UNIVERSITY OF GOTHENBURG

Social Interaction in Learners with Autism

"How do teachers try to enhance social interactions in students with autism and which methods do they apply?"

Farnaz Sharifi Brojerdi

 Master of Science Thesis (Communication)

Acknowledgment

I must express my very profound gratitude to my lovely family and friends: Behzad, Nayereh, Shahryar, Sahar, Reza, Arad, Najmeh, Shaghayegh and Behnam

I would also like to thank my thesis supervisor Faramarz Agahi.

TABLE OF CONTENTS

List of figures and tables

Abstract

This study aims to investigate how teachers try to enhance social interaction in students with Autism Spectrum Disorder (ASD), which methods they apply and what factors make them to apply these methods.

There are seven social interaction impairments suggested by Turkington (2007), Halliwel (2003) and Gallo (2010) that are "problem in reciprocity, initiating communication, maintaining eye contact, sharing pleasure, understanding the interest of others"; "unable to act in accordance with the rules that are commonly known by the society"; and "lack of understanding of the concept of personal space" (Meressa, 2014, p. 15, 16).

To attain this objective, six authorized teachers who have experience in working with children with autism were interviewed. The result of this study was categorized based on these seven social interaction impairments.

The results suggested that there are two groups of approaches, including visual and interactive approaches to enhance social interactions among children with autism. Visual approaches consist of using picture, communication notebook, comic strip, smiley and checklist while interactive methods include back by back, talking, role play, theatre, social story, using objects and body, secret code, one step before, positive reinforcement, showing practically, and color words.

Keywords:

Autism, Social interaction, social skill, Autism spectrum disorder

Chapter 1: Introduction

Many years ago, a medical report was written in ancient Mesopotamia, which described an infant who had rejected his mother. Sometimes an infant with autism is very sensitive to touch. Gillberg and Coleman (2000) wonder if this is the first description about the Autism.

Autism, consists of two words that come from Greek. *Aut* means self and *ism* means orientation so the definition of Autism could be a condition of an individual who is absorbed in himself (Reber, as cited in Trevarthen et.al, 2014, p.5). According to Turkington (2007) Autism Spectrum Disorder (ASD) affects at least 1 out of 500 children in the USA. This statistic is even higher in Sweden. The prevalence of ASD in Sweden is 3,5 in 500 children (Fernell, Gillberg, 2000).

ASD prevents children from having rewarding lives and disturbs their families. Although autism was one of the most common developmental disabilities and during the past several years the number of children were diagnosed with ASD apparently increased, schools have difficulties with providing proper service for those children (Turkington, 2007). Healthy children usually learn primary social skills easily such as turn-taking or starting a conversation. For children with autism, the social processes are more difficult (Turkington, 2007). The core of impairment in children with autism is social interaction; due to their lack of social skills, it is essential to teach them social skills and include proper educational programs in their schools' curriculum (Sansosti, 2010).

High-functioning autistic disorder (HFAD) vs. low-functioning autistic disorder (LFAD):

According to the Turkington, children with autism, which have the ability to communicate, minor social deficits and normal or high IQ rating named as the high-functioning autistic disorder. An individual with the high-functioning autistic disorder and low-functioning autistic

disorder have the same symptoms, but LFAD people have a lower IQ and exhibit more severe symptoms. The average of nonverbal IQ in HFAD is 100 and verbal IQ is 85. The individual with LFAD indicates significantly lower IQ, approximately 55 for both verbal and nonverbal IQ. Individual with LFAD classified as mentally retarded. Special curriculum and aids for special needs learners in regular school would be the best choice for HFAD children (Turkington, 2007).

There is not any "typical type of person with autism" so there is not a single best treatment for ASD learners (Turkington, 2007). By considering the differences between ASD learners, the role of teachers becomes more highlighted. Each teacher has his/her own method that sometimes comes from personal creativity. Exploring this method would be helpful for other children with autism as well.

In developed countries, the education of children with special needs is a critical issue. It is important for the learners with special needs to have communication with other children. Educational systems try to integrate these children into normal school settings. This process is known as mainstreaming. The concept of mainstreaming comes from the idea that since all people would mainstream into the society soon or late it is better those both disabled and nondisabled children begin the process of integration at the earliest age in schools. On the other hand, the mainstreaming process increases the other students' tolerance toward children that are not like themselves. Full inclusion is a placement that students with special needs attend in normal schools for the whole school day (Turkington, 2007). The aim of this study is to find the appropriate methods for teaching social interaction to HFAD which study in the regular elementary school in Sweden. This study has done in the regular elementary school that runs by two teachers with 20 to 25 students. Sometimes one teacher work with the ASD children one- to one or in small group and another one take the whole class. Sometimes both teachers work with the whole class together. In order to place children with special needs in regular classrooms, it is really important for teachers and educational systems to identify the methods for a better education.

The current study attempts to investigate the students with autism in normal Swedish elementary school. Unlike the previous studies in this area, this study exclusively focuses on enhancing social interactions of students with ASD. This study seeks to answer the research question "How

do teachers try to enhance social interactions in students with autism and which methods do they apply?" It also aims to find out the factors that lead teachers to apply these methods. For this purpose, a framework is applied from Turkington (2007), Halliwel (2003), and Gallo's (2010) seven social interaction impairments of children with autism.

Recent concerns about autism have generated a considerable body of research. According to these studies, educational systems and teachers play an important role. Today, the challenge that educational systems encounter is to find suitable strategies for learners with autism in order to enhance their social interaction. Despite the growing interest in this issue, most of the accomplished studies refer to the social interactions' qualitative differences, but there is not sufficient agreement on proper teaching methods for students with these impairments (Brooks, Christopher, Gallagher, Gallagher, 2016).

This research is driven by personal experience in working with children with autism in Swedish elementary schools. In the light of all these points, it seemed the findings of this study about ASD might be of some value.

The purpose of this qualitative study is to gain an understanding about the role of educators in teaching learner with autism. One of the most significant parts of impairments with Autism Spectrum Disorders (ASD) is difficulties in social interaction (Tullis and Gallagher 2016). This impairment in the development of social interaction is characterized by "problem in reciprocity, initiating communication, maintaining eye contact, sharing pleasure, understanding the interest of others", inability to act in accordance with the rules that are commonly known by the society and lack of understanding of the concept of personal space (Turkington, 2007).

Since the research concerning social impairments in ASD learners, the researcher has tried to find the proper methods for each impairment (mentioned above) among available literature. The related literatures that were found by the researcher indicated to the general methods. For instance, they mentioned to the game as a tool for teaching social interaction to the ASD learner but not specified which game. Thus, the researcher has decided to guide the interviewees in order to go into detail of each method. If participants mentioned to the game, asked them to specify which kind of game they mean.

This chapter is followed by the theoretical framework, methodology, results, discussions and finally, conclusions. Theoretical framework consists of 3 main parts: definitions, treatments and

the theory. Chapter 3 includes data collection, ethical consideration and data analysis. Chapter 4 is results and chapter 5 is discussions, both divided into 7 main parts according to the seven social interaction impairments mentioned earlier. Finally, chapter 7 is conclusions driven from the findings of this study.

Chapter 2: Theoretical Framework

Introduction

This chapter includes definitions of concepts, diseases and the treatments. It also includes the definitions of theory which are applied to analyze the results of this study.

Definitions

Autism Spectrum Disorder (ASD)

There had been no name for the disorder that affected at least 1 out of 500 children in the USA until 1943 (Turkington, 2007). In 1943, Leo Kanner from the Johns Hopkins Hospital explained about Autism Spectrum Disorder (ASD) for the first time. In his classic article, he studied 11 children who had lack of interest in other people (Corsello, 2005). At the same time, Doctor Hans Asperger described another form of ASD which is named today as Asperger's Syndrome. Today, ASD is listed as the second most pervasive developmental disorder out of five.(Turkington, 2007).

