

# Investigating Impact of Various Training Programs in Different Communication Skill of Children with ASD

Firas Ahmad Saleem Al Taqatqa\*

Associate Professor in Special Education, Education Faculty, Special Education Department. University of Jeddah, Saudi Arabia

## Abstract

The goal of this research is to explore the success rate of various approaches in the development of communication skills in children with autism spectrum disorder (ASD). The present study adopts quantitative approach. A descriptive quantitative questionnaire using likers scale in order to measure the level of the success rate of program carried out to measure the communication Training program was developed. Children who have not been able to react and have trouble socializing before to therapy are deemed to improve in socializing their social skills after receiving treatment. This is a substantial shift from the state of the autistic children's social abilities before and after treatment.

**Keywords:** Training Program • Autism • Communication Skill • Motor Skill

## Introduction

Autism is a severe and extremely complicated developmental illness that manifests itself in children before they reach the age of three and is characterized by damage to the nervous system in the brain [1-3]. These developmental diseases are most often shown in children's incapacity to communicate (both verbally and nonverbally) [4], to interact socially [5], to experience sensory disturbances, to engage in play, or to display behavioural disorders [6].

Matson & Neal (2010) suggest that communication disorders are distinguished by a delay in the development of the child's speech as well as a lack of an effort on the part of the kid to communicate via the use of body language or facial expressions. Most of the time, autistic child rambles in a language that is difficult to understand [7-9]. Even if they begin to talk, all they will do is copy, for instance, an imitation of a television ad, without having any comprehension of what it is being said. They are unable to communicate, does not grasp what other people are saying, and usually repeats what other people have already said.

The most obvious sign that a problem with their behaviour is the highly careless attitude that they display about the people and things around them [10]. They are primarily concerned with themselves, and they do not want to be dominated in any manner, shape, or form. Frequently seen wandering about aimlessly, jumping up and down, walking on tiptoes, waving fists, and shouting at people. When children with ASD are angry, some have the tendency of hurting themselves by, for example, biting their own hands, scratching their faces, or beating or pounding their heads [10].

Children with autism are not fundamentally different from ordinary children; nonetheless, they do need more supervision and support from both their parents and the environment in which they are grown in order to mature

**\*Address for Correspondence:** Firas Ahmad Saleem Al Taqatqa, Associate Professor in Special Education, Education Faculty, Special Education Department. University of Jeddah, Saudi Arabia; E-mail: fasaaleem@uj.edu.sa

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and develop to the point where they are capable of living independently [11-13]. Counsellors need to exercise patience and use a different approach while working with autistic clients [14]. In addition, there should be a solid working relationship between the families of autistic children and the therapists, given that, as suggested by Mansur et al. (2022), the parents have a greater understanding of the temperaments of their own children.

Treatment for autistic children often consists of a variety of unique and specialized approaches, each of which is tailored specifically to meet the needs of the particular children being cared for [15-19]. Because of the diversity of children's requirements, therapy must likewise be diverse and individualized according to the kind of condition that is being treated. This research aims to determine the most effective means of providing treatment for autistic children who have restricted opportunities for social interaction. Children with autism are affected by a condition in which they are unable to speak in an appropriate manner [20]. As a result of this condition, children with autism have highly restricted behaviours and interests [21], and they are less able to play like regular children. This is due to the fact that children with autism are unable to communicate in the typical manner.

There are number of considerable implications of previous investigations that leads the present study direction. To begin with, the investigation of what possible treatment might be useful for ASD has been initiated by various focus such as customized structured reading intervention [22], telehealth that connects expert and parents [23], immersive virtual reality [24], physical exercise [25], and visual exchange with parents assist [26]. These modalities of therapy are implemented inside specialized educational programs that cater to the requirements of children diagnosed with ASD.

