

LANGUAGE COMPREHENSION DIFFICULTIES AMONG SCHOOL GOING CHILDREN WITH AUTISM SPECTRUM DISORDER

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ABSTRACT

Purpose: The purpose of this study is to explore which level of language comprehension difficulties occurs most among the school going children with Autism Spectrum Disorder (ASD). **Methods:** A quantitative type survey methodology was used to conduct this study. Here the investigator used stratified sampling to collect 300 samples from different 3 special schools for children with ASD. The participants were selected those, who appropriately diagnosed by professionals as Autism Spectrum Disorder (ASD) with language comprehension difficulties. Token test checklist used for collecting data which was standardized comprehension measurement tool. Data was collected by face to face work with sample. **Result:** The investigator found that children with ASD (Age 8-16yrs) showed language comprehension difficulties in some subsets of language such as 1 keyword level, 2 keyword levels & 3,4,5,6 keyword levels and they faced less difficulty in 1 key level but in 6 key word levels faced more difficulty. **Conclusion:** This study reflects a picture about language comprehension difficulties among school going children with ASD. The results suggested that, there were some strength as well as impairment in language compression skills. When language key word level increased children with ASD faced more difficulty. From this study the professionals as well as general people could know about children with ASD. This study will be helpful when professionals work to enhance language compression skills of children with ASD.

Keyword: - 1. Autism Spectrum Disorder (ASD), 2. Language Comprehension Difficulties, 3. Token Test

INTRODUCTION:

Autism spectrum disorders (ASD) square measure characterized by social-interaction difficulties, communication challenges and a bent to have interaction in repetitive behaviors. Symptoms may be more severe, as when repetitive or stereotype behaviors and lack of spoken language interfere with everyday life. Many well-known studies also showed that autism is four to five times more common among boys than girls. Also in another study has estimated that 1 out of 42 boys and 1 in 189 girls are diagnosed with autism in the United States. ASD is calculable to have an effect on over two million people within the U.S. and tens of millions worldwide. There has a maximum difficulty in language comprehension in day to day life [Brown et al, 2013]. About 1 in 68 children have been identified with autism spectrum disorder (ASD) according to estimates from the Centers for Disease Control and Prevention (CDC)'s Autism and Developmental Disabilities Monitoring (ADDM) Network. ASD is reported to occur in all told racial, ethnic, and socioeconomic groups. A new government survey of parents suggests that one in forty five kids, ages 3 through 17, have been diagnosed with autism spectrum disorder (ASD) [Lim & Wong, 2009]. Children with ASD square measure prevented from traditional development as a result of they lack a Theory of Mind, that is the

ability to acknowledge that one and others have mental states, such as thoughts, wishes, intentions or believes and that can be different from self [Brown et al, 2013]. Language impairments found in autism come as consequences of more general deficiencies in communication caused by the deficit in the Theory of Mind [Baron- Cohen, 1998]. Language is the way to express thoughts, emotion and it is the way of communication. It can be affected by various conditions. Autism spectrum disorder (ASD) is one of them. In normal children, their language developed in a normal pattern during school period, but a child with ASD face problem with understanding verbal instructions which may underestimate the overall understanding [Ellis, 1990]. Studies in Asia, Europe, and North America have identified individuals with ASD with comprehension difficulties an average prevalence of between 1% and 2% [Rosenberg et al., 2009]. Clinical anecdotes suggest that children with autism spectrum disorder (ASD) often show an atypical language profile in which expressive language exceeds receptive language competency [Christina el al., 2012]. According to McDonald & Messinger (2012), some of evidence has showed that receptive language may be a relative weakness for individuals with Autism using cross-sectional developmental trajectories relative to age, sex, non-verbal cognition and expressive vocabulary. In this research investors will be able to find out the difficulties and strength of language comprehension skill in different level of receptive language (1key word to 6 key word level) among school going children with ASD, it will be a new era for SLT to work with them.

METHODOLOGY:

Study Design:

Investigator used quantitative design to conduct the study. It was one of the most commonly used survey research design (Shaughnessy and Zechmeister, 2003). Investigator used this design because it generally describes a group at one point of time (Bailey, 1997). In this study investigator aimed to identify percentages of which level of key words were most showed comprehension difficulties between (8-12) (13-16) ages of Autism children. They also added that cross-sectional survey represents a snap-shot view of the frequency and distribution of disease in a community. So, quantitative study would be an appropriate design to conduct the study. Besides these quantitative design was simple to operate, cheaper and relatively quicker to carry out (Hicks, 2000). As a result, investigator used this design.