There are five types of ASD:

• Autistic disorder (autism) (both low- and high functioning)

• Asperger's syndrome

• Rett disorder

• Pervasive developmental disorder-not otherwise specified (PDD-NOS)

• Childhood disintegrative disorder

ASD is a brain disease that commonly emerges before the third year of life. In some cases, the disease appears earlier. Since ASD is a spectrum disorder, symptoms would appear in a range of combinations, from mild to severe. All children with ASD demonstrate deficits in social skills, verbal and nonverbal communication, impairing ability to play, speak, and relate to the world. They also have repetitive behaviors and interests. All of the disorders in this group are defined by varying degrees of communication skills and social interaction problems. They find out other people's interests, thinking, and feeling slower than healthy children. ASD influences their ability to interpret gestures and facial expression. They have a problem with seeing things from another person's perspective (Turkington, 2007).

There are not any medical tests for diagnosis of ASD. In order to diagnose this disease, the person's communication, behavior and level of development should be observed (Turkington, 2007).

Although there is no exact cause for the disorder, scholars have suggested different justifications.

- Heredity: researches have consistently shown that genetics play significant role in the development of autism in some cases (Rutter, 2005)
- Environmental Factor: Although genetics play the main role in ASD, environmental factors such as antibiotics, exposure to mercury, and lack of essential mineral could be considered as another reason of the disorder However, The causes of environmental factor have been the subject of intense debate within the scientific community (Turkington, 2007).

Social Interaction

We acquire social skills through being in society, but this process is not usual for learners with autism. They are in need of special training in order to learn social skills. As mentioned above, social interaction impairments include:

1. Problem with maintaining eye contact
2. Problem in initiating communication
3. Problem in reciprocity communication
4. Problem to share pleasure

5. The problem of understanding the interest of others
6. Lack of understanding the concept of personal space
7. Unable to act in accordance with the rules that are commonly known by the society

According to Zlatić (2014, p.75) social interaction refers to the "current relationship between two or more individuals, where one individual affects the behavior of others".

Eye contact is a form of nonverbal communication which means to look directly in to the other person's eyes when they are in front of you. Ability to have eye contact is one of the fundamental elements in social skills development. Poor eye contact is the most common and obvious symptom reported by parents of children with autism and it is often the first symptom too. Children with ASD have problems with maintaining eye contact and some of them use peripheral vision or tend to look away or seem to look through the people who are in front of them (Collins, 2005).

Lack of social skills in children with autism creates problems in initiating interaction and conversation. According to Mundy, Delgado, Block, Venezia, Hogan and Seibert (2003, p.2), "Initiating social Interaction (ISI) refers to the child's skill in initiating turn-taking sequences and the tendency to tease the tester".

Reciprocity communication is the heart of effective communication and is defined as a type of mutual exchange or influence that happens among people. It refers to the desire of a person to cooperate with and give and take with others. Turn-taking and empathy are other aspects of this concept (Millar, 2013).

ASD students struggle for understanding other people's intentions and emotions, sharing interests and pleasures, having appropriate relationship, and cooperating in activities (Kozima, Nakagawa, Yasuda, 2005)

The distance which people make an effort to keep between themselves and another individual is known as personal space (Hall, 1966). An ASD learner tends to invade another person's personal space, due to lack of social skills (Lough et al., 2015).

Children often learn basic social rules by observing other children's behavior in society or a particular lesson that are provided by their parents. The social interaction process for ASD

children is much more difficult. They need more help and further instruction about the social rules (Laugeson, Frankel, Mogil, Dillon, 2008).

Children with ASD have difficulty in understanding that other people have different feelings. It means that they are not able to predict or understand others' actions. Lack of social skills prevents children with autism to have a fulfilling relationship. Despite the common idea that people with ASD do not have any desire to interact socially, many individuals with ASD are very interested in having social interaction. Actually, they do not have enough social skills to interact in society. Social anxiety has been generated as a result of these poor social skills. Children with autism often avoid being in social situations consequently their social skills do not develop (Turkington, 2007).

Treatments

Behavior Therapy

Turkington (2007) mentioned some goal-oriented and commonly short-term behavioral therapy methods applied for ASD. With the aid of behavioral therapy, people can change the way of acting and thinking in annoying situations. A method often focuses on the current situation. Turkington (2007) claims that the most suitable education for a learner with ASD includes early and intensive behavior modification therapy.

 APPLIED BEHAVIORAL ANALYSIS (ABA) and DISCRETE TRIAL TRAINING (DTT) are two types of behavioral therapy used for individuals with autism. The goal of this type of behavioral management is to reinforce desirable behaviors and reduce undesirable ones. Behavioral therapy for an learner with autism is based on training him/her to behave more appropriately, which has enormous positive impacts on children with ASD. Most of these techniques are based on two theories. A theory which indicates that rewarded behavior will be repeated more than ignored behavior and the other theory indicates that if we deal with inappropriate behavior early, it may be controlled but if neglected, it would lead to uncontrollable behavior. Behavioral therapy in ASD children sometimes consists of one - to- one interactions and immediate correction of any inappropriate behavior. These methods focus on the

current situation and have been used to provide skills that individuals with ASD need in order to function properly (Turkington, 2007).

Applied Behavior Analysis (ABA)

Applied behavior analysis is a subdivision of behavior modification and often applies one- to - one interaction with the learner. Applied behavior analysis is known as an efficient treatment method for education of individuals with autism. With the aid of applied behavioral analysis, inappropriate behavior in children with autism is reduced. Besides, their communication, appropriate social behavior and learning are increased. Applied behavior analysis methods are especially useful to teach children who are not able to talk. The schedule should be based on the ASD children's interests and to teach them the skills in an easy step-by-step manner; such as learning colors and asking them to point out to the color when they hear the name of the color (Turkington, 2007).

Teaching Interaction (TI)

Teaching interaction or TI is considered as a successful method for teaching appropriate social skills within the domain of conversation and emotion. Teaching interaction is a system of teaching based on the applied behavior analysis. During the process of teaching, the teacher explains about the behavior, gives details about the appropriate social behavior and then shows the behavior.

Discrete Trial Training (DTT)

"The discrete trial training method is used to control the mass of information and interaction that normally confronts a child with autism so that it can be presented slowly" (Turkington,2007, p.64). Discrete trial training (DTT) in this method divides the learning tasks into simple components and small steps. Skills and tasks are organized from simple to complex. For example, first comes teaching how to sit on a chair calmly and pay attention to others and then more complex social interaction and communication can be taught step by step. The therapist teaches fundamental skills such as toileting in order to engage them more in social interaction;

they also correct the unappreciated behavior besides teaching. Positive reinforcement, repetition, and rehearsal are used in this type of teaching (Turkington, 2007).

Floor Time

Floor time is a discrete trial training which is based on using interactive experiences to make it possible to move to the next stage of development. The learner with autism and the partner engage in an informal play session. In floor time, the ASD child plays the boss and the partner has to do what the child wants. The partner should play eye to eye with the child and try to open and close the cycle of communication. For example, if the ASD child asks for a juice, the partner must open the circle of communication by asking more questions:

- Which type of juice would you like?
- Would you like an apple juice or orange juice?

If the ASD child has a problem with choice, the partner should make a choice very clear. Emotional capacity and communication with an child with autism would be enhanced by using this method (Turkington, 2007).

Other useful methods for enhancing social skills in children with ASD will be presented in the following paragraphs. The methods are: *Social skills training, Picture exchange communication systems (PECS) and Communication notebook.*

Social Skills Training

This method applies to children with ASD in order to enable them to understand the unwritten social rules and other people's body language. Social scripting could be used in this method. Social stories and scripts are being read for learners with autism loudly and teach them society's rules. Sometimes scripts are re-personalized for each learner. Reading social stories are repeated until children learn the behavior. In this method, it is very important to explain about misunderstanding of the situation for learners with ASD. The teacher should address the reason of unappreciated behavior (Turkington, 2007). Matson, Matson and Rivet (2007) pointed to

teaching appropriate behavior through music, visual cues or using computer presentations in social stories and scripts.

