

## COMPARATIVE STUDY: ABA VERSUS TEACCH IN AUTISM

### INTERVENTIONS OUTCOMES

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### ABSTRACT

This review paper provides a comprehensive comparison of Applied Behavior Analysis (ABA) and the Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH) in the context of autism spectrum disorder (ASD) interventions. Through examining effectiveness, cost, accessibility, and satisfaction among parents and children, alongside long-term outcomes, the paper identifies strengths and limitations inherent to each approach. While ABA demonstrates notable improvements in specific behavioral objectives, its intensity and resource demands pose challenges. Conversely, TEACCH's individualized and structured approach promotes independence but may lack the intensity required for behavioral mastery. The review emphasizes the importance of tailoring interventions to individual needs and suggests the potential benefits of integrating strategies from both ABA and TEACCH to enhance overall effectiveness. This tailored approach supports diverse learning styles and developmental needs, encouraging a more inclusive and adaptable treatment model for ASD.

**Keywords:** Autism Spectrum Disorder, ABA (Applied Behavior Analysis), TEACCH, Intervention Effectiveness, Individualized Treatment.

### 1. INTRODUCTION

Autism Spectrum Disorder (ASD) is a developmental condition marked by significant social, communication, and behavioral challenges. The rising prevalence of ASD across the globe underscores the critical need for effective and comprehensive rehabilitation services to support individuals affected by this condition (Dawson et al., 2010). Given the spectrum nature of ASD, interventions must be tailored to meet the diverse needs of individuals, leading to the development of various therapeutic approaches. Among these, Applied Behavior Analysis (ABA) and the Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH) have emerged as prominent methodologies, each with distinct philosophies and implementation strategies (Mesibov, Shea, & Schopler, 2005).

The importance of examining the comparative effectiveness of ABA and TEACCH cannot be overstated. Such comparative analyses are vital for educators, clinicians, parents, and policymakers who must make informed decisions about the allocation of resources and the selection of appropriate interventions for individuals with ASD. This is particularly crucial given the lifelong impact these interventions can have on the quality of life and developmental outcomes for children with ASD (Howard et al., 2014).

The objective of this review is to critically assess the existing literature comparing the outcomes of ABA and TEACCH interventions for children with ASD. Specifically, this paper aims to analyze and synthesize the findings from various studies to determine the relative effectiveness of each approach in improving key developmental areas such as communication, social skills, and adaptive behavior. To conduct this review, a comprehensive literature search was performed using databases including PubMed, PsycINFO, and Scopus. Keywords used in the search included "Autism Spectrum Disorder", "ABA", "TEACCH", "comparative effectiveness", and "intervention outcomes". The inclusion criteria were studies published in English between 2000 and 2023 that directly compared ABA and TEACCH interventions for children with ASD. Exclusion criteria included studies that did not provide a direct comparison, were not peer-reviewed, or focused on adult populations. The selection process was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure a methodical and reproducible approach to article selection and analysis (Schreibman et al., 2015). This paper aims to fill a gap in the current literature by providing a comprehensive comparison of ABA and TEACCH, thereby aiding stakeholders in making evidence-based decisions that best support the developmental needs of children with ASD. Through this analysis, we seek to highlight the strengths and limitations of each approach and suggest directions for future research and practice in the field of autism interventions.

### ABA METHOD

Applied Behavior Analysis (ABA) is a scientific approach that applies techniques based on learning principles to change behaviors of social significance. It has been one of the most well-known and extensively researched interventions for

autism spectrum disorder (ASD). The core principles of ABA involve the systematic application of interventions based upon principles of learning theory to improve socially significant behaviors, with the goal of enhancing overall quality of life for individuals and their families (Cooper, Heron, & Heward, 2007).

ABA is highly data-driven and tailored to individual needs, making it a flexible approach that can address a wide range of behaviors across different settings and populations. It operates under the premise that behavior is influenced by the environment and can therefore be changed through systematic manipulation of environmental variables (Baer, Wolf, & Risley, 1968).