Study Location:

Investigator conducted the study in “Alokito Shishu” (A treatment based school for Autism & others Special Needs children), Mohammadpur, “SWAC” (Society for Welfare of Autism Children), Symoli, and “Beautiful Mind”, Uttara. These are well named specials schools for children with Autism and other children with special needs located in Dhaka City, Bangladesh.

Study Population:

The population of the study was school going children with Autism Spectrum Disorder.

Sample Size:

Investigator had taken 300 samples from three different special schools of Autism in Dhaka city.

Sampling Procedure:

Investigator used stratified random sampling method to conduct the study. It is a judgmental sampling process where individuals are selected purposely based on the study (Depoy & Gitlin, 1998). In this type of sampling, items for the sample were selected deliberately by the researcher; his choice concerning the items remains supreme (Kothari, 2004). According to Hicks (2000), stratified random sampling is an easy way of accessing a sample from a population. Investigator used this technique because it was easy, quick and cheap to select participants from special schools. It saved time of the investigator and investigator selected participants according to the aim and objectives of the study.

Data Collection Tool:

The Token Test (DeRenzi & Vignolo 1962) is initially developed to detect mild receptive language disorders in Aphasic patients as well as Attention Deficit Disorders. In that period, comprehension of spoken language was mostly examined in a clinical situation. According DeRenzi & Vignolo, too less attention was given to the influence of redundancies, as occurring in a normal communicative interaction. The commands in the Token Test are independent of redundancies in a communicative situation. All commands consist of no redundant words, referring to circles and (in the original Token Test) rectangles in different colors (original Token Test: red, green, blue, yellow and white) and sizes (large and small). The objects do not give a cue for a specific action. To perform the requested action, every content word has to be decoded. The original test consists of 61 commands. Because of the frequent use of the test in clinical practice, several short forms are developed. The screening power of the short 36-item form, developed by DeRenzi & Faglioni in 1987, was the reason that the developers suggested this form as 'the standard test for diagnostic purpose'. The rectangles are changed in squares because of their more frequent occurrence. The color blue has been changed in black, because both patients and controls appeared to have problems with the discrimination of blue and green.

Data Collection Procedure:

Investigator collected data from the participants through face to face interview or join work with the caregivers of children with Autism. Face-to-face interview (Client and SLT will sit face to face, client had to complete those tasks by pointing the answers in questionnaire) is a data collection method when the interviewer directly communicates with the respondent in accordance with the prepared questionnaire (Nurul, 2014).

Data Analysis Process:

Investigator used descriptive statistics for data analysis. The percentages of each domain were statistically analyzed using SPSS software.

Ethical consideration:

The investigators raised appropriate concerns about the ethical aspects of the study. They took formal permission from the Bangladesh Health professions Institute (BHPI) of CRP, Savar, Dhaka, Bangladesh, for conducting this study. Permission was also taken from the authorities of Alokito Shishu, Beautiful Mind & SWAC to collect data for this Study. The investigator gave detailed and clear information about the purpose of the study to the participant. All information was kept secure. Confidentiality of the person and the information was maintained and observed throughout the study.

RESULTS:

In this study investigator aimed to identify percentages of which level of key words were most showed comprehension difficulties between (8-12) (13-16) age children with ASD and find out the association among age, sex and language comprehension. Within participants there were 220 boys and 80 girls with ASD. The participants of this study all were (8 -16) aged children with ASD.

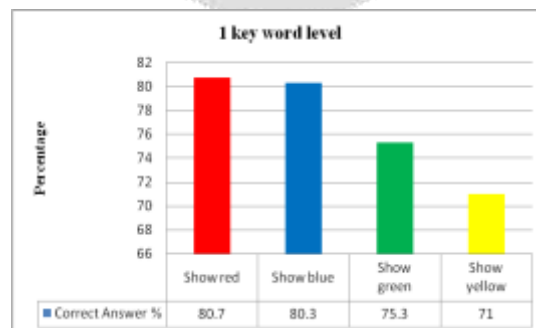


Figure 1: 1 key word level correct answers score's percentage chart

In this figure 1 investigator has illustrated the four different columns of ‘show red’, ‘show blue’, ‘show green’ and ‘show yellow’ by red, blue, green and yellow bar . Here red column represents that 80.7% children gave right answer ‘show red’. Blue column represents that 80.3% child gave right answer ‘show me blue’. Green column explain 75.3% child gave right answer ‘show green’. Yellow column illustrates that 71% children gave right answer ‘show yellow’.

