



RESEARCH ARTICLE

AN EFFECTIVE FACILITATION OF SEMANTIC TO SYNTAX DEVELOPMENT IN CHILDREN WITH AUTISM SPECTRUM DISORDER BY USING AAC-CASE STUDIES

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ABSTRACT

A wide range of augmentative and alternative communication (AAC) devices are used to meet the diverse needs of individuals with autism spectrum disorders (ASD) who have difficulty using natural speech to meet their daily communication needs.

Need of the study: Most of the systems mainly focus on semantics and Research has shown evidence significant difficulties specifically in the area of syntactical structures.

Aim of the study: To show the effective facilitation from semantics to syntactical structures development of children with ASD by using simple low technology Aided AAC.

Methodology: A Three children from a special school who have features of typical ASD were taken and we worked on Aided AAC technique of real object matching, sight word reading and matching with their real objects and finally sight word paired with real objects and using these combinations in sentence making.

Conclusion: We found that there is much more development in the syntactical structure and we would like to show the videos of these children.

INTRODUCTION

Autism means a developmental disability significantly affecting a child's social interaction and verbal and non-verbal communication, generally evident before age 3, that adversely affects learning and educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (Liaupsin, Scott, and Nelson, C. (2000). children with autism exhibit a wide range of language and communication abilities, ranging from pre-speech or nonverbal to highly verbal with excellent vocabularies. Though some children with autism exhibit appropriate language form skills (vocabulary, speech sound skills, grammatical skills, sentence length and structure) all children with autism exhibit communication difficulties or differences in language use. There are many speech and language intervention programmes available for children with ASD. Among them AAC is mainly used intervention programme in children with autism spectrum disorder. Augmentative and Alternative Communication (AAC) refers to a group of methods, strategies and/or techniques that support the use of functional and effective communication (Beukelman & Mirenda, 2005).

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It is an area of specialized clinical and educational practice that provides communication options and interventions for people with complex communication needs (Perry, Reilly, Bloomberg & Johnson, 2002). AAC can help people express themselves, have social interactions, participate in their community and provide opportunities to develop language (Beukelman & Mirenda, 2005). However, the main objective behind AAC is to support and enhance participation in all environments and to develop communicative competence to help an individual attain a high quality of life (Beukelman & Mirenda, 2005; Light 1997). AAC can support communication for a wide range of individuals with varying diagnosis and complex communication needs. A review of the literature revealed an increase in speech production and communicative success with the use of AAC for children with autism spectrum disorder and pervasive developmental disorders (not otherwise specified) (Schlosser & Wendt, 2008). This may increase social interaction, school/work performance, and feelings of self-worth. AAC users should not stop using speech if they are able to do so. The AAC aids and devices are used to enhance their communication, not to replace or inhibit their existing skills.

NEED OF THE STUDY

Research has shown that many users of Augmentative and Alternative Communication (AAC) systems evidence significant difficulties specifically in the area of syntactical structures (1992; Iacono, 1992; Sutton, Soto, & Blockberger, 2002).

“Incomplete syntax, improper word order, omission of functional words (e.g., articles and prepositions), and omission of morphological markers (e.g., plural markers, verb tenses) can cloud a speaker’s message and contribute to communication breakdowns” (Lund & Light, 2003, p. 1110). The development of language skills is critical to the AAC user as it serves as the foundation for all communication: manual, gestural, written, and spoken (natural or augmented speech). Studies evaluated utterances formulated in AAC devices are markedly different than utterances produced through natural speech, utterance length is typically limited to simple two or three word sequences (Bruno., 1989; udwin& Yule, 1990) Sutton et al. (2004) suggests that one factor contributing to limited grammatically may be the design of the AAC display itself. The lack of morphological markers and functional words, as well as the arrangement of vocabulary items may be negatively influences completeness of utterances produced. This study has explored the effectiveness of a technique to advance syntactic development of children who have complex communication needs and use AAC to communicate.

Aim of the study

The present case studies aimed to the effective facilitation from semantics to syntax development of children with ASD who have used the simple low technology Aided AAC.

METHODOLOGY

Participants

Three male children from school for autism at Chennai were selected on purposive sampling, who had typical ASD features, whose age range is 4-6years and we assessed the detailed speech and language evaluation and also evaluated by COMDEALL (Pratiba Karanth 2004) whose language age is less than 4 years. We confirmed the diagnosis of autism by using DSM IV criteria and sent them for psychological evaluation. The baseline of the child is given tabular column (Table 2). The participants received thirty sessions and three sessions per week and 30 minutes duration of each session.