One of the hallmark techniques of ABA is Discrete Trial Training (DTT), a structured method of teaching that breaks down skills into small, manageable steps. Each step is taught individually until mastery, using prompts and reinforcements to shape desired behaviors (Smith, 2001). Pivotal Response Training (PRT), another ABA strategy, focuses on pivotal areas of a child's development, such as motivation and responsiveness, rather than on individual behaviors. PRT aims to produce broad improvements across other areas of sociability, communication, and behavior (Koegel, Koegel, Harrower, & Carter, 1999). Natural Environment Training (NET), meanwhile, emphasizes teaching skills in the environments where they naturally occur, rather than in structured settings, thus promoting generalization of learned behaviors (McGee, Morrier, & Daly, 1999).

The effectiveness of ABA in treating ASD has been well documented. Numerous studies have demonstrated that children with autism who receive intensive ABA therapy can make significant improvements in areas such as intellectual functioning, language development, and daily living skills (Lovaas, 1987; McEachin, Smith, & Lovaas, 1993). A meta-analysis by Eldevik et al. (2009) found that children who participated in early intensive behavioral intervention (EIBI), a form of ABA, showed significant improvements in IQ, language skills, and adaptive behavior compared to control groups.

Despite its demonstrated efficacy, ABA has faced criticism and challenges. Critics argue that the intensive nature of ABA therapy – often requiring 20 to 40 hours per week – can be demanding for children and families (Solomon, Necheles, Ferch, & Bruckman, 2007). There are also concerns regarding the potential for prompt dependency, where children may become overly reliant on specific cues to perform behaviors. Ethical concerns have been raised about the focus on compliance and the modification of behavior being potentially dismissive of the child's autonomy and individuality (Leaf et al., 2016).

Moreover, some in the autism community argue that ABA, by focusing on changing behaviors to fit societal norms, can send a message that autistic individuals need to be "fixed" rather than accepted for who they are. This perspective has fueled ongoing debates about the goals of autism interventions and the importance of respecting neurodiversity (Dawson, 2004).

While ABA has been proven to be an effective approach for many children with ASD, it is not without its challenges and criticisms. The intensity, focus on compliance, and potential ethical concerns highlight the need for ongoing research, development, and dialogue regarding the implementation and goals of ABA. It is essential for practitioners, parents, and the broader autism community to work together to ensure that interventions not only aim for effective outcomes but also respect the dignity and individuality of each person with autism.

## **2. TEACCH METHOD**

The Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH) program was developed in the early 1970s by Dr. Eric Schopler and colleagues at the University of North Carolina at Chapel Hill. The TEACCH program is grounded in the understanding that individuals with ASD have unique perceptual and cognitive styles that distinguish them from neurotypical individuals. Therefore, TEACCH aims to accommodate these unique styles through personalized teaching and supports, rather than attempting to change the individual's inherent traits (Schopler, Brehm, Kinsbourne, & Reichler, 1971).

TEACCH is known for its use of Structured Teaching, a key component of the approach. This involves organizing the physical environment, developing schedules, and using visual cues to make tasks clearer and easier to understand for individuals with ASD. The goal is to promote independence and self-regulation by making the world more predictable for those with autism. Visual supports, such as picture schedules, work systems, and visual structure, are critical in TEACCH, as they cater to the strong visual processing abilities typically found in individuals with ASD (Mesibov, Shea, & Schopler, 2005).

Skills assessment is another fundamental aspect of the TEACCH program. Unlike other methods that might start with a set curriculum, TEACCH begins with individualized assessment to understand the strengths, interests, and challenges of each person. These assessments inform the development of personalized teaching plans tailored to each individual's needs, ensuring that interventions are meaningful and effective (Panerai et al., 2009).

The effectiveness of the TEACCH program has been documented in various studies. Research has shown improvements in several areas for individuals with ASD, including communication, social skills, and independence. A study by Panerai and colleagues (2009) demonstrated that children in a TEACCH-based program showed significant improvements in autonomy, daily living skills, and social interaction compared to a control group. Additionally, the structured nature of TEACCH has been found to reduce anxiety and increase organization, leading to a more productive learning environment (Ozonoff & Cathcart, 1998).