Picture Exchange Communication Systems (PECS*)*

In this type of treatment, pictures that represent ideas, activities, or items are shown to children with ASD. Then they will be taught to use a picture for explaining their meanings. In PECS, the learners with ASD attach meaning of words through pictures. They can express their needs and requests through the pictures and work with both verbal and nonverbal communication. PECS has been known as focusing on the "initiation component of communication". This method does not need any special equipment and could be used in every situation. One of the many advantages of the PECS's method is that the ASD child's request is recognized immediately through the use of PECS. The method is very clear and useful for helping the ASD child to have communication with anyone (Turkington, 2007).

Communication Notebook

Turkington (2007) mentioned that the communication notebook is a method for enhancing social skills in children with autism. In this communication notebook, many details exist about the ASD learner's behavior during a day. The communication notebook goes back and forth between school and home and connects parents with teachers with each other.

Video Modeling

Reeve et al. (2007) emphasized the effectiveness of using video modeling for teaching social skills such as reciprocity communication and sharing pleasure with ASD learners. The video modeling method refers to a video in which an actor is "performing a target behavior prior to the opportunity for the learner to perform the response" (Plavinck, Sam, Hume and Odom, 2013).

Computer Based Intervention

Hetzroni and Tannous mentioned to the effects of a computer interactive-intervention program on enhancing communication of ASD children. By using those program ASD children. They indicate that "practicing simulated activities on the computer using familiar situations such as play, food, and hygiene enhances use of appropriate functional communication in natural settings" (Hetzroni and Tannous, 2004, p.106)

Theory

Sociocultural Theory

The Sociocultural approach to learning was first applied by Lev S Vygotsky and his colleagues in 1920 in Russia. The theory is based on the concept that human activities happen in a cultural context. Vygotsky developed a multifaceted theory which includes a wide circle of subjects such as the psychology of art, language, learning and development, by focusing on special needs for students' education. Vygotsky conceptualized "development as the transformation of socially shared activities into internalized process" (Steiner and Mahn, 2012). Sociocultural theory considers development as a socially mediated process that is different in various cultures. The theory claims that social interaction is a source of learning and has an impact on the individuals' cognitive development. According to him, development takes place under the impact of the education (Gindism, 2003).

Vygotsky defines a theoretical framework for the education of children with special needs. His finding affects all the contemporary special needs for education. Vygotsky's theory and the methodological finding could be the main source of inspiration in the field of children with special needs education. Vygotsky's approach claims that the positive atmosphere of society impacts disabled children in order to attain sociocultural knowledge and experience, and negative atmosphere prevents them from participating in activities with other peers. He tried to change the negative attitudes toward disabled persons. He emphasizes on the positive aspect of these children and describes his approach as a "positive differentiation". Vygotsky's theory indicates that humans would overcome mental impairment by creating alternative patterns of cultural development. Transformation happens from natural abilities to the higher mental abilities by means of psychological tools in disabled learners. Disability is a huge barrier for children in order develop, so a child with special needs demands various methods of teaching

and learning. According to Vygotsky, all the staff should be aware of the disabled child's needs. Learners with special needs require different curriculum, special technological tools, trained teachers and more time for learning. It should be a specific methodology for a child with special needs because they need "modified and alternative educational methods of teaching"'. In this approach disabled individuals' development is not slowed down, they are just developed differently (Gindism, 2003).

The learning theory of Vygotsky examines that the level of a child's development is characterized by the functions which are mature. If children have done something without help, it means that the function of that activity is mature. The zone of proximal development (ZPD) is defined by a problem which children are not able to solve independently. When a kid has difficulty with solving the problem, he/she needs an adult's guide. Collaboration between a child and an adult or older children works best in this situation. Children achieve cultural skills during this socialization process. ZPD represents that the current stage of child development shows the position that child does something without help and what children have done something with an adult or cultural artifacts help, it shows the potential development of children. The zone of proximal development indicates the importance of social interaction in a child's development and learning. Scaffolding refers to the action of persons who help children in learning. Scaffolding could be done by parents, teacher, or older peers. First scaffoldings provide the major responsibility, then, the child becomes more independent. (Lantolf, 2000).

Vygotsky emphasized on the schooling 's complex impact on the cognitive development. He indicates that the school's formal instruction shapes learner's development. According to Lantolf, Thorne, Poehner, (2015, p.8), "the ZPD is not only a model of the developmental process, but also a conceptual tool that educators can use to understand aspects of students' emerging capacities that are in early stages of maturation. When used proactively, teachers using the ZPD as a diagnostic have the potential to create conditions that may give rise to specific forms of future development".

Chapter 3: Methodology

Introductions

This chapter consists of the data collection and the data analysis methods applied in the study. Additionally, the ethical considerations relevant to the selected method, data analysis, and the limitations related to the methodology applied will be explained.

Data Collection

This research was an effort to find the methods that teachers can apply to enhance ASD learners' social interaction. Based on the research question's aim which, in fact, was finding out the teachers' own experiences, this study was carried out utilizing qualitative research methodology. Based on Hennink, Hutter, and Bailey's study, qualitative research, discovers people's own experiences by using different methods such as "in-depth interviews, focus group discussions, observation, content analysis, visual methods, and life histories or biographies" (Hennink, Hutter, and Bailey, 2011, p.9).

The study was conducted applying in-depth interviews as an effective method within qualitative research (Hennink, et al. 2011). Hennink et al. (2011) defined in-depth interview as a targeted conversation for gathering information about a specific issue. One-to-one interviews try to explore participants' feelings, experiences and stories around the subject matter (Hennink et al., 2011).

For starting an interview, the researcher must have an interview guide. According to Hennink et al., an interview guide includes a collection of questions that help the interviewer gather information needed to complete the research (Hennink et al., 2011). The interview guide in this

study included 11 questions of which 7 were formed based on the social interaction framework {Problem in maintaining eye contact, problem in initiating communication, problem in reciprocity communication, problem in sharing pleasure, problem in understanding the interest of others, lack of understanding the concept of personal space, and inability to act in accordance with the rules that are commonly known by the society} (Meressa, 2014) in order to gain relevant findings. Three questions had been designed for obtaining information about the social interaction generally without referring to any specific element. At the end, closing questions were formed in order to round off the interview (Appendix1).

In this study data was gathered via six interviews. 1 male and 5 female interviewees between the age 34 to 50 participated in this study. There were not limitations of gender or age. The primary criteria for choosing the interviewees were they had to be authorized teachers who have experiences working with children with autism spectrum disorder. This study uses a qualitative approach to investigate the full inclusion of children with autism who studied in regular school: Thus, the interviewees were selected among those who work with children with autism in a regular school, not a special school in Sweden.

The researcher attempted to find numbers of potential interviewees then communicated with them through the phone call. During the phone call meeting, the purpose of the study has been explained and asked them for a face to face meeting.

The interviews were conducted face to face in order to take advantage of verbal and non-verbal communication cues. The interviews have been conducted in the form of informal conversation in English. Before each interview started, I presented myself and the goal of my research: the interviews were conducted at the office of participating teachers, at school in the middle of April 2017. Each interview took approximately 40 minutes. The interviews were recorded with the permission of the interviewees by the " voice recorder" app which installed in researcher own cell phone. Then transcribed afterwards for the purpose of the analysis work. Verbatim transcription have done by the "express scribe transcription software". After verbatim transcript for each interview, all the information saved in the "Microsoft word" software. Furthermore, pen and paper were used in order to take additional notes during the interview sessions.

Ethical Considerations

Hennink et al. reflected on the importance of ethical considerations in a research. Ethical responsibility is more highlighted in qualitative research in which individuals' feelings, attitudes, opinions are investigated. Ethical considerations should be applied in the whole study process, from start to finish. The interviewees should be assured that their answers will remain totally confidential and will never be directly attributed back to the participants (Hennink et al., 2011).