By comparing the results of the many programs that were executed, these strategies sure have provided insight into the proportion of successful attempts. These will be noteworthy discoveries, which open up a variety of potential avenues for the treatment of children diagnosed with ASD. In the meanwhile, it is unclear which modes of communication these approaches excel in, whether it is verbal communication, non-verbal communication, written communication, listening, or potentially even visual communication. Furthermore, in order to design a training program that is more effective and efficient, it is important to have some idea of how certain skillsets are stimulated [27].

## Methods

This research takes a qualitative approach, and the majority of the data that was obtained comes from statistical calculations. The purpose of this

research is to investigate the effectiveness of social communication training programs for children who have ASD. Purposive sampling was employed for the whole of this inquiry. Participating in this research were children who were diagnosed with one of the illnesses that fall within the autism spectrum. The measurement is carried out by comparing the results that were acquired before the programs were put into place with those that were obtained after they were put into the program.

## Type of Program to Measure

### Applied Behaviour Analysis (ABA)

The goal of applied behavioural analysis (ABA) treatment is to assist patients in managing and altering certain behaviours. This will make it simpler for patients to handle social problems and prevent learning interruptions. The procedures of ABA may be employed either at home or in a clinical environment. This not only offers flexibility but also provides abundant opportunity for children to practice and perfect their abilities for usage in a setting more similar to the real world.

### Relationship Development Intervention (RDI)

The term "relationship development intervention" (RDI) refers to a kind of behavioural treatment that places a special emphasis on the ways in which a person communicates and interacts with other individuals. The next step for a therapist who employs an RDI-based approach is, after assessing the requirements of the child, to collaborate with the child to develop particular goals. After this, the family works toward assisting the child in accomplishing those goals while simultaneously seeking advice from the therapist and maintaining touch with them.

### Sensory Integration Therapy (SIT)

A child with autism spectrum disorder often displays hypersensitivity, which is a common symptom of the disorder. Children with ASD may be highly sensitive to light, textures, sounds, or other sources of sensory stimulation. Sensory integration therapy takes a different approach to behaviour, focusing specifically on issues caused by hypersensitivity. In this kind of treatment, the therapist gradually exposes the children with ASD to stimuli that are progressively more intense, while being cautious not to use force or go too far beyond the child's boundaries.

### Assessing Communication Skill

The study makes use of two unique observational categories for the purpose of measuring because of the goal of the program. Verbal and nonverbal modes of communication are both considered part of this topic. During the course of the study, a more in-depth examination of these concepts is going to be carried out.

### Verbal Communication Measurement

This places an emphasis on the fundamental ability of verbal communication. Students get instruction on how to reply to or remark on the work of their classmates via the use of verbal communication skills. Speech, clarity, and fluency are the abilities that are worked on and developed in this part. During a meeting, each student will have between two and three turns to practice the aforementioned fundamental abilities.

### Non-verbal communication Measurement

Children diagnosed with ASD are asked to write their thoughts down and get back them for the next meeting. This cycle places an emphasis on non-verbal methods of providing positive emotions, such as hand gestures, facial expressions, and the movement.

### Data Analysis

The Wilcoxon test was used in the data analysis process in order to explore the importance of each program by contrasting the results of the pre and post-tests. Because the dataset number did not fulfil the requirements for a parametric test, a decision was made to use a non-parametric test instead. For this reason, conducting a normality test is therefore not necessary. Furthermore, the various outcomes of the programs were then contrasted with one another to determine whether one has a more significant impact. The comparison is displayed in graph comparing the pre-test and post-test intervals of examined variables of the results of different training approach.

## Results

### Pre-Post Training with ABA

#### Verbal Communication

Applied Behaviour Analysis (ABA) has been shown to be more effective in enhancing the ability of children with Autism Spectrum Disorder (ASD) to control the intonation of their speech and the clarity of the information they are attempting to convey. Although the data shown above indicate that there has been some increase in fluency, this improvement does not fulfil the statistical requirements for significance. There has been considerable uncertainty as to whether ABA may assist children with ASD improve their speaking fluency. This finding may be a direct effect of the ABA program's focus, considering that ABA places a significant emphasis on manner.