However, the TEACCH approach is not without its challenges and criticisms. Some argue that the high degree of structure and routine might limit the generalizability of learned skills to less structured environments. Critics also contend that the focus on individualized instruction might not sufficiently address the development of spontaneous social interactions and communicative intents (Jordan, 2001). Moreover, the variability in how TEACCH is applied across different settings can lead to inconsistent outcomes, making it difficult to assess the program's overall effectiveness (Handleman & Harris, 2000).

TEACCH represents a shift from a one-size-fits-all approach to a more individualized and understanding-based approach to autism intervention. By focusing on adapting the environment to fit the needs of the individual, rather than forcing the individual to adapt to an unaccommodating environment, TEACCH has paved the way for more respectful and effective autism interventions. Despite its challenges, the program's strengths in promoting independence and capitalizing on individual strengths provide a valuable framework for supporting individuals with ASD.

In the field of autism spectrum disorder (ASD) interventions, Applied Behavior Analysis (ABA) and the Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH) represent two widely adopted approaches with distinct methodologies and philosophical underpinnings. This comparative analysis aims to evaluate these interventions across several dimensions: effectiveness, cost, accessibility, parent and child satisfaction, and long-term outcomes.

### **3. COMPARATIVE FRAMEWORK**

The criteria for comparing ABA and TEACCH encompass a range of factors critical to assessing the overall value and impact of each method. Effectiveness refers to measurable improvements in specific ASD symptoms and overall functioning, including communication skills, social interaction, and academic performance. Cost considerations encompass the financial investment required for each intervention, including therapy sessions, materials, and training for practitioners. Accessibility evaluates how readily families can access and implement each method, considering geographic location, available resources, and required expertise. Parent and child satisfaction measures the subjective experiences and perceived benefits of the interventions from the perspective of those directly involved. Lastly, long-term outcomes assess the sustainability and persistence of treatment gains over time.

### **4. SYNTHESIS OF FINDINGS**

ABA is known for its structured, behavior-centric approach, emphasizing reinforcement strategies to shape behaviors and develop new skills. Studies have consistently shown that ABA can lead to significant improvements in cognitive function, language skills, and adaptive behavior among children with ASD (Eldevik et al., 2009). However, the high intensity and rigidity of ABA programs, often requiring 20-40 hours per week of therapy, can be a significant barrier in terms of cost and accessibility for many families (Howard et al., 2014).

In contrast, TEACCH focuses on adapting the environment to fit the needs of individuals with ASD, promoting independence through structured teaching and visual supports. Research indicates that TEACCH can improve engagement, reduce maladaptive behaviors, and increase satisfaction among parents and educators, though evidence on its long-term effectiveness is less robust than for ABA (Panerai, Ferrante, & Zingale, 2009). TEACCH is often viewed as more adaptable and less resource-intensive, potentially making it more accessible to a wider range of families.

### **POPULATION AND CONTEXTUAL CONSIDERATIONS**

The effectiveness of ABA and TEACCH can vary significantly based on demographic factors such as age, severity of autism, and individual learning styles. ABA has been most effective when started early and tailored to the child's specific needs, though its intensity may not be suitable for all children or family situations (Lovaas, 1987). TEACCH, with its emphasis on individualized learning and environmental adaptation, may be more applicable across a broader age range and spectrum of severity, but may not produce as rapid or pronounced improvements in specific behavioral targets (Mesibov, Shea, & Schopler, 2005).

Contextual factors, including the setting (home vs. school vs. clinic) and the availability of trained professionals, also significantly impact the implementation and effectiveness of both methods. ABA requires consistent, intensive sessions with trained therapists, which can be challenging to implement in home and school settings without adequate support.

TEACCH, designed to be integrated into educational environments, may be easier to implement in school settings but might lack the individualized intensity found in one-on-one ABA therapy.