All ethical considerations have been applied throughout this research. All participants have been informed on general information about the inquiry and the aim of the inquiry. The participants have also been notified in the beginning of the interview that interviewees' work place and their names would be anonymous in the research. All participants allowed the researcher to record their voices: They became aware that their information would be logged in the researcher's mobile in order to be examined in the university thesis.

Data Analysis

Constant comparison analysis was applied as the method for analyzing data. According to Leech and Onwuegbuzie constant comparison analysis is the most common method for analyzing qualitative data. This type of analysis is known as coding method as well. Constant comparison analysis is useful when the researcher is willing to notice the " underlying themes" through the available data. Constant comparison undertakes inductively which means that codes emerge from the data accordingly. (Leech and Onwuegbuzie, 2007).

The process of constant comparison analysis consists of these steps: Researchers should look into the whole data after having the data categorized in smaller categories. The small groups will be labelled with a descriptive code. Then all small categories will be grouped based on their similarities. A theme is recognized from each group (Leech and Onwuegbuzie, 2007).

After verbatim transcription for all the participants, all the information have read by the researcher carefully, then, divided data into smaller meaningful categories. After labeled the small group with the descriptive code, compared each new category with former codes, similar parts have labeled with the same code. Finally, main codes emerge from the data (inductively) by considering the research question and the goal of the research.

The data which present in the result part were provided based on the inductive codes which gathered through the verbatim transcripts of the participants. In the discussion section, the data are divided into two groups based on their functions.

Chapter 4: Results

Introduction

In this chapter, the findings derived from the research data will be presented. Learners with autism often do not learn social skills from their environment. Consequently, they have problems in forming proper communication. The impairments in social interactions that children with autism are facing are categorized into seven groups: Problem in maintaining eye contact, problem in initiating communication, problem in reciprocity communication, problem in sharing pleasure, problem in understanding the interest of others, lack of understanding the concept of personal space, and inability to act in accordance with the rules that are commonly known by the society (Meressa, 2014).

The aim of this research is to find the ways that help ASD learners overcome those seven social interaction difficulties. The findings were categorized and labeled in accordance with the seven groups presented above. The findings achieved through the main questions of interviews will be presented as inductive themes based on their frequency in the interviewees' responses.

Maintaining Eye Contact

Using Picture

Visual cues are one of the most frequent themes in the data collected. All of the participants emphasized the positive impacts of visual cues in order to enhance the social interaction skills among learners with autism. Showing a picture of the eyes, for instance, is a visual cue that is mentioned by the participants (Figure 4.1).

> P3: *When I talk to her I usually show her a picture of the eyes, then I say the student's name at the same time as I ask her to look at me. I touch her gently: It works most of the time.*
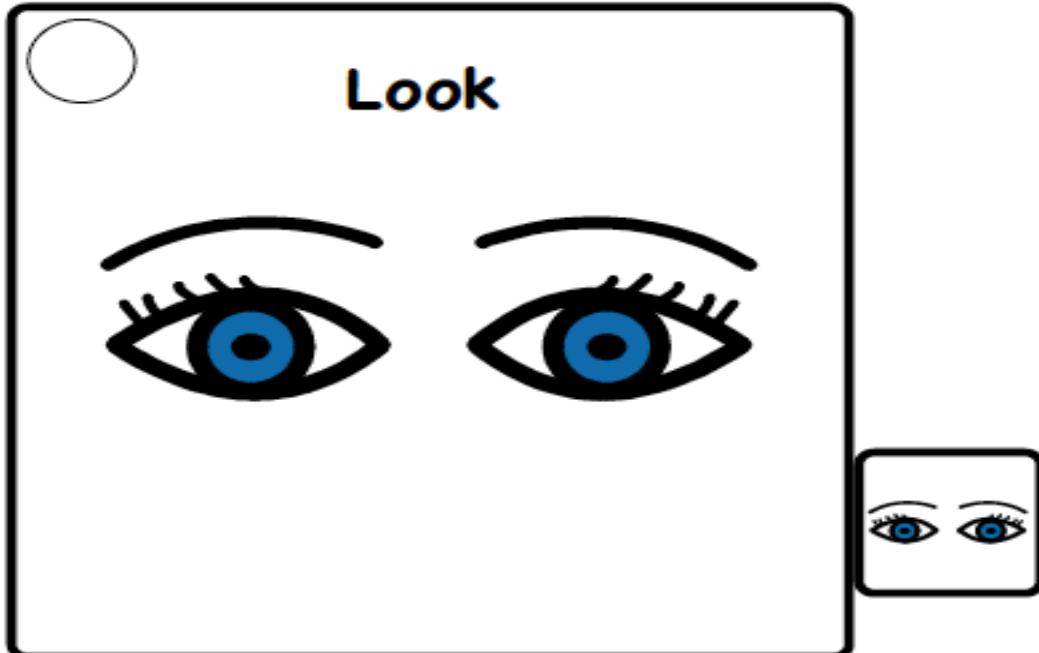
Figure 4.1 "Picture of eye"

Back By Back

One participant pointed out to a special method for enhancing and maintaining eye contact with autism Spectrum Disorder learners. The method is named Back by Back (Figure 4. 2).

> P1: *We usually sit on a carpet in a dark room back by back. So we cannot see each other Because they need to have relation with me, I choose a topic that is interesting for the child: it could be a weather or something that happened at the school such as a conflict, fight or argument, or a thing that I know it would be interesting for her. Then we talk and start to look at each other just for a small time, a couple of seconds, then half a minute, then one minute. Finally, we can get longer and longer time.*

Figure 4.2 "Back By Back" sitting position to start talking and developing eye contact

Initiating Communication

Talking

Most of the ASD children have a difficulty in initiating a communication. Talking happens when teachers stay near the children and help and support them in everyday communication. They need teachers' support in order to build a conversation and to communicate with other peers. Talking about the child's interest is highly recommended. The teacher should explain to the ASD child what other children want and what they should do.

> *P2: She has problems to communicate with her friends. So I have to stay between them and say: Now your friend wants you to do this or that or not to do this and as a teacher, I have to listen to the her because she wants to talk with you. This is an obvious problem with her.*

Using Object And Body

Using an object is an appropriate way to help children with autism to initiate a communication. Objects like play dough can be helpful: The objects that they can touch and feel.

P1: I usually start with objects to increase focus, they can learn and then they can talk, because they have not very much focus on talking or on the communication. Because they have difficulties with these, they are just watching so, we touch something.

Involving the body of such children works the same as using objects and helps ASD learners starting the communication process. They often need the teacher's support.

P4:Just touch something or do something with the body, like walking, some running, dancing or giving a massage. At the start of talk or during the lunch time. They like a massage with ball massage, they get relaxed and then we can have communication.. ... lunch is very good, we can sit down, then we can talk because they feel something else that is really good but just start with short moment.

Using Picture

Showing a picture is another helpful way in the process of starting a communication building. Visual items like pictures which are interesting for these children is a method for enhancing their social skills. Visual cues should be clear and simple.

P4: It may be easier to begin with a picture and talking about it. It is important to try to have a conversation without demanding for a response. It is better to not quit a communication because of not getting any responses.

Reciprocity Communication

Role Play

In order to enhance reciprocity communication among ASD learners, role playing would be useful. ASD Children with the support of their teachers can create in a different situation. A teacher interprets the situation and enhances their understanding of current circumstances.

> *P1: I use role playing repeatedly and step by step, I think it is really good, I have the student next to me then we can react in different situations and how we can do this and how we can continue but in small groups not with the whole class.*

Communication Notebook

For enhancing reciprocity communication in ASD learners, a notebook is recommended. It is a notebook with colorful and simple pictures that can be used based on the child's problem and demands. It is better to start with the introduction about the child and talking about the differences between him/her and others. In this notebook they talk about their desires, needs and some possible annoying things. The teacher can explain the desired behaviors and undesired behaviors in a communication notebook in a simple and clear way. Pictures or any other visual cues are recommended to be used in communication notebook.

