Chandra², Ph. D.

¹Ph.D. Scholar- Special Education (Intellectual Disability), Ramakrishna Mission Vivekananda Educational and Research Institute, Faculty of Disability Management and Special Education, Coimbatore, India. E Mail: amani66.2013@gmail.com

²Asst. Professor in Special Education, Department of Intellectual Disability, FDMSE-RKMVERI, Coimbatore, India. E Mail: saumyachandra72@gmail.com

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Abstract

This study aimed to compare between the effect of Discrete Trial Teaching (DTT) and Incidental Teaching Strategy (ITS) to develop receptive language skills among children with ASD in Yemen. The study adopt single subject experimental research design that involved Six Children in age range of 5-10 years. The researchers develop assessment tool to assess the receptive language skills consist of two parts asper age groups (5-7) & (8-10) years. Wilcoxon sign-rank test has been used to analyse. The study found that there is a significant difference between the DTT and ITS on receptive language skills among CwASD in favour DTT. The study concluded that using more than one strategy with the autistic child allows knowing the child's interests and abilities, and using them to better and more accurately meet the child's needs.

Keywords: Discrete Trial Teaching, Incidental Teaching Strategy, Receptive language, ASD.



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Introduction

Autism Spectrum Disorder (ASD), as defined by the Diagnostic and Statistical Manual Fifth Edition of the American Psychiatric Association (DSM 5), is a neurodevelopmental disorder associated with symptoms that include "persistent deficits in social communication and social interaction across multiple contexts" and "restricted, repetitive patterns of behaviour, interests, or activities". Autism is one of the disorders belonging to a group of developmental disorders called medically Autism Spectrum Disorders (ASD), which appears in infancy, often
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before the child reaches the age of three years. Although the severity and symptoms of autism vary from case to case, all autism disorders affect a child's ability to communicate with those around him and develop mutual relationships with them. There are many strategies that are used to rehabilitate children with autism spectrum disorder, which differ from one strategy to another (Doernberg, 2016).

In a January, 2020 report by the Council o Children with Disabilities, Section on Developmental and Behavioral Pediatrics of the American Academy of Pediatrics entitled "Identification, Evaluation, and Management of Children with Autism Spectrum Disorder (CwASD)", they stated, "Intervention for young children also may be derived from developmental theory, which is focused on the relationship between the caregiver's level of responsiveness and the child's development of social communication. Through interaction with others, children learn to communicate, regulate emotions, and establish a foundation for increasingly complex thinking and social interaction. Therefore, developmental models designed to promote social development in CwASD are focused on the relationship between the child with ASD and his or her caregiver through coaching to help increase responsiveness to the adult (ie, the interventionist or parent or caregiver) through imitating, expanding on, or joining into child-initiated play activities. This approach may address core symptoms of ASD, such as joint attention, imitation, and affective social engagement. Developmental models for intervention are focused on teaching adults to engage in nondirective interactive strategies to foster interaction and development of communication in the context of play. One such approach is known as DIRFloortime (The Developmental, Individual Differences, and Relationship-Based model)." (Hyman et. al., 2020).

Statement of the problem

Autism spectrum disorder continues to occur with ambiguous of its causes and treatment. There are many rehabilitation and training strategies for children with autism spectrum that contribute in one way or another to alleviating the symptoms of autism and the ability to socialize. Two strategies were selected to compare their effectiveness in developing receptive language skills for people with autism spectrum disorders.

Therefore, the present study is entitled as, Effectiveness of Discrete Trial Teaching and Incidental Teaching Strategy to Develop Receptive Language Skills among Children with ASD, Yemen.

Research objectives

- 1- To find out the effect of Discrete Trial Teaching to develop receptive language skills among children with ASD in Yemen.
- 2- To find out the effect of Incidental Teaching Strategy to develop receptive language skills among children with ASD in Yemen.
- 3- To compare between the effect of Discrete Trial Teaching and Incidental Teaching Strategy to develop receptive language skills among children with ASD in Yemen.

Research Questions

- 1) What is the effect of Discrete Trial Teaching on receptive language skills among children with ASD in Yemen?
- 2) What is the effect of Incidental Teaching Strategy on receptive language skills among children with ASD in Yemen?
- 4- What is the difference between the effect of Discrete Trial Teaching and Incidental Teaching Strategy on receptive language skills among children with ASD in Yemen?

Research Design

As per the research objectives and research questions mentioned above, a single-subject experimental research design has been considered as the suitable design and adopted in the present study to attain the objectives and answer the questions.

Sample of the study

The sample of the present study has been selected using the purposive sampling technique. It includes six CwASD.

Inclusion criteria

The present study includes six CwASD at the age range of 5-10 years. Table No. 1 shows inclusion criteria.

