

# Autism Spectrum Disorder: A Review of contemporary literature on Common Communication Difficulties and Recommended Research Based Intervention Strategies

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**Abstract:** The aim of this paper is to conduct a general review of contemporary literature about communication difficulties affecting learners with Autism Spectrum Disorder. It further reviews the recommended research based intervention strategies on the same. To achieve this, articles and research findings published in international peer reviewed journals were objectively scanned through. The target beneficiaries of this study are parents of learners with ASD, educators, speech therapists related service providers and other relevant stake holders. Learners with Autism Spectrum Disorder exhibit a series of communication challenges. Although not every child with ASD has a language problem, their ability to communicate varies across the spectrum. It is dictated by severity, cognitive ability and social development of the individual. Majority of individuals have challenges in both receptive and expressive language. Further, almost all learners with ASD have difficulties understanding body language. Failure to understand context, abstract and figurative language is also a common barrier to communication in individuals with ASD. Majority individuals with ASD also struggle with meaning and rhythm of words. Many concentrate on the key word and not the entire statement during conversations. Other communication challenges include echolalia, lack of reciprocity and turn taking difficulties. To address the above challenges, researchers have come up with evidence based intervention strategies. They include AAC, manual signing, pantomime intervention, eye gaze intervention, picture exchange communication and facilitated communication. Interventions fall into two categories. the ones speech therapist use and those they train family and caregivers to use. No one intervention technique works perfectly across board. Speech Therapists must therefore understand the needs and behavior of the individual child before using or recommending a strategy. This will reduce possibility of system abandonment. Some interventions are hi-tech while others are low tech, cheap to make and easy to use. For positive results, family members and peers need to be incorporated in the interventions.

**Key words:** Autism Spectrum Disorder, Communication Deficit, AAC, PEC, Video Modeling, Communication deficit interventions, Expressive language difficulties, receptive language difficulties

## I. INTRODUCTION

Autism Spectrum Disorder is a neural developmental condition characterized by impairments in

communication, social skills, restricted interests and repetitive behavior. Further, majority individuals with ASD respond to sensory stimuli atypically (McPartland et al., 2016). Though not all, epidemiological studies show that children with ASD have a high prevalence of exhibiting emotional and behavioral problems. This is inclusive of anxiety, depression, hyperactivity and aggression (Tsalet al., 2020). Another classical feature of ASD is rigidity, stereotyped behaviors and desire for sameness (Lyons & Fitzgerald, 2013).

The terms spectrum in ASD indicates a wide range of symptoms and severity (NIMH, 2018). It implies that needs and strengths vary from severe to giftedness across board. The disorder is an early onset one, pervasive and lifelong. In the *Diagnostic and Statistical Manual for Mental Disorders-5*, Asperger's syndrome, Autistic disorder, and PDD-NOS have been merged into one umbrella diagnostic category known as ASD (APA, 2013). This is because the disability is conceptualized as a spectrum with significant heterogeneity and phenotype (Abrahams & Geschwind, 2008). The implication of the disorder is pervasive and spans across multiple domains of function. This leads to impairment in multiple aspects of adaptive functioning. A level of support is required in almost all individuals but some can live independently or with minimal support (McPartland et al., 2016).

When ASD was first observed (distinctly) it was viewed as a psychiatric condition with intellectual disability as a characteristic accompanied by social awkwardness. The disability has been on unprecedented rate of increase in the last few decades. In the last two decades, there has been an explosion of research in this area too. This has led to detailed characterization of the condition (Mody & Belliveau, 2013).

While its etiology is not precisely known, a complex interaction between genetics and environment is highly suspected. The current prevalence rate in the world is 1 in 160 (WHO, 2019). Not much is known about prevalence of ASD in Africa and other developing countries. However, data available from a few studies indicate same trend of prevalence, as in developed countries. Example, prevalence of

ASD in studies done in Tunisia and Egypt (respectively) was 11.5% and 33.6% among children with developmental disabilities (Bakare, 2014). This article discusses in depth, communication difficulties in learners with ASD and corresponding evidence based intervention strategies.