> *P6: Teachers, parents and other caregivers talk about the child with other students using the notebook. In the notebook there is important information related to ASD students. For example, if he did not like to be in noisy or crowd places. In this notebook he explains his needs and asks other children to get an adult involved if he becomes mad at them. There is also necessary information about this child for adults. All of the information obtained must be represented with simple pictures.*

Comic Strip

The comic strip is a another way to teach ASD learners how they can establish appropriate reciprocity communication with others. In this method, the teacher draws what happens or will

be happening in separate boxes, talks about, and explains the situation at the same time. Based on participants' information it can be helpful to understand other aspects of the people.

> *P5: it should be hard to solve this problem, but a series of charts can be concrete. You should do it like a comic strip. You make a comic strip book with multiple boxes and then draw the events in the different boxes. The teacher should draw how they can manage a conflict or build communication.*

Positive Reinforcement

The result has shown that if ASD leaners are welcomed into the circle of their friends, appropriately, they can learn reciprocity communication better. They need positive feedback from their friends and others, even for doing simple things. Otherwise, they will lose their motivation for cooperating and continuing communication. Sometimes they need more encouragement compared to other students. In most situations, teachers' or other students' help as needed.

> *P2: Sometimes reciprocity communication works when she is with a student that accepts her. Sometimes other students realize that and are nice to her talk to her in a nice way. Then she is ok and wants to cooperate. But there is no communication if the other ones are not willing to accept her. Then she feels blocked and gets mad. She will not be cooperating and she needs someone's help with that.*

Talking

As the results show, talking with the ASD learners is an effective way for developing their social skills. The addition of drawing and showing pictures to talking to them will greatly enhance communication skills of ASD children.

> *P3: I use a white paper and I draw when I talk. She tells me what happens during a communication and I draw at the same time. Talking and drawing when she can see and hear: I use pictures and we talk about what is happening, what we can do next time if it happens. That is very good. But it should be very clear.*

Sharing Pleasure

Using Picture

Some of the participants in the study believed that visual items could be a very suitable to utilize. A teacher asks ASD learners to show their pleasure through a picture. ASD children can choose the favorite picture from educational websites and talk about their pleasures with the help from a visual item.

> *P4: Using picture is a good method for children with autism to show their pleasure. There are programs on different websites where you can print a picture that can be used for better communication with these children. Teacher and child sit together and choose pictures to pick up a specific topic or subject.*

Drawing

Based on the results obtained, ASD children can share the pleasure by drawing or painting. ASD learners can express their pleasure through the colors in the painting. Teachers can show their favorite colors and then encourage such students to show their favorite colors or express their feelings by choosing a color or by drawing or painting.

> *P1: I think this method is very good and the teacher can practice on this: you can paint your favorite color and say this my favorite color and ask what is yours?*

Understanding the Interest of Others

Theatre

The participants of this study mentioned role playing or pantomime as a method for teaching ASD children to understand their own interests and those of others. Theatre can be conducted by the teacher and students play in it. The teacher uses pantomime and asks the children to guess about the feeling. The teacher uses theatre for correcting the inappropriate behavior that happened in the past. They play the event exactly as it happened before. Then the teacher

conducts another scene indicating the appropriate behaviors and show how they should act next time. This method could be a role play with words or pantomime without a word.

P6: we show to each other with theatre, Both theatre and pantomime. We conduct the role play and they guess how we feel: for example, if they fight in the break we can play the fight and talk about it she watches,... and we talk about how can we do when it happens and how we can solve the problem. We play what happened then we redo, making new drama by saying I want to have this, next time I want to be this, like this.

Using picture

Using pictures, talking and drawing are some of the most frequent themes which were mentioned by the interviewees in this research. ASD children can increase their understanding of others' interest with help of pictures and talking at the same time.

P5: with colorful pictures that I copy and can show , we talk about feeling: like how you look or how your face should look like or how the body language should be, and how other people look like when they are happy.

Social story

Participants in this research also mentioned the use of social storis as an effective method to help ASD children to understand the interests of others

P4: Because of being difficult for these children to understand other people's actions or to analyze them with a different perspective, so it's better to help them to interpret different situations that can arise. It should be done by talking, drawing or doing social stories.

Understanding the Concept of Personal Space

Smileys

As the findings indicate, using smileys is a proper method for enhancing understanding of others' feelings. There are different smiley pictures that indicate different emotions (shown in figure 4.2). Smiley items are used to teach ASD learners about personal space. Teachers training in small groups can show how expressing feelings can differ by showing a relevant figure. When they come too close to someone, the students show the angry or sad figure.

> P1:we have to repeat how to say things or how they can touch other people: this should be practiced in several ways. We can have calm music and see how they feel: they can show different smileys like hearts or use smileys when they have pain. They can say this is me when I am angry and show the smiley, I cry, now face looks like this then we show the smiley or when I am mad. But you may cry when you are sad, and I cry when I mad, I show the related smiley. Show that you can do these in different ways.
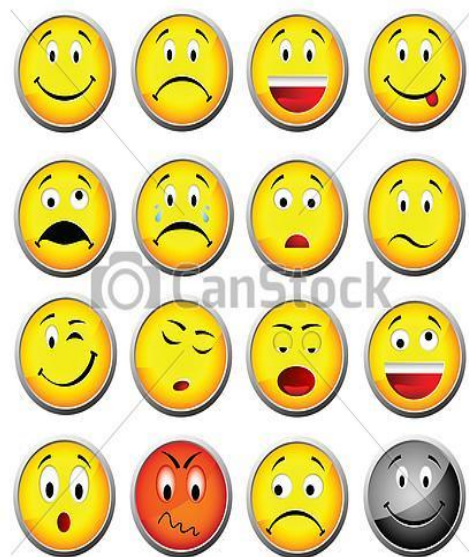
© Can Stock Photo - csp6087074

Figure 4.3 "Smiles used at the school to cope with communication difficulties of ASD students"

Color Word

Based on participants' responses, there is another way to teach ASD children about the concept of personal space. First, a teacher asks all the students in the group to choose a color, then she talks about the meanings of different colors. For example Student number 1 chooses color red and student number 2 yellow. For student number 1 red means: I am angry. For student number 2 yellow means: I am annoyed. When ASD students break the personal space of other, they show their color to him/her. It means they need to stop there: I would be angry if you continue.

> *P1: you have to teach them what is important for you and that before you got mad show them what can be a mad situation , what color do you want? What color means mad for you? Maybe red for someone and green for someone else: it is very different, and then can write how you feel, and then not applying facial expressions but just color in the face. They show that is my angry color*

Secret Code

Sometimes it's needed to create codes that are applied between classroom members or in a small group.

> *P1: We have words that I have worked with kids and they say the color yellow and that now it is not good. Then, we teach the other kids yellow means stop for you and means for everyone so when someone says yellow then you have to back off. The student learns that the word "yellow" means to me that I have to stop and for everyone else it is the same, so we have to learn different words that is to help with communication. It works with the group or for me or little group it is like a secret code that helps the student with the everyday situations.*

Accordance with the Social Rules

Using Pictures

Visual cues were one of the most repeated themes in the results. The results have shown that visual items could be helpful in order to increase understanding of social rules. A teacher usually needs to teach simple rules, such as how students can flush a toilet or how they can dress up. Through the use of visual cues and teachers' support, ASD learners can overcome lack of understanding of social rules.

> P1: Sometimes I teach with a picture and say this is the right way to do or this is the wrong way to do. I maybe need to draw on paper how these students should do. That is a picture of a trash and then ask what we have to do? We should repeat all these every day.

Checklist

Experienced by most of the participants in this study, using a checklist is emphasized for ASD children. The checklist should be very clear and should rank things in simple steps. A checklist consists of simple tasks such as taking food or using the toilet.