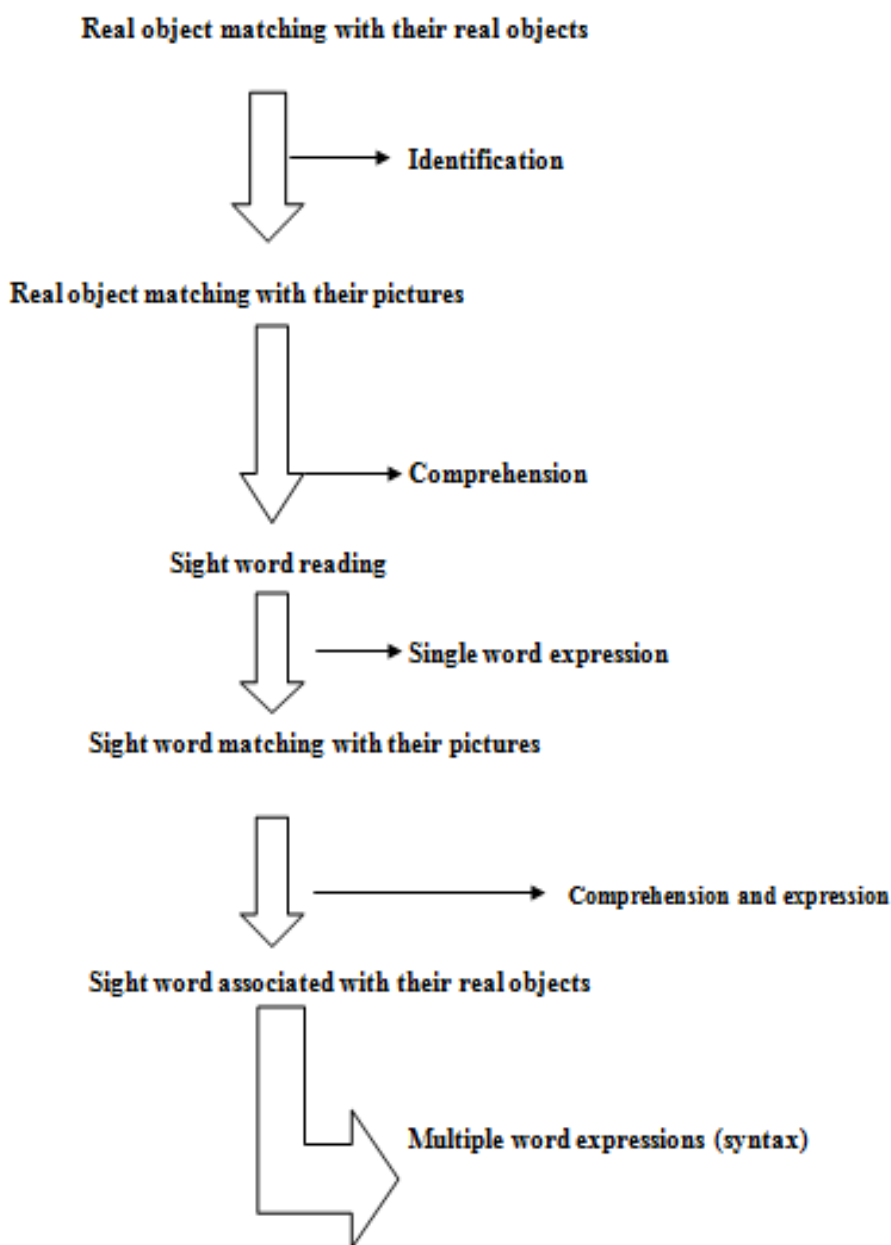


Fig. 1. Different levels we used

Table 1. Demographic data of the children

S.no	Name	Age	Receptive age	Expressive age	Social age
1	x	6year	3.6years	2.4year	2.2years
2	y	4.5 year	3.8year	3.2year	3years
3	z	4 year	2.8year	2.4year	1.4year

Table 2. Base line of the children

Name	baseline
X	Identification of pictures
Y	Object matching
Z	Identification of pictures

Table 3. The achievement of 80% consistency in different level

Name	Real object matching with their real objects	Real object matching with their pictures	Sight word reading	Sight word matching with their pictures	Sight word associated with their real objects
Xx	5 session	6 session	10 session	7 session	2 session (10% consistency)
Y y	4 session	5 session	9 session	7 session	5 session (60 % consistency)
zz	5 session	7 session	9 session	7 session	2 session (20 % consistency)

The intensive speech and language intervention was given with aided low tech AAC. We gave stimulation used on real object, pictures, sight word on their matching, identification and using these combinations for sentence making. Once the child achieved 80% of consistency we moved on to the next target.

MATERIALS

We used Real objects, pictures, photographs, and their sight words of Activities of their Daily Living.

AAC technique representation

Once the child achieved 80% consistency we moved on to next target level. The probe measures were analyzed by session consistency. Each session was recorded using a video recorder and with the help of recordings we assessed the probe measures and analyzed through descriptive analysis.

RESULTS

Three participants received 30 therapeutic intervention sessions. Results of those sessions are tabulated in tabular column(table.3).The investigation focused on participants' production of targets syntactic structures (TSS) .This low tech. aided AAC device had positive effect on acquisition of target structure; Subject +verb+ Object.

These three children are at the level of production of TSS and we worked on stabilization level. Result indicates that we could see significant improvement in the children at the level of identification, comprehension, and expression of the given real objects, pictures, sight words. Analysis indicate that there was significant improvement in semantic to syntactic development and thus attributes to the selection of approaches related to the child's level of receptive language and communication ability, as well as their level of cognition.

DISCUSSION

This current case study showed a notable change in augmented productions of the three participants, ranging from an 80-100 percent increase in syntactic structural usage. We used aided low tech AAC not only as a mean for communication but also to expand speech and language development of semantic, syntax and morphological skills and there by facilitating the language developmental growth of the child. We would like to add videos in our studies. Research has shown that many users of Augmentative and Alternative Communication (AAC) systems evidence significant difficulties specifically in the area of syntactical structures (1992; Iacono, 1992; Sutton, Soto, & Blockberger, 2002), but our study implies ,systematic use of low technology aided AAC we can improve semantic and syntactical structure.

Conclusion

The current case study provides a promising work and if we use the Systematic representation of AAC one can develop the semantic and syntactical structures. Since many children in the autism spectrum disorders are major visual learners, we as therapists have a great opportunity to use their visual learning potentials, by showing them various pictures, photographs, real objects and even sight words by using these combinations you can make them communicate and expand their expressive skills.

IMPLICATIONS

This study implies that we can start intervening children with ASD as early as possible; even with low tech AAC's consistently to expand the speech and language development and thereby we can also expand their language growth in terms of semantics, syntax and morphological structures.The AAC aids and devices are used to enhance their communication, not to replace or inhibit their existing skills but to improve the existing skills.

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