## II. COMMONLY REPORTED COMMUNICATION DIFFICULTIES IN LEARNERS WITH AUTISM SPECTRUM DISORDER

Communication is critical in human beings. It helps one to get and maintain attention, express ones feelings, and socialize. Through communication, humans also manipulate other people's behavior. Further, one is also able to protest another person's behavior (Jurgens, 2020). It is also linked to academic and social success (Douglas & Gerde, 2019). Deficits in Communication form one of the core symptoms of Autism Spectrum Disorders (Paul, 2008). Generally, language and communication entails verbal, written language as well as physical gestures and pre-linguistic vocal behavior. The latter is developed first in typical beings. There is however marked heterogeneity in language development in learners with ASD (Longard et al., 2017).

Differences in communication are the hallmark in the learners with ASD. The diversity and variation in communication and language development include absence or delay in spoken language. It further may entail stereotyped and repetitive language, difficulties in imitation and playing impairment in conversational abilities, stereotyped and repetitive language, and inappropriate use of pronouns. While some learners have limited comprehension in verbal and gestural forms of communication, some individuals will exhibit difficulty in generalization. Further, some may have specific language impairment (Lofland, 2021).

Absence of language development is one of the earliest indicators of ASD. Approximately, one in four affected children remains non-verbal (Longard et al., 2017). Identifying this early is important given that the presence of speech before five years of age is the critical most predictor for better outcomes in Autism Spectrum Disorder (Mody & Belliveau, 2013). Individuals with ASD can delay in beginning to talk, or fail to talk at all. Further, they may learn to produce words and sentences but exhibit difficulty using them to effectively accomplish social interactive goals (Paul, 2008). Others have difficulties in the use of language in social context, use of nonverbal and eye to eye gaze. It is important to note that while children meeting criteria for ASD may have accompanying language impairment; this is not required for making the diagnosis (Wittike et al., 2017).

Research implies a correlation between intellectual and cognitive abilities and ability to communicate and use language. As noted earlier, strengths and needs in ASD vary from severe to giftedness. While some children with ASD may not be able to communicate using speech or language, others have rich vocabularies and are able to talk about specific subjects in great detail. Many individuals have

problems with meaning and rhythm of words and sentences. Another unique feature is inability to understand body language and the meanings of different vocal tones.

Qualitative variation in communication abilities between ASD and typical children are evident even in the preverbal stage. Precisely, the former do not use symbolic gestures like showing or pointing out at objects of interest to compensate for lack of or delayed speech. They however use physical cues such as pushing or directing another's hand to an object of interest.

Impairment in joint-attention in learners with ASD result in a cascade of missed opportunities for learning as part of the normal development process of building vocabulary through object-word associations (Mody & Belliveau, 2013). Discussed below are the key features of communication deficits in learners with ASD.

### *Repetitive or rigid language*

As noted earlier, some children with ASD are able to speak. Their speech is however repetitive and incoherent. It is more of a monologue than conversation. Within the domain of repetitive behaviors include a dominant feature of repetitive speech which may take the form of a child repeating what he/she said previously (Happe & Vital, 2009). This is known as self-repeat. Individuals may also repeat what another person said previously (echolalia). Echolalia could be delayed or immediate (Van- Santen, 2013). This significantly interferes with communication. It makes listeners impatient while others could become anxious especially those with developmental disorders.

### *Narrow interests and exceptional abilities*

Another common feature that interferes with communication in individuals with ASD is restricted interests and savant abilities they commonly exhibit. There are striking special skills common in Autism spectrum conditions (ASD) than in other disabilities. One in ten individuals has a talent out of line with their other abilities (Happe & Vital, 2009). This can interfere with communication at times. Some children will talk about a topic of interest in length regardless of whether the listening partner is interested or not. It is more of a monologue. This does not positively contribute to communication. In real life, topics of discussions vary thematically and with context.

### *Uneven language development*

Research indicates that many children with ASD develop some speech and language skills though not to a typical level of ability. The progress unlike in typical children is usually uneven. Learners with ASD vary significantly in their expressive language skills. Their pragmatic/socially-based language is more impaired than their structural language (YE et al., 2018). Some develop a strong vocabulary in a particular area of interest at a very fast rate. Other children may be able

to read words before age five but do not comprehend what they read. This significantly interferes with communication.