> P1: You have to be so close to her and explain everything with visual items and words. It is important to explain social rules and how to say e.g. good morning when you sit down here how to talk. They have the checklist like "take your shoes first", how to wash hands and which one is first, just depends on the student. Rank the things in simple steps like 1,2,3... . Have a checklist everywhere, checklist on the phone on paper, and post it to their home. They know this is how, and when they start their day what needs to happen step by step.

Showing in a Practical Manner

According to the teachers involved in this study, ASD children do not learn the social rules just by listening. They need someone to show them the rules in a practical manner, then they learn the process.

> P6:Talking is not enough, they should watch at the same time. For example in the gym, we explain about the rules of a game, other student understand, but it is not enough for ASD students. We should show them practically what the game's rules are.

One Step Before

Interviewees in this research mentioned the method that helps the ASD leaners adjust themselves in accordance with the social rules is named as "One Step Before". ASD children often have difficulties to perceive social rules, even though they are simple. In order to avoid this from occurring, teacher should always stand 'one step before'. It means that, the teacher should be aware of the new position and the ASD child's demands related to this situation, then explain to him/her about the rules before anything happens.

> P3: you need to talk about the rules in a game before , if you do not, she can be sad or angry. It is important to say it before you do something in a sport or game or the rules in the traffic, everything, you need to talk about it before.

All interviewees in this research emphasized some principles as main cues in order to work with ASD learners. Teaching ASD learners requires a wide range of techniques and methods which vary from student to student. But Some of these methods are applied to all of the ASD students accordingly.

> P3:Talking, repetition, use of simple things, starting with a short moment, working in a small group or one_ to _one interactions can be useful. The process of teaching takes a long time and it is important to use visual cues.

One participant referred to an important cue, although it cannot be considered as a method, that has an impact on ASD learners and improves lack of eye contact in them. The interviewee

indicated that, as a teacher or any other person working with an ASD child, one should never force him/her to look at you.

P4: You can enhance a child's attention by this fact that people look at each other during a conversation and you can explain the reason for this to the ASD learner.

Participants in this study indicated some other problems in ASD leaners such as problems in decision making, making choices, problems with technology and timing, problems with concentration as other examples of issues that such children are experiencing. They emphasized the lack of time and human resources in order to work personally with SD learners.

Chapter 5: Discussion

Introduction

This study aimed at finding out how teachers try to enhance social interactions in ASD students and which specific methods they apply. To achieve the study's goal, 6 teachers who work with students with autism were interviewed. Participants were asked to share their experiences in working with such children and the methods they apply in order to develop better communication skills among ASD students. In order to understand the applied methods for developing ASD children's social interaction, sociocultural theory has been applied.

The impairments that ASD children are facing consist of: problems with maintaining eye contact, problems in initiating communication, problems in reciprocity communication, problems in sharing pleasure, problems in understanding the interest of others, lack of understanding of the concept of personal space, inability to act in accordance with the rules that are commonly known by the society (Meressa, 2014).

The study tried to find answers for each of these issues based on the teachers' experiences. The results suggested different methods for each social interaction impairment which will be discussed further in the next section.

Maintaining Eye Contact

Primarily, problems with maintaining eye contact was investigated and the results show 2 methods are used in order to overcome this problem among ASD students*: Back by back, Visual cues*.

- Back by back is a method in which a teacher and an ASD student sit on the carpet in a dark room, leaning on each other's back (Figure 4.1): then, they start talking about a subject that is interesting to the student. They start with a short time looking at each other, then they make it a little bit longer each time they start looking at each other. This method can be categorized as a specific game for ASD learners which, according to one participant, has a positive impact on enhancing eye contact in ASD learners.

- Participants also described the visual cues as an effective method. Showing pictures of the eyes or drawing eyes can help ASD leaners maintain eye contact in an improved manner. However, it is important to avoid forcing an ASD student to have eye contact and this was represented as a behavior that has a reverse impact on the improving social interaction. When a teacher forces an ASD student to have eye contact, the trust between them will be broken. Having eye contact with an ASD child often takes time and demands a deep relationship and trust. Avoiding this pressure is a way to help constructing a good relationship which will eventually lead to trust and more eye contact.

The findings of the research in this part are in accordance with Turkington's study in which he emphasized visual cues and playing games like Floor Time, in order to develop eye contact in ASD learners (Turkington, 2007).

Initiating Communication

The results of this part were categorized into 3 groups. *Talking, Using objects and Body, Visual cues.*

- Talking and visual cues are much more highlighted than other methods used to improve communication skills among ASD learners: these students need teachers' support to initiate communication. The teachers need to talk about the learners' interests and this was introduced as a suitable method for this impairment. Visual cues can be used at the same time as talking or as a separate method. Visual cues could be a picture or painting or drawing used by teachers when interacting with these students.

- ASD learners usually have problems with maintaining concentration. They often get distracted by looking at other kids or something else. Using tangible things such as playing dough or doing something physical like dancing, walking and running can help them have more concentration. Focusing on an object gives teachers a chance of initiating communication.

Participants in this study referred to building trust as a factor that can help with initiating communication using the methods mentioned above. In children without ASD initiating a communication can occur at any levels of trust, but the situation is different in ASD children.

They need a high level of trust to communicate with others. The teacher should try to build deeper relationship with ASD learners then, try to communicate with them step by step. Turkington mentioned the Visual cues and Talking, as treatments for ASD children with communication problems.   According to Turkington the Picture Exchange Communication Systems (PECS) is a useful method for helping an ASD child to have communication with anyone.

Reciprocity Communication

Building reciprocity communication is also a challenge amongst ASD students and the finding presented in this section address this challenge: the findings are categorized into 4 groups which which include*: Role play, Communication notebook, Comic strip, Positive reinforcement and Talking*.

- Applied behavior analysis is known as a one of the most useful methods in order to teach social interaction to the learners with autism. The aim of the Applied behavior analysis method is to reduce inappropriate behavior and increase appropriate behavior (Turkington, 2007). The results of this study indicate that the teachers can use applied behavior analysis in different situations. They correct the ASD learner's inappropriate behavior by applying various methods. Role play and talking are types actions that can be used to introduce proper behavior and communication to ASD learners.

- Results also indicate that communication notebooks have a positive impact upon building reciprocity communication. Pictures and simple structures are used in communication notebooks: given tasks must rank in very clear and simple manner. Teachers describe what is expected from ASD students on various occasions.

- The respondents believed that the effect of comic strips on reciprocity communication in ASD learners is essential. Drawing different situations in separate boxes and at the same time explaining what is proper and improper behavior and how they can react in different positions are of great helps: comic strips can be colorful.

- Like any other children, ASD learners need encouragement and support from others. But they need to be encouraged more than others: They need to be encouraged for doing

ordinary things as well. They should be accepted by the circle of their friends, otherwise they will lose their self-confidence and become angry, sad or disappointed.

Communication notebook, role play and talking are in line with previous works mentioned in the relevant literature. Reeve et al. , for instance, emphasized video modeling as a method in order to enhance reciprocity communication in ASD children (Reeve et al., 2007), yet video modeling is not among the results which was gathered from participants in this study.

Sharing Pleasure

The findings of this study emphasize the significance of "drawings" in order to encourage ASD learners to share their pleasure.

- Drawing is one of the most frequent methods suggested by the participants in this study: The teachers can draw their feelings, then ask the ASD students to draw their own feelings. The method also suggested that choosing a color for representing a feeling can be helpful to a great extent.

Reviewing relevant literatures indicated that utilizing visual cues is an effective method in working with children with autism. The results of this research confirm the role of drawing as a visual cue in improving communication skills of the ASD children specifically when the goal is to overcome the problem these students have with sharing pleasure. Reeve et al. stated that video modeling is an effective method to help ASD learners to share their pleasure (Reeve et al., 2007).