### **PRACTITIONER AND FAMILY PERSPECTIVES**

Practitioners and families have reported benefits and challenges with both ABA and TEACCH. ABA's structured approach is often praised for producing tangible, measurable improvements, but its intensity and focus on behavior change can be perceived as disregarding the child's autonomy and individuality, leading to mixed satisfaction among parents and caregivers (Leaf et al., 2016). Conversely, TEACCH's focus on individual strengths and integration into daily routines is generally well-received by families, fostering a more holistic approach to the child's development (Schopler et al., 1995). However, some practitioners and families express concerns over the lack of focus on reducing specific undesirable behaviors compared to ABA.

In conclusion, both ABA and TEACCH offer valuable strategies for addressing the diverse needs of individuals with ASD. The choice between these approaches should be guided by a comprehensive understanding of the child's unique needs, family resources, and long-term goals. Future research should aim to further elucidate the comparative strengths and weaknesses of each approach, with an emphasis on understanding the perspectives of those directly involved in the intervention process.

### **5. CONCLUSION**

In this comparative review of Applied Behavior Analysis (ABA) and the Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH) methods, key findings reveal that both approaches offer valuable interventions for children with Autism Spectrum Disorder (ASD). ABA is highly structured and data-driven, focusing on individual behaviors and their modification through reinforcement strategies. It has been proven effective in improving cognitive function, language skills, and adaptive behaviors. However, it is resource-intensive and may not suit every individual's or family's needs. On the other hand, TEACCH emphasizes adapting the environment to fit the needs of the individual with ASD, promoting independence and general life skills through structured teaching and visual supports. While offering more flexibility and potentially greater accessibility, its effects on specific behaviors are less quantifiable compared to ABA.

Choosing the right intervention requires a nuanced understanding of the individual's needs, strengths, and family context. The decision should be guided by a thorough assessment and involve the collaboration of families, educators, and therapists. This review underscores the importance of personalized care in autism treatment and the potential benefits of integrating elements from both ABA and TEACCH to provide a holistic and adaptable approach. As the body of evidence continues to evolve, so too should our strategies for supporting individuals with ASD, always with the aim of enhancing their quality of life and fostering independent

### **6. REFERENCES**

- [1] Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., ... & Varley, J. (2010). Randomized, controlled trial of an intervention for toddlers with autism: The Early Start Denver Model. *Pediatrics*, 125(1), e17-e23.
- [2] Eikeseth, S. (2009). Outcome of comprehensive psycho-educational interventions for young children with autism. *Research in Developmental Disabilities*, 30(1), 158-178.
- [3] Howard, J. S., Stanislaw, H., Green, G., Sparkman, C. R., & Cohen, H. G. (2014). Comparison of behavior analytic and eclectic early interventions for young children with autism after three years. *Research in Developmental Disabilities*, 35(12), 3326-3344.
- [4] Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3-9.
- [5] Mesibov, G. B., Shea, V., & Schopler, E. (2005). The TEACCH approach to autism spectrum disorders. New York: Springer.
- [6] Panerai, S., Zingale, M., Trubia, G., Finocchiaro, M., Zuccarello, R., Ferri, R., & Elia, M. (2009). Special education versus inclusive education: The role of the TEACCH program. *Journal of Autism and Developmental Disorders*, 39(6), 874-882.
- [7] Schreibman, L., Dawson, G., Stahmer, A. C., Landa, R., Rogers, S. J., McGee, G. G., ... & Ingersoll, B. (2015). Naturalistic developmental behavioral interventions: Empirically validated treatments for autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 45(8), 2411-2428.
- [8] Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1(1), 91-97.

[9] Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

[10] Dawson, G. (2004). Autism: Nature, diagnosis, and treatment. *Annual Review of Clinical Psychology*, 1, 411-434.

[11] Eldevik, S., Hastings, R. P., Hughes, J. C., Jahr, E., Eikeseth, S., & Cross, S. (2009). Meta-analysis of early intensive behavioral intervention for children with autism. *Journal of Clinical Child & Adolescent Psychology*, 38(3), 439-450.