#### *Poor nonverbal conversation skills*

Unlike typical children, many learners with ASD are unable to give eye contact, use or understand gestures. As mentioned earlier, their ability to use nonverbal skills to enhance their communication is generally limited. Among the basic central disorders in learners with ASD which negatively affects their social interaction are non-verbal communicative disorders. Learners are unable to express or understand other people through, non-verbal communication such as cues, hand signs, facial expression, body language, and eye communication (Alshurman & Alsreaa, 2015). Reading nonverbal communication and expressing oneself with it is quite critical. This deficit significantly affects education of learners with ASD as well as their existence in the community.

#### *Receptive Languages Difficulties*

In ASD, receptive language is often seen to lag behind expressive language. However, this may be related to lack of social reciprocity. For the most part, children with ASD have receptive and expressive language impairments. The profile of language impairment however changes with age and developmental level. Challenges in joint attention and receptive language and reduced vocal output for example are evident as early as in the first two years of life (Mody & Belliveau, 2013). Many learners with ASD have challenges understanding abstract language and figurative speech. They also have mind blindness due to limited interest and social interaction. Apart from limited comprehension, they cannot perceive that different words vary in meaning based on context. They also have challenges in getting main idea, making inferences and concluding. Further, they have poor oral language comprehension which also results into difficulties in reading comprehension.

#### *Expressive language difficulties*

Expressive language refers to the ability to express well organized desires and thoughts to other persons. Expressive language development is not well understood in very young children with ASD. This is because most are not diagnosed until the age of three (Longard, 2018). By age 3, nonverbal cognitive skills and expressive language skills negatively correlate with clinician-observed repetitive and restricted behaviors in learners with ASD (Ray-Subramanian et al., 2013). Further, some children with ASD may have apraxia or oral-motor impairment that impacts their ability to communicate (Mody & Belliveau, 2013). Some individuals also have challenges with prosody. This is the rhythm of speech including rise, fall, energy and intonation.

Prosody helps to relay emotion and pragmatic importance when talking. Learners in the spectrum may speak in a monotone way, or exaggerate their intonation. Some speak in a high pitched or sing song voice (Denworth, 2018). Others

use stock phrases to start a conversation. Children in the spectrum also exhibit echolalia early in language acquisition, though this diminishes with time. They may repeat a sentence or final word of the speaker immediately or after. For most part it is a vocal stereotypy (Mody & Belliveau, 2013). This significantly interferes with communication.

#### *Social communication difficulties*

Social communication entails a variety of different skills, including social engagement, initiation, and maintaining (Vicker, 2009). It is currently one of the criteria of diagnosing ASD according to DSMV (APA, 2013). Social communication difficulties include problems with social interaction, social cognition, and pragmatics (the social use of language) (ASHA, 2015). Individuals with ASD lack the ability to share feelings or understand and respond to others peoples feeling (Denworth, 2018). They may be unable to figure out the unwritten norms that should be observed while conversing with others (Vicker, 2009). Further, failure to make eye contact or respond to questions, and a tendency toward obsessive conversation makes communication difficulty.

Children with greater severity have more problems in social communication and interaction (Tsai, 2020). As early as two years of age, learners' exhibit decreased performance in several areas of social pragmatic skills. These include, joint attention, imitating actions, early play skills, and orienting to social and non-social cues (Clarke, 2019). Research further indicates that individuals with ASD are unable to understand other people's perception. They lack the theory of mind. Individuals with ASD also have difficulty multi-tasking (Vicker, 2009). These difficulties with social communication may give rise to anxiety and further social withdrawal (Kuzminskaite et al., 2020).

Given the critical role of communication in human beings, it is quite crucial that speech therapists, educationists and other stake holders acquire skills on how to identify and intervene in all communication difficulties. Below are the recommended research based remedies.

## II. RESEARCH BASED INTERVENTION STRATEGIES

As noted earlier, individuals with ASD have challenges in communication yet communication is so critical in human beings. Individuals with ASD use spoken language in non-communicative ways. This includes repetitive language, echolalia, or idiosyncratic language. Impairment in pragmatic language, as explained in the perspective of social communication difficulties is a challenge across the spectrum. Inability to communicate significantly affects socialization of individuals with ASD and their general quality of life. Intervention against the difficulties in communication is therefore paramount. Research indicates that children with ASD benefit from intensive, early intervention focusing on increasing frequency, form, and function of communicative acts. Intervention strategies drawing from a range of

philosophies and diverse degrees of adult direction that effectively increase language and communicative behaviors have been used successfully (Paul, 2008). Speech and Language Pathologists, families and educators should work together to ensure individuals with ASD have opportunities to communicate with multiple adults and peers to support social communication development. Research however indicates that educators and caregivers lack the skills and preparation required to support the communicative needs of individuals with ASD. They may require targeted training for better outcome (Douglas & Gerde, 2019).