Furthermore, the evidence that has been given above suggest that the use of ABA to non-verbal communication will likely produce outcomes that are satisfactory. In each of the three categories that were investigated, the mean differences indicate a large interval, although they are not too significant. In a similar vein, the data demonstrates its consistency, albeit

Table 1. Wilcoxon Descriptive Statistics Test Result of ABA.

		N	Mean	Std. Deviation
Verbal Communication	Pre_Voice_Volume	10	3.7	1.33749
	Post_Voice_Volume	10	5.9	0.73786
	Pre_Clarity	10	2.5	0.70711
	Post_Clarity	10	4.4	0.5164
	Pre_Fluency	10	4.3	0.67495
	Post_Fluency	10	5.6	0.69921
Non-verbal Communication	Pre_Movement	10	3.5	0.84984
	Pre_Expression	10	3.3	0.48305
	Pre_Gesture	10	3.2	0.63246
	Post_Movement	10	4.7	0.67495
	Post_Expression	10	4.8	0.63246
	Post_Gesture	10	5.1	0.73786

not its dependability in a broader sense owing to the small samples, by displaying a consistently low level of distorted data, as shown by its standard deviation (Table 1).

## Pre-Post Test with Relationship Development Intervention (RDI)

### Verbal Communication

Based on the data that has been given in (Table 2), it can be observed that RDI seems to have a greater rise interval than ABA. Given that the std dev suggests a relatively low number, this outcome is pretty congruent with what was expected. This indicates that the data has not been tampered with, and there are no discernible discrepancies identified between the students' pre-test and post-test distributions of test scores. Likewise, from the pre-test to the post-test, the statistics show the same continuous improvement in terms of the individual's non-verbal communication competence.

### Pre-Post Training with SIT

There has been a consistent increase in the number of children diagnosed with ASD who are now capable of basic communication after receiving treatment from the SIT program. The statistical statistics make it abundantly clear that it has continuously improved, although slight as the two other methods that were looked into (Table 3)

### Comparison of the Three Programs

When it comes to verbal communication, ABA is more successful in

two areas (voice volume and clarity), but RDI and SIT are more effective in building fluency in speech. Voice volume and clarity are both aspects of how well one may communicate. The use of ABA is more successful in achieving the desired volume and clarity of the speech. When compared to the effects that are obtained by ABA and SIT, it has been shown that the effects that are produced by RDI in the domain of non-verbal communication are much more considerable. It is intriguing to note that SIT rates right up there with RDI in terms of movement, and this is one of the areas in which SIT excels. According to the graph, RDI is more advantageous for non-verbal communication, but ABA is more effective for verbal communication (Figure 1).

## Discussion

It is unmistakable that the current investigation came to an intriguing result. The fact that the Relationship Development Intervention (RDI) leads to a lesser rise than ABA may be something that causes disagreement about the findings of this research. Because of the emphasis that is placed on declarative language in RDI, it is anticipated to be more efficient. Meanwhile, The Applied Behaviour Analysis (ABA) therapy that is supposed to enhance children's behaviour instead ends up improving their verbal communication skills and has a gratifying effect on the development of their speech intonation and clarity. The evaluation of clarity takes into account the use of innovative terminology, collocation, and the delivery of intended information.

The precise therapy that ABA provides might very well be the reason for its higher impact. While RDI places an emphasis on the mode through which information is sent. For the record, suggest that social engagement of

Table 2. Wilcoxon Descriptive Statistics Test Result of RDI.

		Mean	Std. Deviation
Verbal Communication	Pre_Voice_Volume	3.6	0.69921
	Pre_Clarity	3.1	0.56765
	Pre_Fluency	3.5	0.52705
	Post_Voice_Volume	5.5	0.70711
	Post_Clarity	4.8	0.63246
	Post_Fluency	5.3	0.67495
Non-verbal Communication	Pre_Movement	3.1	0.56765
	Pre_Expression	3.5	0.52705
	Pre_Gesture	2.6	0.69921
	Post_Movement	5.7	0.67495
	Post_Expression	5.6	0.5164
	Post_Gesture	5.7	0.48305

Table 3. Wilcoxon Descriptive Statistics Test Result of STI.