Table No. 1- Inclusion criteria

S.N	Sample	Criteria Included
1	Children diagnosed with ASD	/
2	CwASD with difficulty in receptive language	/
3	CwASD with the diagnosis of No Auditory Difficulty	/
4	Age range: 5-10 years	/
5	CwASD without any additional disability	/

Tool of the study

A three-point rating scale was devolved to collect the quantitative data from the parents of CwASD for assessing the child. In total two different tools have been prepared by the researcher. One is for the age group of 5 to 7 years (20 items) and the second for the age group of 8 to 10 years (20) items. Both the tools were prepared in English and translated into Arabic also for the convenience of the parents of CwASD. The reliability of the translated version in Arabic has also been ensured.

Adopted scoring

Both the tools in the form of a three-point rating scale were given to the respondents. The scoring detail is given below;

Table No. 2 - Scores of the Rating Scale

Alternatives	Yes	Sometimes	No
Value	2	1	0

Table No. 3 – Maximum & minimum scores of the Rating Scale

S.No.	Age	No. of Item	Minimum Score	Medium Score	Maximum Score
1	5 - 7	20	0	20	40
2	8 - 10	20	0	20	40

Data analysis

To answer the research questions of the present study, several descriptive and inferential statistical techniques have been used to analyze the data gathered. Descriptive statistical techniques included frequencies, means, and percentages, whereas inferential statistical techniques included Wilcoxon signed-rank test.

Findings and Discussion

Research Question 1

What is the effect of Discrete Trial Teaching (DTT) on receptive language skills among CwASD?

To identify the effect of DTT strategy on receptive language skills, the researcher used the non-parametric statistics represented in the Wilcoxon sign-rank test to find the effect of the Discrete Trial Teaching (DTT) in developing the receptive language skills of the sample. Table No. 4 elaborates the differences:

Table no. 4 Wilcoxon Signed Ranks Test

Test	N	Mean	Std. Deviation	Min. score	Max. Score	Z	Asymp. Sig(2-tailed)
Pre-test	6	12.17	.753	11	13	-	0.027
Post-test	6	23.33	1.366	21	25	2.214-	

The table above showed that there is a significant difference between the pre-test and the post-test in receptive language skills among CwASD in favour of the post-test. These differences show that the language-training program had a clear impact on developing receptive language skills by using DTT strategy for each child of the sample. The table no. 5 elaborates the difference:

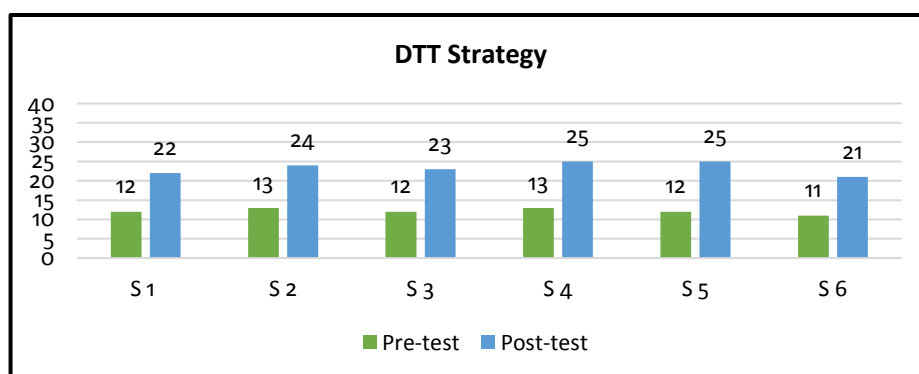
Table no. 5 Difference between pre-test & post- test in DTT strategy

S.No	No. Sample	Training Strategies	
		Pre- test	Post- test DTT
1	S 1	12	22
2	S 2	13	24
3	S 3	12	23
4	S 4	13	25
5	S 5	12	25
6	S 6	11	21

Interpretation

The table above showed that the highest score obtained in the ATRL scale using the DTT strategy is 25, that obtained by two children. While the lowest score is 21. Knowing that the assumed mean is 20, which means that the lowest score exceeded the norm score. The researcher attributes that the DTT strategy is based on the idea that it can be taught any behavior or skill by breaking the skill into smaller steps, which makes it easier to master. Therefore, those children can learn easily especially when they get rewards for all of their achievements, which encourages them to learn.

Figure no. 1 DTT strategy



Research Question 2

What is the effect of Incidental Teaching Strategy (ITS) on receptive language skills among CwASD?