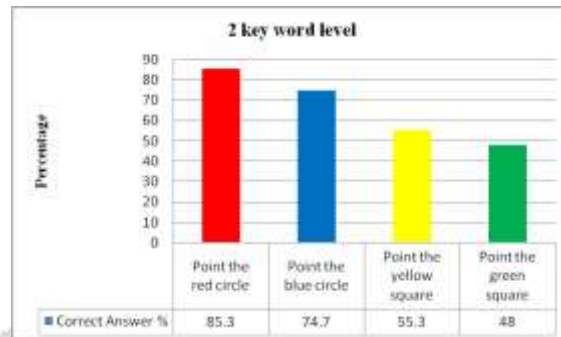


Figure 2: 2 key word level right answers score’s percentage chart

This figure 2 showed the four different columns of ‘point the red circle’, ‘point the blue circle’, ‘point the yellow square’, and ‘point the green square’. Here red column represents 85.3% children was able to point the red circle correctly. Blue column represents 74.7% children was able to point blue circle correctly. Here yellow column represents 55.3% children was able to point yellow square correctly. Green column represents 48% children was able to point green square correctly.

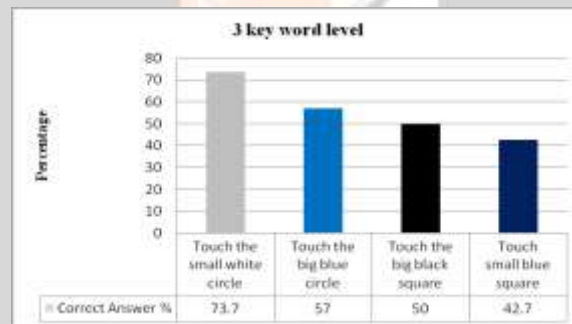


Figure 3: 3 key word level right answers score’s percentage bar chart

This figure 3 showed the four different column of ‘touch the small white circle’ (Gray bar), ‘touch the big blue circle’ (blue bar), ‘touch the big black square’ (black bar), and ‘touch small blue square’ (dark blue bar). Here gray column represents that 73.7% children was touch the small white circle correctly. Here blue column represents that 57% children was touch the big blue circle correctly. Here black column was represents that 50% children was touch the big black square correctly. Here short dark blue column was represents that 42.7% children was touch small blue square correctly.

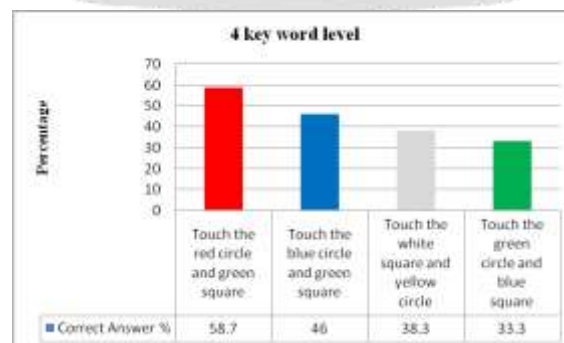


Figure 4: 4 key word level right answers score’s percentage bar chart

This figure 4 showed the four different columns of ‘touch the red circle and green square’ (red column), ‘touch the blue circle and green square’ (blue column), ‘touch the white square and yellow circle’ (gray column), ‘touch the green circle and blue square’ (green column). Here red column represents that 58.7% children with autism was able to touch the red circle and green square correctly. 46% children with autism were able to touch the blue circle and green square correctly, here blue column represent it. 38.3% children with autism were able to touch the white square and yellow circle correctly, white column represents it. 33.3% children with autism were able to touch the green circle and blue square correctly, green column stand for it.