		Mean	Std. Deviation
Verbal Communication	Pre_Voice_Volume	3.5	0.84984
	Pre_Clarity	3.1	0.56765
	Pre_Fluency	2.6	0.69921
	Post_Voice_Volume	5.5	0.52705
	Post_Clarity	4.6	0.5164
	Post_Fluency	4.4	0.5164
	Non-verbal Communication	Pre_Movement	3.4
Pre_Expression		3.3	0.48305
Pre_Gesture		3.3	0.48305
Post_Movement		5.6	0.5164
Post_Expression		5.4	0.5164
Post_Gesture		5.8	0.42164

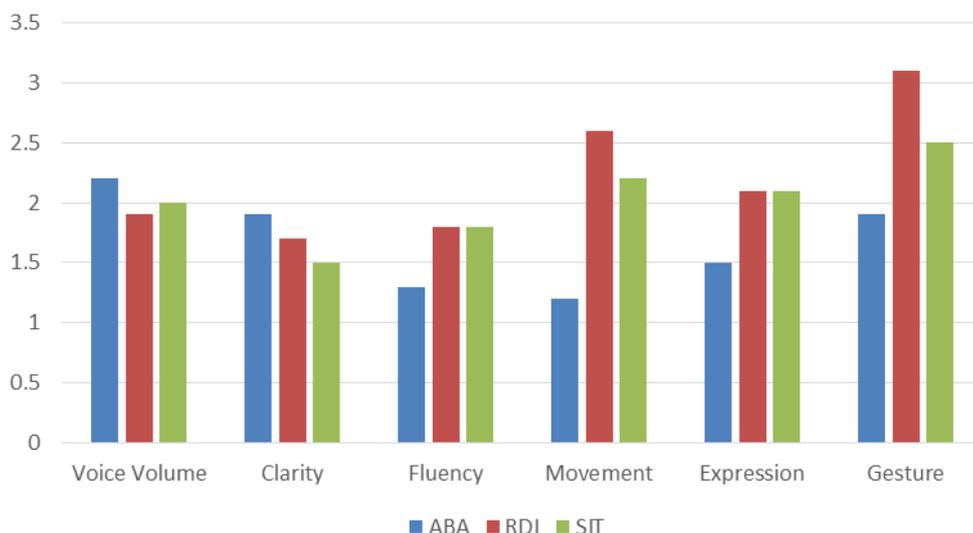


Figure 1. Mean score interval comparison of the three programs.

children with ASD is significantly useful to assist utilise information perceived in conversation [28]. This is not an evidence that implies or supports that RDI could result in greater outcome; rather, it is an underlying premise for ABA's pleasing outcome in the current investigation. This is due to the fact that ABA groups students together depending on the skills they need to work on. This categorization helps enhance numerous aspects, including manner in communication, which has to be improved [29]. As has been seen above, both RDI and SIT led to significantly improved fluency, which is a logical conclusion given the treatment's individual emphasis.

The findings of this research do not show that SIT in verbal communication is not beneficial; nonetheless, it was found to be less successful than ABA and RDI. According to the research done by [30], SIT may be considered a countable medium for helping children with ASD to improve their communication skills. Although SIT had less of an impact on the results of this research, the possibility for considerably better results exists if the practice is subjected to a greater degree of review and implementation [31].

In addition, it seems that ABA is less effective in improving non-verbal communication in all of its dimensions. In a prior study done by [32], a comparison of ABA's results to those of pivotal response therapy (PRT) in non-verbal communication revealed that ABA produced worse results. Even while RDI and SIT are more effective than ABA in terms of expressive language [33], ABA is still not as effective as the other two methods.