Evidence-based practices (EBP) that help promote conversation skills include naturalistic language strategies, social narratives, and video modeling. It is critical for speech therapists to include, both the target individuals (in the intervention) and family to maximize the benefits of intervention. This is because person(s) of focus form a significant mediator of intervention effect. Further, group interventions appear to be more effective than one-on-one approach. Research indicates that inclusion of typically developing peers have the potential to increase effectiveness of group interventions. Intervention process for communication difficulties among ASD are categorized into two. These include the ones used by SLP and those taught to caregivers and family (Parsons et al., 2017).

*Speech and Language Pathologists Techniques*

According to George Town University Centre for Child and Human Development, the following are techniques Speech and language therapists employ as interventions.

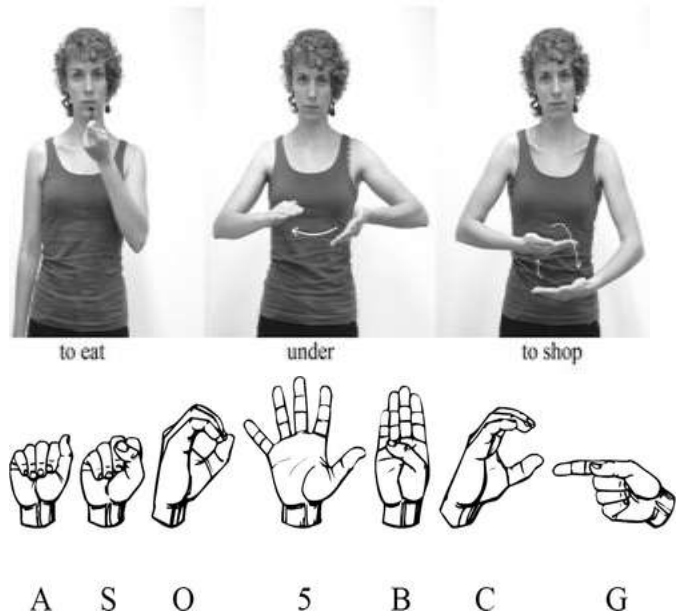
*Alternative and Augmentative Communication (AAC)*

Augmentative and alternative communication (AAC) refers to all forms of communication outside of oral speech. Augmentative and alternative communication (AAC) interventions are used often as stand-alone for the minimally verbal individuals with ASD. Growing evidence indicate potential benefits of AAC for children with ASD (Iacono et al., 2016). They are personalized devices supplementing an individual's ability to communicate. AAC systems could help develop spoken language if they're introduced early enough (Jurgens, 2017). The most studied and common AAC systems include manual signs (MS), picture exchange (PE), and speech generating devices (SGDs). AAC systems are divided into two broad categories, unaided and aided. Unaided AAC require no external equipment and involves the use of symbols such as manual signs and gestures. Aided AAC includes procedures, such as Picture Exchange and speech generating devices (Namet al., 2018).

*Un-aided AAC Communication Systems*

Interventions that require no devices or pieces of equipment are referred to as unaided systems. They include manual signing, gestures/pointing, pantomime, and making eye contact/eye gaze.

Manual signing is defined as key word signing (KWS), in which the key words in a spoken sentence are simultaneously supported by manual signs. They can be symbols or some parts of any sign language. It supports understanding and encourages language development in ASD children and adults with communication difficulties. Short clear sentences are spoken and the important key words are signed at the same time. It can serve as a temporary means of communication and aid in developing spoken language. It can also become the main communication form of a nonverbal or deficient verbal ASD (Meuriset al., 2014). See the figures below for manual signs;



Source: Meuris Et Al., 2014

*Gestures*

Gestures are movement of body part to express an idea. They facilitate communication in learners with ASD especially in nonverbal ones. A Study by Medeiros and Winsler (2014) found that parents use gesture just as often as their child, in both typically and untypically developing children.

Other study by Whalen, Schreibman and Ingersoll (2006) found that some children with ASD can learn to produce gestures. This results in collateral gains in social communication skills.