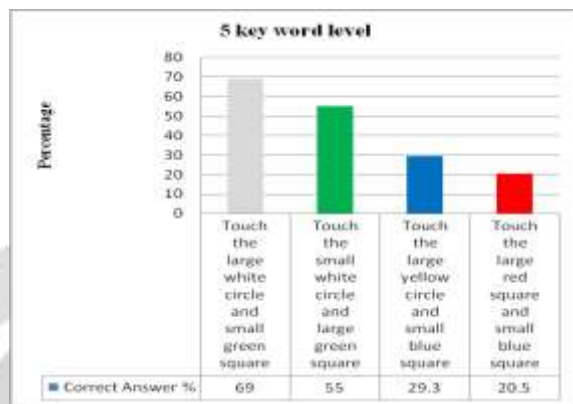


Figure 5: 5 key word level right answers score’s percentage bar chart

This figure 5 demonstrate the four different column of ‘touch the large white circle and small green square’(gray column), ‘touch the small white circle and large green square’ (green column), ‘touch the large yellow circle and small blue square’ (blue column), ‘touch the large red square and small blue square’ (red column). Here gray column correspond to 69% children with autism were able to correctly touch the large white circle and small green square. 55% children with autism were able to touch the small white circle and large green square appropriately, green column signify it. 29.3% children with autism were able to touch the large yellow circle and small blue square properly, blue column shows it. 20.5% children with autism were able to touch the large red square and small blue correctly, red column represent it.

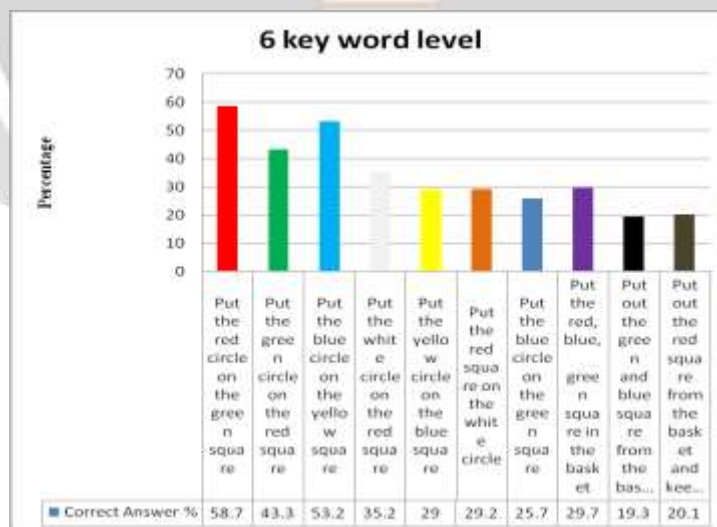


Figure 6: 6 key word level right answers score’s percentage bar chart

This figure 6 showed the five different column of ‘put the red circle on the green square’(red column), ‘put the green circle on the red square’(green column), ‘put the blue circle on the yellow square’(blue deep column), ‘put the white circle on the red square’(white column), ‘put the yellow circle on the blue square’ (yellow column), ‘put the red square on the white circle’(orange column), ‘put the blue circle on the green square’(light blue column), ‘put the red, blue, green square in the basket’(purple column), ‘put out the green and blue square from the basket and give

me'(black column), 'put out the red square from the basket and keep it on the table'(gray column). Here red column correspond to 58.7% children with autism were able to put the red circle on the green square correctly. 43.3% children with autism were able to put the green circle on the red square correctly, green column represent it. 53.2 children with autism were able to put the blue circle on the yellow square, here blue (deep) column stand for it. White column represent that 35.2% children with autism were able to put the white circle on the red square correctly. Here yellow column represent that 29% children with autism were able to put the yellow circle on the blue square acceptably. Here orange column stand for 29.2% children with autism were able to put the red square on the white circle appropriately. Here light blue column represent that 25.7% children with autism were able to put the blue circle on the green square correctly. Here purple column show that 29.7% children with autism were able to put the red, blue, green square in the basket approximately. 19.3% children with autism were able to put out the green and blue square from the basket and give me correctly, here black column was represent it. 20.1% children with autism were able to put out the red square from the basket and keep it on the table acceptably; here gray column was represent it.