Understanding the Interest of Others

The findings of this research emphasize the significance of the 3 methods which are effective for teaching ASD students that understanding interests of others is very important in everyday interactions. These methods include: *Theatre, Visual cues and Social story.*

- The problem with understanding the interest of others leads to misunderstanding and conflicts between students. Theatre is an opportunity for teachers to teach ASD children that understanding and interpreting others' interests are important here. Playing theater is highly recommended by participants of this study. Using theatre allows teachers to

rebuild the events which happened between students and the teachers guide ASD students to a direction where they get to know what an acceptable behavior is in that situation.

- Using visual items and talking at the same time about others' interests is one of the most mentioned themes in this study.

- The social story is also mentioned as a useful method used by the participants. The method consists of stories or scripts which have been read to ASD learners. This method helps them to interpret different situations and analyze different perspectives of people. Social stories must be repeated as long as ASD learners do not behave appropriately.

The social skills training method which was presented by Turkington before, emphasizes a social story telling for teaching social skills to ASD learners (Turkington, 2007). Matson et al. also stated that a combination of visual cues, music or computer presentations with social stories can be helpful in teaching ASD learners about communication skills (Matson et al., 2007). The findings in this part which elaborated the importance of visual cues and social stories are in accordance with previous research works in this area.

Understanding the Concept of Personal Space

Another specific issue ASD students are having difficulty with is understanding the concept of personal space which can directly affect the way they communicate at schools. Analyzing data indicated that there are 3 methods that teachers can use to overcome this problem: utilizing *Smiley, Color word and Secret code.*

- By using smileys teachers can help ASD learners understand others' personal space, emotions and interests. Smileys which are shown in figure 4.1 consist of different pictures which indicate different emotions. The teacher should teach other students to use a smiley to express their emotions to ASD students.

- Color words and secret codes could be a secret language for ASD children and their friends and teachers. They make a new language and symbolized a word for an emotion. It should be short and clear. For example, red indicates an annoying situation, for

example the word red can be said to show the ASD children that they are breaking the others' personal space.

Teachers have been using applied behavior analysis in order to teach the concept of personal space to ASD children. By using smileys and color word and secret code, teachers educate children on unpleasant situations. ASD learners recognize how their friends became annoyed because of their behavior. Teachers inform them about their failure. Since some of the ASD children have difficulty in matching their facial gestures with their own feelings, this could be a useful method for this type of autism. Although the results of this part is in line with the related research works, it is worth mentioning that using smiley and color word or secret code are new methods that the researcher has observed.

Inability to Act in Accordance with the Social Rules

ASD students are known also for being Unable to act in accordance with the social rules. Finding in this part were categorized in 4 parts which are*: Visual cues, Checklist, Showing in a practical manner, and One step before.*

- Utilizing visual cues, as mentioned before, is amongst the most frequently applied methods in this study. The teachers can assist ASD learners to act properly and in accordance with social rules. A rule could be a simple one such as taking food or taking off clothes. Using pictures related to the social rules would be a suitable method to improve these students' abilities of acting in accordance with social norms.

- Having a checklist is a reoccurring theme suggested by the respondents in this part. The checklist should be very clear, simple. Tasks in the checklist are divided into smaller parts and should be ranked by name.

- Demonstration is suggested by interviewees as a method to improve the social interaction in ASD leaners. By employing this method, ASD children can hear and watch the rules at the same time.

- One step before is a method that help ASD students rely on the teachers' ability to predict the situation. Teachers should always stand one step before ASD students and describe the situation before they encounter that situation.

Based on the literature related to the subject matter of this study, The Discrete Trial Training (DTT) method is important for improving social skills in ASD learners. Based on this method the learning tasks are divided into simple components and small steps (Turkington, 2007). The results of the study show the importance of using checklists in teaching social rules to ASD students. A checklist should be simple and accompanied with simple pictures. The results in this part are in accordance with the related works.

Looking at the results achieved in this study, it can be said that the findings are in accordance with the outcomes of other previous studies in this field. All participants emphasized some main principles in working with ASD learners that offer a common ground that are also seen in previous research works. All the teaching schedules should be based on short-term periods, very clear and in small groups: The teaching process should be repeated and can take a long time to achieve the desired results.

Although reviewing relevant literature indicated that Computer-based intervention enhances ASD children communication, participants in this study did not mention to those methods.

Summary of Discussion

This study indicates the positive influence of the teachers' role in ASD learners' social interaction development. The methods applied by teachers vary from student to student and partly depend on the teachers' creativity. The gathered data through the interviews can be divided into two main groups. Visual methods and Interactive methods: Visual methods in this study, are those which are related to seeing (Table 5.1). Interactive methods, rely on the interaction between the learners and teacher. However, both groups are interwoven into each other and it is hard to draw a clear line between them, but using a picture is the main principle in visual methods. Visual methods usually are one-to-one methods and interactive methods can apply for the whole class or a small group of students.

Visual methods	Interactive method
Using picture	Back by back
Communication notebooks	Talking
Comic strip	Role play
Drawing	Theatre
Smiley	Social story
Checklist	Using object
	Secret code
	One step before
	Positive reinforcement
	Showing in a practical manner
	Color word

Table 5.1 " Summary of the methods involved in improving ASD learners' social interactions"

Sociocultural theory claims that social interaction is a source of learning that influences development (Gindism,2003). The results of the study is accordance with the sociocultural theory: Analysis of the data gathered has shown that learning in ASD learners takes place through the social interaction. Since the social interaction is a source of learning, a teacher would apply methods in which more social activities such as interactive methods are engaged.

Sociocultural theory emphasizes the zone of proximal development (ZPD) which children are not able to act independently. ZPD represents the current stage of child development in the shadow of teachers' support: ASD learners can pass through the zone of ZPD by applying the mentioned methods. Teachers help the ASD learners to go to the higher level of development, accordingly.

According to Vygotsky's approach formal instructions's of school affect on the cognitive development. Using ZDP model as a conceptual tool, enable teachers to understand the "aspects of students' emerging capacities that are in early stages of maturation" (Lantolf et al., 2015,p.8). Using ZDP zone, assist the teachers with finding the appropriate method based on the ASD learner's capacities.

Limitations of the Study

This study aimed at investigating the social skills in ASD learners in mainstreaming. All the methods mentioned by the teachers relate to the full inclusion ASD children not with the severe cases. It is sometimes hard to draw a line between the communication concepts, for example initiating communication and reciprocity communication. Therefore, it was difficult to achieve a clear answer about two communication concepts. ASD children's social interaction problems are different from child to child and all of impairments do not appear in all the ASD children so it was hard to find answers for all impairments.

Although the literature have studied in this study was limited,due to some limitations, it was fairly representative.

Conclusion

This study aimed to investigate the methods which enhance social interaction with the ASD learners. The methods were studied through the lens of sociocultural theory.

The findings indicate a set of methods for enhancing social skills in ASD leaners. Two main groups of methods are identified in this study: Visual methods and Interactive methods. Although all the participants emphasized the use of visual items, the number of suggested methods in the interactive group is much higher. The methods which are placed in the interactive group are more varied than visual methods. In the visual methods, the available source of learning is a picture but the interactive method accesses to a wide range of learning sources, such as game, theatre, music and story.

 ASD learners who are related to the particiapnts in this study are "full inclusion" and study in a regular elementary school; they do not have any special teacher. The participants referred to the lack of time and human resources in order to have one-to-one interaction with ASD learners. There are at least 20 students in regular classrooms in Sweden. Usually, one main teacher and one teacher assistant work in the classroom. All the students in the classroom, more or less, need the teacher's help and support. The inherent nature of visual methods demands one-to-one interaction; other students cannot take advantage of these methods. The interactive methods give the teacher opportunities to engage all the students in educational activities in a regular

classroom. In addition to ASD learners, there are often some peers in the classroom who are not diagnosed with ASD, but they still have a problem with proper social interaction. Employing the interactive methods is a fascinating way for them in order to develop social skills. Besides, teachers overcome the lack of time and human resources with the assistance of interactive methods.