And as was to be predicted, RDI produces outputs that are far superior in manner, particularly in movement and gesture. Despite the fact that SIT appears to approach the problem from the appropriate angle by addressing certain sensory difficulties, it nonetheless has a lower success rate than RDI. The fact that this research did not examine the effects of the therapy over a longer period of time and instead only compared the outcomes after one month of treatment is the most plausible explanation for these findings. As a consequence, it is not entirely obvious whether or not the current research has hinted to a more reliable outcome because of the length of time that the result was assessed. It is probable that SIT has resolved some significant problems in the sensory domain, which, in the long run, may make it feasible to boost and expedite the skill development of children who have ASD.

The current research suggests that in order to train verbal communication skills in individuals with autism spectrum disorder (ASD), a special treatment plan is required; however, it is unclear if concentrating on sensory problems should be done more or less. This calls for more research that takes a significant amount of time in order to answer the quests. Therefore, there is a need for research that is specifically devoted to SIT and focuses on the implications specifically in their casual mechanism.

## Conclusion

According to the findings of this research, ABA is the most effective method for helping children with ASD improve their overall non-verbal communication. On the other hand, RDI and SIT both very much have the same effect in terms of the impact they have on improving speaking fluency. RDI has made more strides in improving its style of non-verbal communication. When it comes to expressiveness, children who have ASD exhibit results that are same whether they are treated with RDI or SIT.

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## References

- Bhat, S., et al. "Autism: cause factors, early diagnosis and therapies." *Rev Neurosci*. 25.6 (2014): 841-850.
- Simonoff, E. "Autism spectrum disorder: prevalence and cause may be bound together." *Br J Psychiatry* 201.2 (2012): 88-89.
- Palmieri, L., & Persico, A.M. "Mitochondrial dysfunction in autism spectrum disorders: cause or effect?." *Biochim Biophys Acta (BBA)-Bioenerg*. 1797.6-7 (2010): 1130-1137.
- Brukner-Wertman, Y., et al. "Social (pragmatic) communication disorder and its relation to the autism spectrum: Dilemmas arising from the DSM-5 classification." *J Autism Dev Disord*. 46.8 (2016): 2821-2829.
- Karal, M.A., & Wolfe, P.S. "Social story effectiveness on social interaction for students with autism: A review of the literature." *Educ Train Autism Dev Disabil*. 53.1 (2018): 44-58.
- Kaat, A.J., & Lecavalier, L. "Disruptive behavior disorders in children and adolescents with autism spectrum disorders: A review of the prevalence, presentation, and treatment." *Res Autism Spectr Disord*. 7.12 (2013): 1579-1594.
- Sterponi, L., et al. "Rethinking language in autism." *Autism* 19.5 (2015): 517-526.
- Hobson, R.P. "Autism, literal language and concrete thinking: Some developmental considerations." *Metaphor Symb*. 27.1 (2012): 4-21.
- Matson, J.L., & Neal, D. "Differentiating communication disorders and autism in children." *Res Autism Spectr Disord*. 4.4 (2010): 626-632.
- Dickter, C.L., et al. "Implicit and explicit attitudes toward autistic adults." *Autism Adulthood* 2.2 (2020): 144-151.
- Fernandez, B.A., & Stephen, W.S. "Syndromic autism spectrum disorders: moving from a clinically defined to a molecularly defined approach." *Dialogues in clinical neuroscience* (2022).
- Haputhanthri, D., et al. "An EEG based channel optimized classification approach for autism spectrum disorder." *2019 Moratuwa Eng Res Conf. (MERCOn)*. IEEE, 2019.
- Boucher, J., & Les S. "Research and the teaching of autistic children." *Autistic Child*. Routledge, 2018. 140-161.
- Mansur, M., et al. "Self Acceptance in Parents of Children with Autism." *KnE Soc Sci*. (2022): 453-461.
- Arranz, M.J., et al. "Pharmacogenetic Interventions Improve the Clinical Outcome of Treatment-Resistant Autistic Spectrum Disorder Sufferers." *Pharmaceutics* 14.5 (2022): 999.
- Wang, M., et al. "Practice of Music Therapy for Autistic Children Based on Music Data Mining." *Math Probl Eng*. 2022 (2022).
- Charman, T., et al. "A novel group parenting intervention for emotional and behavioral difficulties in young autistic children: Autism spectrum treatment and resilience (ASTAR): A randomized controlled trial." *J Am Acad Child Adolesc Psychiatry* 60.11 (2021): 1404-1418.
- Wedyan, M., et al. "The use of augmented reality in the diagnosis and treatment of autistic children: A review and a new system." *Multimed Tools Appl*. 79.25 (2020): 18245-18291.
- Palmer, M., et al. "A novel group parenting intervention to reduce emotional and behavioural difficulties in young autistic children: protocol for the Autism Spectrum Treatment and Resilience pilot randomised controlled trial." *BMJ open* 9.6 (2019): e029959.
- Szatmari, P. "The causes of autism spectrum disorders: Multiple factors have been identified, but a unifying cascade of events is still elusive." *Bmj* 326.7382 (2003): 173-174.
- Ronald, A., & Hoekstra, R.A. "Autism spectrum disorders and autistic traits: a decade of new twin studies." *Am J Med Genet B: Neuropsychiatr*