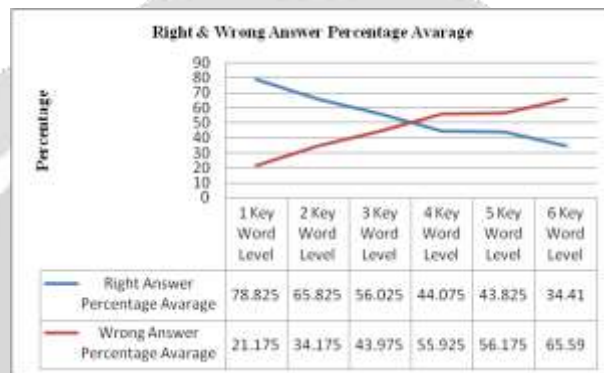


Figure 7: Right & Wrong answer percentage average score line chart

This figure illustrate that correct answer percentages average at 1 key word, 2 key word, 3 key word, 4 key word, 5 key word and 6 key word level were 78.825, 65.825, 56.025, 44.075, 43.825 and 34.41 respectively. On the other hand incorrect answer percentages average at 1 key word, 2 key word, 3 key word, 4 key word, 5 key word and 6 key word level were 21.175, 34.175, 43.925, 55.925, 56.175 and 65.59 respectively.

DISCUSSIONS:

The study had showed that it was feasible to find out children language comprehensive difficulties by using professional rating and the professional’s (teacher) rating may, indeed more valid insofar as they are working a long time with children. As teachers were working with child so they knew the impairment area as well as the area of strength, so they had been present next to children with ASD while taking data. Here Token- test there were 6 parts and each part has subsets to find out which key word level language comprehension difficulties occurs most. In this test there are total 30 tasks.

Here in this questionnaire in every subset had specific key word level to reflect strength of children and some questions reflected weakness and all were rated as right answer, wrong answer. So, in this study investigator find out the strength or difficulties of children with autism according to language level subsets.

Here first part 1 subset 1 was ‘show red’ which is one key word level task. In that case, result showed that 88.7 % children had given right answer and 11.3 % children had given wrong answer. Part 1 subset 2 was ‘show green’. Investigator found that in part 1 subset 2, 80.3 % children had given right answer and 19.7 % had given wrong answer. In part 1 subset 3, 75.3 % children had given right answer and 24.7 % had given wrong answer. In part 1 subset 4, 71.0 % children had given right answer and 29.0 % gave wrong answer. Nikopoulos and Keenan (2003) explained that, “Children with autism can become skilled at to respond to social comprehensive initiations by others, they may face some major difficulties in comprehend initiating complex social behaviors and that’s why their conversation and speaker’s initiating reply or message they cannot relate so their response at low levels. But other findings suggest that when the social comprehensive initiation rate increases, then their social behavior also improves significantly”.

Second part was 2 key word level composed tasks. This part had also 4 subsets. Here first part 2 subset 1 was which ‘point the red circle’ was two key word level tasks. In that case, result had showed that 85.3 % children had given

right answer and 14.7 % children had given wrong answer. Part 2 subset 2 was 'point the blue circle' showed that children had given 74.7 % right answer and 25.3 % wrong answer. Part 2 subset 3 was 'point the yellow square' had launched that children had given 55.3 % right answer and 44.7 % wrong answer. Part 2 subset 4 was 'point the green square' had showed that children had given 48.0 % right answer and 52.0 % wrong answer. According to Lam & Yeung (2012), "participants with autism have impairment on message decode and processing initiate response in this case 70% children with autism had severe problem in re-telling story or perform on once said instruction".

Third part was 3 key word level composed tasks. This part had 4 subsets. Here first part 3 subset 1 was touch the small white circle which was three key word level tasks. In that case, result had presented that 73.7 % children had given right answer and 26.3 % children had given wrong answer. Part 3 subset 2 was 'touch the big blue circle' had showed that children had given 57.0 % right answer and 43.3 % wrong answer. Part 3 subset 3 was 'touch the big black square' had presented that children had given 50.7 % right answer and 49.3 % wrong answer. Part 3 subset 4 was 'touch small blue square' showed that children had given 42.7 % right answer and 57.3 % wrong answer. Children with autism are preoccupied with restricted topics and fail to take turn in conversational exchanges (Lam & Yeung., 2012).