*Pantomime Intervention.*

This refers to the use of nonverbal cues to communicate (Fabbri-Destro et al., 2019). It entails the iconic gesturing done for communicative purposes in the absence of speech (Brown et al., 2019). It has much to do with effective use of motor skills. Many Children with ASD have challenges in motor skills. Motor skills deficit are neglected by standard diagnostic procedures yet it affects more than 70% of individuals with ASD. It lowers social abilities based on the



understanding of others' actions. Children performance in tasks based on observation is strongly associated to individual motor skills. ASD children exhibit a poorer performance in related skills than typically developing kids. Capacity to decode the actions done by others relies on the observer motor repertoire. In children with ASD, the parallelism between deficits in pantomime execution and recognition suggests that during action observation, the motor resonance is impoverished due to an impaired motor repertoire. This impedes proper social contact with others (Fabbri-Destro et al., 2019). Intervention on motor skill deficits is therefore paramount in the field of ASD. An occupation therapist should work collaboratively with a speech therapist. Neuro rehabilitation is recommended too. In addition to its physical and motor value, this would provide children with competences that are crucial during social interaction.

#### *Making Eye Contact/Eye Gaze Intervention*

Eye contact avoidance is almost synonymous with Autism Spectrum Disorder (ASD) and social impairment. Eye gaze is a form of nonverbal communication and is perceived to have a large influence on social behavior (Fonger & Malott, 2019). As noted earlier, children with ASD have challenges in making eye contact. Some of the strategies that work include calling the child's name, placing an object within child's line of sight, and then moving the object towards intervener's eyes. Eventually, the child will start to look towards your face when you call their name (Critchley & Brereton, 2021). Eye contact helps other parts of communication, especially nonverbal ones, like being able to notice another person's facial expressions and take emotion into account in your communication. It significantly improves attention (Jurgens, 2020).

#### *Aided Communication Systems*

Aided systems require use of external devices which are either low or high technology. While selecting the appropriate device, key considerations pertaining to person-centred planning such as conducting preference assessments and trial periods are critical. This minimizes system abandonment. It further emphasizes diverse key considerations pertaining person-centred planning. Conducting preference assessments and trial periods to minimize system abandonment is crucial (Da- Fonte et al., 2020).

#### *Low-tech Systems*

Low tech systems are less complicated. They include use of equipment like cards, boards or books with photos or pictures. They are cheap, easy to make and use. They present tasks actions or objects. ASD individuals learn to use them to understand what people are saying, ask for what they need, make comments and answer other people's questions. Picture Exchange Communication System (PECS) and visual timetables {both based on principles of Applied Behaviour Analysis (ABA) }are examples.

#### *Picture Exchange Communication System*

PECS is a unique alternative/augmentative communication system developed in the USA in 1985 by Andy Bondy and Lori Frost. It was first implemented with pre-school students diagnosed with autism at the Delaware Autism Program.

The PECS teaching protocol is based on B.F. Skinner's book, *Verbal Behavior* and broad spectrum applied behavior analysis. Specific prompting and reinforcement strategies that lead to independent communication are used throughout the protocol. The protocol also includes systematic error correction procedures to promote learning when an error occurs. Verbal prompts are not used, thus building immediate initiation and avoiding prompt dependency.

The individual indicates a need or want by exchanging picture cards of a desired item with a communication partner. The child first learns to communicate by handing someone a picture of the object he wants, and then sentence strips. It facilitates communication as well as motivating interaction (Sicile-Kira, 2014). It teaches the individual to discriminate the items, learn and use sentence structures to make requests and expand on sentence requests.

#### *Visual timetable/ Timelines*

This refers to a graphic representation of scheduled tasks and activities. Visual timetable or timeline visually explains the structure of a day. It entails using pictures, objects and even word phrases. It helps learners with ASD develop understanding of "first" and "next". It also potentially reduces anxiety. It is evidence based and effective in promoting on-task behavior and facilitating independent transitions (Macdonald et al., 2018). Below are respective example

Figure (a) PECS Source: [www.pinterest.com](http://www.pinterest.com).



Figure (b) Visual schedule: Morning routine Source: www.pinterest.com.