[12] Koegel, L. K., Koegel, R. L., Harrower, J. K., & Carter, C. M. (1999). Pivotal response intervention I: Overview of approach. *Journal of the Association for Persons with Severe Handicaps*, 24(3), 174-185.

[13] Leaf, J. B., Leaf, R., McEachin, J., Taubman, M., Ala'i-Rosales, S., Ross, R. K., ... & Oppenheim-Leaf, M. L. (2016). Applied behavior analysis is a science and, therefore, progressive. *Journal of Autism and Developmental Disorders*, 46(2), 720-731.

[14] Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3-9.

[15] McEachin, J. J., Smith, T., & Lovaas, O. I. (1993). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation*, 97(4), 359-372.

[16] McGee, G. G., Morrier, M. J., & Daly, T. (1999). An incidental teaching approach to early intervention for toddlers with autism. *Journal of the Association for Persons with Severe Handicaps*, 24(3), 133-146.

[17] Smith, T. (2001). Discrete trial training in the treatment of autism. *Focus on Autism and Other Developmental Disabilities*, 16(2), 86-92.

[18] Solomon, M., Necheles, J., Ferch, C., & Bruckman, D. (2007). Pilot study of a parent training program for young children with autism: The PLAY Project Home Consultation program. *Autism*, 11(3), 205-224.

[19] Handleman, J. S., & Harris, S. L. (2000). Preschool education programs for children with autism (2nd ed.). Austin, TX: PRO-ED.

[20] Jordan, R. (2001). *Autism with severe learning difficulties*. London, UK: Souvenir Press.

[21] Mesibov, G. B., Shea, V., & Schopler, E. (2005). *The TEACCH approach to autism spectrum disorders*. New York: Springer.

[22] Ozonoff, S., & Cathcart, K. (1998). Effectiveness of a home program intervention for young children with autism. *Journal of Autism and Developmental Disorders*, 28(1), 25-32.

[23] Panerai, S., Ferrante, L., & Zingale, M. (2009). Benefits of the Treatment and Education of Autistic and Communication Handicapped Children (TEACCH) programme as compared with a non-specific approach. *Journal of Intellectual Disability Research*, 53(6), 503-512.

[24] Schopler, E., Brehm, S. S., Kinsbourne, M., & Reichler, R. J. (1971). Effect of treatment structure on development in autistic children. *Archives of General Psychiatry*, 24(5), 415-421.

[25] Eldevik, S., Hastings, R. P., Hughes, J. C., Jahr, E., Eikeseth, S., & Cross, S. (2009). Meta-analysis of Early Intensive Behavioral Intervention for children with autism. *Journal of Clinical Child & Adolescent Psychology*, 38(3), 439-450.

[26] Howard, J. S., Stanislaw, H., Green, G., Sparkman, C. R., & Cohen, H. G. (2014). A comparison of intensive behavior analytic and eclectic treatments for young children with autism. *Research in Developmental Disabilities*, 35(12), 3326-3344.

[27] Leaf, J. B., Leaf, R., McEachin, J., Taubman, M., Ala'i-Rosales, S., Ross, R. K., Smith, T., & Weiss, M. J. (2016). Applied behavior analysis is a science and, therefore, progressive. *Journal of Autism and Developmental Disorders*, 46(2), 720-731.

[28] Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55(1), 3-9.

[29] Mesibov, G. B., Shea, V., & Schopler, E. (2005). *The TEACCH approach to autism spectrum disorders*. New York: Springer.

[30] Panerai, S., Ferrante, L., & Zingale, M. (2009). Benefits of the Treatment and Education of Autistic and Communication Handicapped Children (TEACCH) programme as compared with a non-specific approach. *Journal of Intellectual Disability Research*, 53(6), 503-512.

[31] Schopler, E., Reichler, R. J., & Lansing, M. D. (1995). *Individualized Assessment and Treatment for Autistic and Developmentally Disabled Children: Psychoeducational Profile-Revised (PEP-R)*. Austin, TX: Pro-Ed.