Fourth part was 4 key word level composed tasks. This part had 4 subsets. Here first part 4 subset 1 was 'touch the red circle and green square' which was four key word level tasks. In that case, result has showed that 58.7 % children had given right answer and 41.3 % children had given wrong answer. Part 4 subset 2 was 'touch the blue circle and green square' had displayed that children had given 46.0 % right answer and 54.0 % wrong answer. Part 4 subset 3 was 'touch the white square and yellow circle' had showed that children had given 38.3 % right answer and 61.7 % wrong answer. Part 4 subset 4 was 'touch the green circle and blue Square' had exhibited that children had given 33.3 % right answer and 66.7 % wrong answer. They showed impairments in their understanding of the speaker-listener relationship. Children with autism exhibited significant difficulties in conversational contexts. They slow impairments in their understanding and fail to distinguish between given the new information and do not conform to conversational rules. They cannot appropriately maintain an ongoing topic of discourse (Tager- Flusberg & Anderson, 1991).

Fifth part was 5 key word level composed tasks. This part had 4 subsets. Here first part 5 subset 1 was 'touch the large white circle and small green square' which was five key word level tasks. In that case, result had launched that 69.0 % children had given right answer and 31.0 % children had given wrong answer. Part 5 subset 2 was 'touch the small white circle and large green square' had showed that children had given 55.0 % right answer and 45.0 % wrong answer. Part 5 subset 3 was 'touch the large yellow circle and small blue square' had showed that children had given 29.3 % right answer and 70.7 % wrong answer. Part 5 subset 4 was had 'touch the large red square and small blue square' presented that children had given 22.0 % right answer and 78.0 % wrong answer. Children with autism usually introduce irrelevant comments or fail to extend a topic by adding new relevant information (Tager-Flusberg, 2000).

Sixth part was 6 key word level composed tasks. This part had 10 subsets. Here first part 6 subset 1 which was 'put the red circle on the green square' six key word level tasks. In that case, result had showed that 58.7 % children had given right answer and 41.3 % children had given wrong answer. Part 6 subset 2 was 'put the green circle on the red square had revealed that children had given 43.3 % right answered and 56.7 % wrong answer. Part 6 subset 3 was put the blue circle on the yellow square' had pointed that children had given 53.2 % right answers and 46.7 % wrong answer. Part 6 subset 4 was 'put the white circle on the red square' had showed that children have given 35.2 % right answers and 64.7 % wrong answer. Here part 6 subset 5 was 'put the yellow circle on the blue square' which was six key word level tasks. In that case, result had emerged that 29.0 % children had given right answer and 71.0 % children had given wrong answer. Part 6 subset 6 was had 'put the red square on the white circle' emerged that children had given 29.7 % right answer and 70.3 % wrong answer. Part 6 subset 7 was 'put the blue circle on the green square' showed that children had given 25.7 % right answers and 74.3 % wrong answer. Part 6 subset 8 was 'put the red, blue, green square in the basket' showed that children had given 29.7 % right answer and 70.0 % wrong answer. Part 6 subsets 9 was 'put out the green and blue square from the basket and give me' had emerged that children had given 19.3 % right answer and 80.7 % wrong answer. Part 6subset 10 was 'put out the red square from the basket and keep it on the table' showed that children had given 20.1 % right answer and 79.9 % wrong answer. Children with autism had severe problem in initiations and responses to interactions because of their low comprehensive in conversation which impact on their social skill. And that's why it has found that they face problem to make rapport with partner during conversation (Baron-Cohen, 1988).

In this study investigator find out that children with ASD has language comprehension difficulties in different key word level of language. When key word increase they face more difficult to understand language. In 6key word level they face more difficult to understand language and in 1 key word level they face lass difficulty to understand.

Researcher had got some of the literature from several countries of the world, but Bangladesh investigator did not find any study related to language comprehension difficulties of autism.

CONCLUSIONS:

Autism Spectrum Disorder (ASD) is one of the most common focusing disorders in developing country like Bangladesh. Already, some research has done under this title, but not enough in number. This study had provided information about language comprehension difficulties among children with ASD and described the strength and weakness of their receptive language skill. Though it had been established that, children with autism have define problem in comprehension but this study showed that there are some other facts were also described. The investigator had found their maximum difficulties in 6 key word level those age ranges are (8-12) & (13-16).

In Bangladesh there are several organizations, special schools, special care center are working children with autism. There are lots of professional such as therapist, teacher, social workers are working with them. So, this research will help them when they will work with comprehension skill of children with ASD. They will be able to know the specific strong and weak zone of language difficulties of children with ASD and they can provide treatment according to their plan.

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