### High-tech systems

Hi technology devices are usually provided by companies. They are efficient but mostly expensive. They include iPads and Android devices. Access varies from direct selection meaning, touching the desired icon, head pointing, scanning, or Eye Gaze which is eye tracking to make selections. According to Fulks (2017), the vocabulary on the device is learned first and then they learn to combine icons to form phrases and sentences. This needs practice and time. Individuals with limited range of interests or who have repetitive behavior can get ‘stuck’ on electronic devices. It is important to consider ones behavior before introducing ASD devices. Individuals with ASD are often good at visual processing, thus combining this ability with SGD to improve their communication works well (Jurgens, 2017).

### Hanen method:

This approach is credited to Ayala Hanen (1975) a Speech and Language Pathologist in Montreal, Canada.

According to her, the natural environment is the best environment for children to learn.

She created the approach to address research that parental involvement is crucial to a child’s intervention program. The learners should be provided with opportunities to communicate with key people in their lives including siblings and parents. One of the six tenants of this method called "More than Words" is specifically for non-verbal and verbal ASD of five years. It provides tools that can be used to help a child to develop language and establish predictable routines to develop communication skills, in everyday life at home and in the community. Parents are trained in group sessions composed of three major elements: Pre-program assessment and baseline video-taping of the parent-child interactions, Group training for parents and individual feedback session.

It is an eleven week language intervention client centered program.

It includes eight sessions of teaching parent strategies, and three sessions where an SLP visits for filming the parent interacting with the child in a free play manner. SLP then watches the video with the parent so that he can give immediate feedback (Girolametto et al., 1996).

### Total communication.

Total communication incorporates a variety of modes of communication (including signing, verbalization, and written and visual aids) to best suit the needs of a particular child. It was originally used for deaf children but then generalized to all children with communication disorders, including children with ASD. If one is to use sign language to an ASD child, then a total communication approach is recommended. This way a child’s language structure and comprehension are modeled in two modalities.

Facilitated communication Training (FCT) and supported typing.

FCT (sort of AAC) is an intervention in which the service provider, a “facilitator,” holds the participant’s hands, wrists, or arms to help him or her spell messages on a keyboard or a board with printed letters (Celiberti & Daly, 2020). In facilitated communication training a communication partner (the facilitator) helps the communication aid user overcome neuro-motor problems such as impulsivity and poor eye/hand co-ordination and develop effective pointing skills.

The immediate aim of facilitated communication training is to allow the child with ASD to make choices. Being able to make choices enhances communication. Once individuals are able to make choices, they are encouraged to practice using a communication aid in a functional manner. This could be a picture board, for example, a speech synthesizer or a keyboard. This increases their physical skills and their self-confidence. It further reduces their dependence on the facilitator. In this strategy, a facilitator physically supports the child's hand or arm and guides them to use a key board or other augmentative communication device. This support helps the individual with ASD develop pointing skills and communicate. As the skills and confidence increase, degree of facilitation is reduced. The ultimate goal is for individuals to be able to use the communication aid independently. Some agencies call facilitated keyboard use ‘Supported Typing’. There are not enough researches on FCT, but the available ones have shown that the communication output is more strongly driven by the facilitator than the child. See figure below;



Source: Celiberti and Daly, (2020)

#### *Basic Considerations to be Made While Teaching Intervention Strategies to Parents and Caregivers*

Speech therapists are responsible of training parents on basic intervention strategies. The trainings are aimed at helping parents facilitate social and communication development within home and other natural settings. Trainings should be gradual and with a low intensity. It may be over extended periods of time with the idea that parents will use intervention techniques in multiple situations. The Hanen method

mentioned earlier may be incorporated into these strategies. Given language and communication difficulties in learners with ASD, the language should be kept simple. It should be concrete and motivating. On the same note, it is important to appreciate that learners with ASD take time to process information. It is critical to wait after giving instruction before a response takes place.

It takes up to 45 seconds to process the heard information by (an) ASD child. Repeating the question to force a response, can frustrate and overwhelm them with verbal information. It is further important while communicating with learners with ASD to establish eye contact. Redirection is critical considering ASD have eye contact challenges. It is further critical that tone and volume of speech are moderate. Angry loud tones could irritate and raise emotions of learners with ASD. This could lead to aggressive behavior.

On the same note, therapists and families should motivate learners using children’s interests. Questions and tasks should also be based on interests of the child. Obsessive interests should however be discouraged. While giving feedback or instructions, positive language should be used.