To identify the effect of ITS strategy on receptive language skills, the researcher used the non-parametric statistics represented in the Wilcoxon sign-rank test to find the effect of the Incidental Teaching Strategy (ITS) in developing the receptive language skills of the sample. Table No. 6 elaborates the differences:

Table no. 6 Wilcoxon Signed Ranks Test

Test	N	Mean	Std. Deviation	Min. score	Max. Score	Z	Asymp. Sig(2-tailed)
Pre-test	6	12.17	.753	11	13	-2.264-	0.024
Post-test	6	21.67	1.366	20	23		

The table above showed that there is a significant difference between the pre-test and the post-test in receptive language skills among CwASD in favour of the post-test. These differences show that the language-training program had a clear impact on developing receptive language skills by using ITS strategy for each child of the sample. The table no. 7 elaborates the difference:

Table no. 7 Difference between pre-test & post- test in ITS

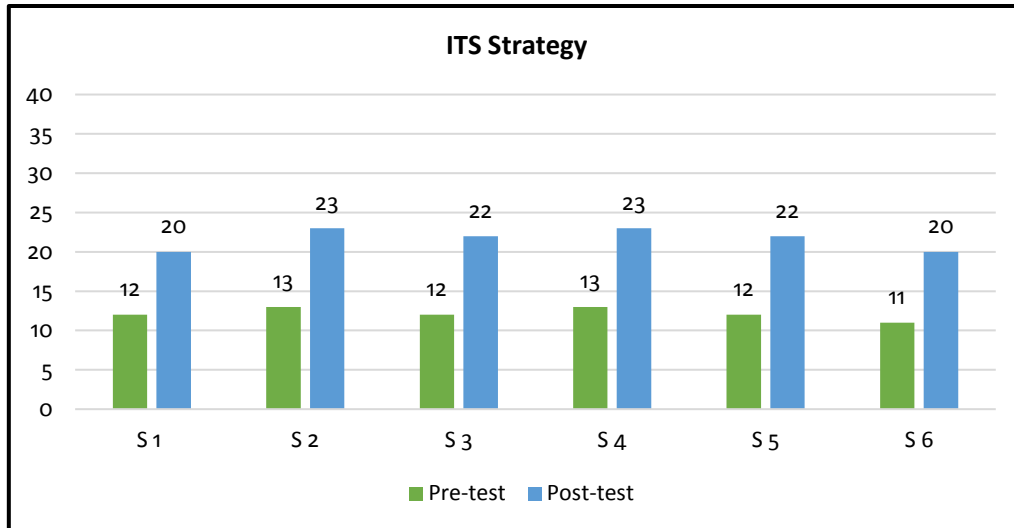
S. No	No. Sample	Training Strategies	
		Pre- test	Post- test ITS
1	S 1	12	20
2	S 2	13	23
3	S 3	12	22
4	S 4	13	23
5	S 5	12	22
6	S 6	11	20

Interpretation

The table above showed that the highest score obtained in the ATRL scale using ITS strategy is 23, that obtained by two children. While the lowest score is 21. Knowing that assumed mean is 20, which means that the lowest score equal norm score. The researcher attributes that ITS make the child moves from interacting with his teacher/mother to interacting with a wider environment such as his siblings & peers. This encourages him to adapt and

communicate his needs in various settings, which helps him implement the new words in a new sitting.

Figure no. 2- ITS strategy



Major Findings

- 1- There is a significant difference between the pre-test and the post-test in receptive language skills using DTT among CwASD in favour of the post-test.
- 2- There is a significant difference between the pre-test and the post-test in receptive language skills using ITS among CwASD in favour of the post-test.
- 3- There is a significant difference between the DTT and ITS on receptive language skills among CwASD in favour DTT.
- 4- The researchers attributes that DTT allows for multiple learning opportunities per therapy session and gives therapists the ability to focus on exactly what the child needs to be successful. It is also flexible allows therapists to set up clear expectations for the child. ITS is also showed positive effect because it typically happens in a natural environment. It helps child to generalize skills.

Conclusion

The research has attempted to bring into light “Effectiveness of Discrete Trial Teaching and Incidental Teaching Strategy to Develop Receptive Language Skills among Children with ASD, Yemen”. The researcher has develop a language training program which consist of 20 sessions. The sessions have been applied on six CwASD in Yemen individually. The program has been conducted based on two strategies that are DTT, ITS & MRS. The researcher conducted the training program with the help of mothers of CwASD. During the sessions, the

researcher was conducting formative assessment for getting feedback about the used materials and activities. At the last stage of implementation of the language training program, the researcher has been conducted the summative assessment. The major findings of the study can be summarize in the following points:

- The two strategies, which have been used, were effective in developing receptive language skills for CwASD.
- DTT strategy is more effect that ITS in developing receptive language skills for CwASD.
- Many parents of CwASD are not aware about the importance of nutrition system for CwASD.

This study will contribute to the research in the field of ASD. It is assumed that future research can draw the base and build on new findings of the present research by overcoming its limitations.

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