- Genet.* 156.3 (2011): 255-274.
22. Akemoglu, Y., & Kimberly, R.T. "A parent-implemented shared-reading intervention to promote communication skills of preschoolers with autism spectrum disorder." *J Autism Dev Disord.* 51.8 (2021): 2974-2987.
  23. Lindgren, S., et al. "A randomized controlled trial of functional communication training via telehealth for young children with autism spectrum disorder." *J autism dev disord.* 50.12 (2020): 4449-4462.
  24. Herrero, J.F., & Gonzalo, L. "An immersive virtual reality educational intervention on people with autism spectrum disorders (ASD) for the development of communication skills and problem solving." *Educ Inf Technol.* 25.3 (2020): 1689-1722.
  25. Cai, K.L., et al. "Mini-basketball training program improves physical fitness and social communication in preschool children with autism spectrum disorders." *J. Hum. Kinet.* 73.1 (2020): 267-278.
  26. Minolin, T. Mary Minolin T. "The Effectiveness of evidence-based intervention on social skill and communication among autism spectrum disorder children.: autism spectrum disorder children." *J Popul Ther Clin Pharmacol.* 29.02 (2022).
  27. Clendon, S., et al. "Emergent literacy assessment in children with autism spectrum disorder who have limited verbal communication skills: A tutorial." *Lang Speech Hear Serv Sch.* 52.1 (2021): 165-180.
  28. Luyster, R., & Lord, C. "Word learning in children with autism spectrum disorders." *Dev psychol.* 45.6 (2009): 1774.
  29. Shyman, E. "The reinforcement of ableism: Normality, the medical model of disability, and humanism in applied behavior analysis and ASD." *Intellect dev disabil.* 54.5 (2016): 366-376.
  30. Xu, W., et al. "Intervention effect of sensory integration training on the behaviors and quality of life of children with autism." *Psychiatr Danub.* 31.3 (2019): 340-346.
  31. Preis, J., & McKenna M. "The effects of sensory integration therapy on verbal expression and engagement in children with autism." *Int J Ther Rehabil.* 21.10 (2014): 476-486.
  32. Mohammadzaheri, F., et al. "A randomized clinical trial comparison between pivotal response treatment (PRT) and structured applied behavior analysis (ABA) intervention for children with autism." *J autism dev disord.* 44.11 (2014): 2769-2777.
  33. Yu, Q., et al. "Efficacy of interventions based on applied behavior analysis for autism spectrum disorder: A meta-analysis." *Psychiatry investig.* 17.5 (2020): 432.

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