Sociocultural theory claims that social interaction is a source of learning and has a great influence on children's cognitive development (Gindism, 2003). Since interactive methods such as theatre basically occur in a social context, they can be considered as a rich source of learning which can lead to social interaction development in ASD children. Results from data in this study emphasize the methods to engage much more in social interaction with other peers and teachers. Based on sociocultural theory, development takes place under the impact of education (Gindism, 2003). The results have shown that the development of ASD learner can take place by the use of various educational methods. After using visual methods to teach students the fundamental social skills, they can move to the next stage of development by applying the interactive methods. This shifting should be done based on the ASD learners' ability and at the teacher's discretion.

The results also suggest the other problems which ASD children encounter that prevent them to have appropriate social interaction, such as problems with technology, problems in decision making, problems with timing, problems with controlling emotion and problems in construction. Although these problems are not classified in the social interaction framework, they have a negative impact on social interaction. Considering the findings of this study, it suggests some methods for overcoming these problems.

In conclusion ASD learners need special support from teachers and other students to develop socially. Achieving this objective is only possible through using appropriate methods. A combination of both interactive and visual methods could be effective in enhancing social interaction with children with ASD. By considering the time, human resources, and ASD learners' abilities and desires, all the existing methods in this study can be applied and can be useful.

References

Brooks, P., Christopher, A., Gallagher, T., & Gallagher, P, A. (2016). Effects of a Group Teaching Interaction Procedure on the Social Skills of Students with Autism Spectrum Disorders, *Education and Training in Autism and Developmental Disabilities*, 51 (4), 421–433, Division on Autism and Developmental Disabilities, P. 421

Christopher, A., Gallagher,T & Gallagher, P,A. (2016). Effects of a Group Teaching Interaction Procedure on the Social Skills of Students with Autism Spectrum Disorders, *Education and Training in Autism and Developmental Disabilities*, P. 461

Collins, W, C., (2005). Tell Me The Story. *Gary C. Collins Publishing*, P. 15,16.

Corsello, C., (2005). Early intervention in autism. Lippincott, *Williams & Wilkins*, Inc, v. 18, no.2,. 74-85, p. 74

Fernell, E & Gillberg, C. (2008). Identifiering och utredning av barn med autismspektrumtillstånd Tidig diagnos viktig vid autism. *läkartidningen* nr 16 2008 volym 105, p.1171 ,

Gillberg, C & Coleman, M. (2000). The Biology of the Autistic Syndromes. *Clinics in developmental medicine*, No 153/154, p. 1

Gindism, B. (2003). Remediation through education: Sociocultural theory and children with special needs Article., *Center for Cognitive Assessment and Remediation*, DOI: 10.1017/CBO9780511840975.012, p. 4, 5,6, 7, 13, 14, 18, 24, 25

Hall, E. (1966). The Hidden Dimension. Garden City, New York: Doubleday, p.13

Hennink, M., Hutter, I. & Bailey, A. (2011). Qualitative research methods. *SAGE publications*, p.9,230

Hetzroni, O, E & Tannous, J. (2004). Effects of a Computer-Based Intervention Program on the Communicative Functions of Children with Autism, *Journal of Autism and Developmental Disorders,* Journal of Autism and Developmental Disorders

Kozima, H., Nakagawa, C & Yasuda, Y. (2005). Interactive Robots for Communication-Care: A Case-Study in Autism Therapy. *IEEE International Workshop on Robots and Human Interactive Communication*

Lantolf J, P. (2000) . Introducing sociocultyral theory and second language learning. *The Pennsylvania State University*, p. 2,17

Lantolf, J, Thorne, S. L, & Poehner, M. (2015). Sociocultural Theory and Second Language Development. In B. van Patten & J. Williams (Eds.), Theories in Second Language Acquisition, *New York: Routledge*

Laugeson, E, Frankel, F, Mogil, C & Dillon, A, R. (2008). Parent-Assisted Social Skills Training to Improve Friendships in Teens with Autism Spectrum Disorders, *J Autism Dev Disord*,39:596–606 DOI 10.1007/s10803-008-0664-5, p.597

Leech, N, L, Onwuegbuzie, A, J & Houston, S. (2007). An Array of Qualitative Data Analysis Tools*: A Call for Data Analysis School Psychology Quarterly*. Vol. 22, No. 4, 557–584, p. 565, 566

Lough, E, Hanley, M, Rodgers, J. , South, H, Kirk, D, Kennedy, D & Riby, M. (2015) .Violations of personal space in young people with autism spectrum disorders and Williams syndrome: insights from the social responsiveness scale. *Journal of autism and developmental disorders*, p.11

Matson, J,L, Matson, M, L & Rivet, T,T. (2007). Social-Skills Treatments for Children With Autism Spectrum Disorders*, Louisiana State University Behavior Modification*, Volume 31 Number 5 ,682-707 Sage Publications 10.1177/0145445507301650.

Meressa,S. (2014). Learning problems of children with autism and the challenges in the teaching process: the case of Nia Foundation Joy Center, Master thesis*,* Addis Ababa University

Millar, A. (2013). Communication, social, reciprocal and Autism. Cambridge *Supervision Training, Cambridge*, UK Volume 1 (Issue 2). p. 17,18

Mundy, P, Delgado, C, Block, J, Venezia, M, Hogan, A & Seibert, J.(2003). Early social communication. scales (ESCS), *University of Miami*.

Plavnick, J, B, Sam, A, M, Hume, K & Odom S,L. (2013). Effects of Video-Based Group Instruction for adolescents with Autism Spectrum Disorder. Vol. 80, No. 1, p. 68

Reeve, S, (2007). Establishing a generalized repertoire of helping behavior in children with Autism, *Journal of applied behavior analysis*. 40, 123–136 number 1, p. 133

Rutter, M. (2005). Aetiology of autism: findings and questions, *Journal of Intellectual Disability Research*, p. 232

Sansosti, F,J. (2010). Teaching social skills to children with autism spectrum disorders using tires of support. A guide for school-based professionals. *Psychology in the Schools*, Vol. 47(3), p.257

Steiner, V, J & Mahn, H. (2012). Sociocultural approaches to learning and development: A Vygotskian framework. *EDUCATIONAL PSYCHOLOGIST*, 31(3/4), 191_206, p.190, 191

Trevarthen, C, Aitken, K, Papoudi, D& Robarts, J. (2014). Children with Autism Diagnosis and Interventions to Meet Their Needs*, Jessica Kingsley Publishers London and Philadelphia*, p. 5

Turkington, C. (2007). The Encyclopedia of Autism Spectrum Disorders. *Library of Congress Cataloging-in-Publication Data* , p. 8,20,21,22,23,25,29,31,32, 37, 38,39,42, 45,58,65,66,78,86,93, 110,111, 121, 122, 137, 146, 147,149,

Vygotsky, L. (1978). Mind in society. The development of higher psychological processes (Ed. by M. Cole, V. John-Steiner, S. Scribner, & E. Souberman). *Cambridge, MA: Harvard University Press*, p. 86

Zlatić, L. (2014). Psychology of Communication, Contents, Methods of Work, Effects, Methodological manual for work with new methods with students, p. 73

Appendix 1

Interview Guide

Introducing the research and request permission to record interviewee voice.

1) How can you assist the learners with Autism maintain eye contact?

2) How can you assist the learners with Autism to initiating communication?

3) In which way can you help them to solve the problems in reciprocity (cooperation)?

4) In which way can help the learners with Autism to share pleasure?

5) How can help learners with Autism in understanding the interest of others?

6) How can help learners with Autism to enhance and lack of understanding of the concept of personl space?

7) How can help learners with Autism to act in accordance with the rules that are commonly known by the society?

8) Is there any special program or teaching method or technological tools for learners with Autism in assisting them develop their social interactions?

9) To what extent does the teacher support the learners with Autism to interact with other students?

10) What is your main role as a teacher?

11) Is there any important or interesting things that you want to share with me?