Negative statements are demotivating and should be avoided. A good approach is telling learners what they are expected to do and not what they should not do. Simple sentences need be used. Long sentences and instructions should be broken down into small steps. This increases a child’s ability to learn complex skills (Lofland, 2014). This is owing to difficulties in comprehension common in learners with ASD.

### III. OTHER RECOMMENDED INTERVENTIONS

Apart from the above discussed strategies, we have other intervention strategies as discussed below.

**Discrete Trial Teaching (DTT):** This is a one-to-one instructional approach that utilizes applied behavior analyses. It has proven effective in teaching language to children with ASD. It is highly structured, fast-paced format of instruction. It is conducted in a one-to-one situation at a desk or table with minimal distractions (Geiger et al., 2012). DTT is used to teach skills in a systematic controlled and planned, manner. It is used when a learner needs to learn a skill best taught in small repeated steps.

**Imitation and Modeling:** In individuals with ASD, inability to imitate is a salient diagnostic feature. Imitation is a prerequisite skill that can assist in the development of various skills (Cardon & Wilcox, 2011) including communication.

**Joint Action Routine (JAR):** JAR is a strategy used to encourage communication skills. It entails following a predictable and logical sequence of events. The activity relies on routine verbal exchanges by those involved. Formulated (rule-governed) play routines serves to facilitate language acquisition. Such routines provide a limited and highly familiar set of semantic meanings and utterances. These play



routines, while variable, are highly sequential, with predictable positions for the insertion of appropriate responses. Further, such routines provide roles that are at the same time clearly delineated and reversible (Lee et al., 1984).

*Social Narratives:* While typical individuals generally understand social norms, it is not innately automatic for learners with ASD. They may need explicit instruction to understand the norms owing to challenges in social skills. Social narratives are interventions that describe social situations in a detailed manner highlighting relevant cues, and offering examples of appropriate responding. They are simple stories that visually represent social situations and appropriate social behaviors. They connect the important details of a setting or social situation to support the person with ASD in understanding the social context and in developing a new social skill (Louise, 2017).

*Peer Mediated Instruction and Intervention (PMII):* Several terms have been used to describe the technique, inclusive of Peer Modeling, Peer Initiation Training, Direct Training for Target Student and Peer, Peer Networks, and Peer Supports (Sam & Team, 2015). Peer-mediated instruction and interventions (PMII) entails the involvement of typical peers as socially competent facilitators to promote appropriate communicative and social behaviors in learners with ASD. It teaches peers to interact and support students with ASD in acquiring new social skills in natural environments.

*Pivotal Response Training (PRT):* Pivotal response training is an intervention that integrates principles of child development with those of applied behavior analysis (ABA) (Suhrheinrich et al., 2018). It is effective for developing communication, language, play, and social skills. It enhances responding to multiple cues, motivation, self-management, and self-initiations.

**Video Modeling (VM):** VM uses video recording and display equipment to provide a visual model of the targeted behavior or skill. Types of video modeling include basic video modeling, video self-modeling, point-of-view video modeling, and video prompting. Basic video modeling involves recording someone besides the learner engaging in the target behavior or skill (i.e., models). The video is then viewed by the learner at a later time. Video self-modeling is used to record the learner displaying the target skill or behavior and is reviewed later. Point-of-view video modeling is when the target behavior or skill is recorded from the perspective of the learner (Franzone, & Collet-Klingenberg, 2008).

#### IV. CONCLUSION AND RECOMMENDATIONS

Having reviewed all the above communication difficulties and intervention strategies, it is important that caregivers, therapists and other related service providers work as a team while selecting appropriate communication intervention strategies. As noted earlier, no two children with ASD are exactly alike. Further, communication difficulties vary across

the Autism Spectrum. No one strategy is a ‘one size fit all’. An effective strategy or device is that which is child specific. If not it will be at risk of system abandonment as noted earlier. Parents understand their children better than any other stakeholder. They should be at the center stage of collaboration in all matters to do with education of children with ASD inclusive of communication intervention strategies. Speech therapists should advise the team on matters of speech but relevant data must be collected from all stakeholders who have worked or will be working with him before an intervention choice is made. The strategy must be easy to use for both the individual and those interacting with him. Last but very significantly some devices are quite expensive. Cost is therefore a major factor to be considered.

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