



University of Tennessee, Knoxville
**TRACE: Tennessee Research and Creative
Exchange**

Chancellor's Honors Program Projects

Supervised Undergraduate Student Research
and Creative Work

5-2023

An Investigation of the Best Practices for Assessing and Intervening with Autism in the Education System

Madison B. Huffstutter
University of Tennessee, Knoxville, mhuffstu@vols.utk.edu

Follow this and additional works at: https://trace.tennessee.edu/utk_chanhonoproj



Part of the [School Psychology Commons](#)

Recommended Citation

Huffstutter, Madison B., "An Investigation of the Best Practices for Assessing and Intervening with Autism in the Education System" (2023). *Chancellor's Honors Program Projects*.
https://trace.tennessee.edu/utk_chanhonoproj/2543

This Dissertation/Thesis is brought to you for free and open access by the Supervised Undergraduate Student Research and Creative Work at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Chancellor's Honors Program Projects by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

**An Investigation of the Best Practices for Assessing and Intervening with Autism in the
Education System**

Madison B. Huffstutter

University of Tennessee, Knoxville

UNHO 498: Honors Capstone Project

Dr. Katherine Rowinski

May 11, 2023

Abstract

This literature review is an examination of what best assessment and intervention for students with ASD look like, as well as what diagnostic tools and intervention strategies are commonly utilized by school psychologists. ASD is a complex developmental disability that can present in various ways at various levels of severity in students; thus, it is important to keep up to date on existing methods for assessment and intervention in addition to what best practice is.

Additionally, this review looks at a few places where the current field of school psychology, assessment, and intervention is lacking and what improvements the literature suggests can be made. Overall, after a review of 14 different articles, the literature seems to unanimously suggest that multi-disciplinary and early assessments and interventions are best for diagnosing and treating students with ASD. Further, there are a plethora of common assessments and interventions utilized by school psychologists. Finally, while school psychology is believed to be in a good place, increased knowledge and training in ASD is suggested for the future in combination with a deeper understanding of the etiology.

Keywords: assessment, intervention, best practice, autism spectrum disorder (ASD)

An Investigation of the Best Practices for Assessing and Intervening with Autism in the Education System

The topic of assessment and intervention for students diagnosed with Autism Spectrum Disorder (ASD) is an ever-increasing area of importance for school psychologists, especially as their role in assessment and intervention continues to increase. With research constantly being produced, it can be difficult to keep up with the most common, empirically based assessments/interventions being used in the world of education today, as well as with what constitutes best assessment and intervention in general. The purpose of this literature review is to provide an overview of what best assessment and intervention generally look like, what assessments and interventions are commonly utilized by school psychologists, and where the field might be heading in the future.

What is “Good” Assessment?

The literature surrounding best practice for autism assessment generally focuses on key components that should be included in assessments. Ozonoff et al. (2005) first emphasize the importance of history taking – including parent interviews, mental health assessment, teacher interviews, and record reviews – when assessing a child. Further, direct observation and interaction are noted as vital to forming a complete picture. In addition to this, intellectual assessment is another key feature of good assessment. Intellectual level can be associated with severity of autistic symptoms, and intellect can be measured using a variety of different tests depending on age and language level of the child. Language and adaptive behavior are also pinpointed by Ozonoff et al. (2005) as primary assessment points, especially because of how these evaluations have been seen to affect long-term outcomes. Outside of what Ozonoff et al. (2005) consider “core features” of autism assessment, they also suggest that assessing neuropsychological functioning, attention, executive functioning, academic functioning,

comorbidities, school context, and family context can be useful to add into one's assessment depending on the referral questions one is wanting to answer.

Volker & Lopata (2008) offer a similar list of key components in their own article about best assessment practices. Among the first things noted by these authors is that a medical examination and a genetic test should be done, especially considering the physical risks (such as lead poisoning from placing non-food in the mouth) and genetic influences associated with autism. Further, audiological testing is suggested as hearing problems could play a role in language delay. Psychological testing is the final key domain: developmental history, cognitive, adaptive/maladaptive behavior, and functional behavioral assessments all included.

Commonly Used Assessment Methods

There are several diagnostic tools commonly used by school psychologists to assess characteristics of autism.

The Autism Diagnostic Observation Schedule

The Autism Diagnostic Observation Schedule (ADOS) is an incredibly common diagnostic tool used by clinicians, and it is often cited in Best Practice Guidelines. According to the literature, the ADOS is one of few existing measures that utilize direct observation and interactions to assess autistic characteristics (Akshoomoff et al., 2006). Akshoomoff et al. (2006) note that school psychologists often include classroom observation and teacher report as part of their observation. Classification with the ADOS is based on whether a student meets or exceeds the cut-off score in three areas: Communication, Reciprocal Social Interaction, and Total. The validity of this test is cited as being good, with a high percentage of sensitivity (90-97%) (Akshoomoff et al., 2006).

Klose et al. (2012) also identify the specific areas where the ADOS excels in identification and intervention planning based on the Individuals with Disabilities Education Act (IDEA) criteria. These areas include nonverbal communication, social interaction, verbal communication, and unusual responses to sensory experiences. These authors also point out that the ADOS is useful in making differential diagnoses, something not often seen with other diagnostic tools.

Autism Diagnostic Interview – Revised

The Autism Diagnostic Interview-Revised (ADI-R) is a standardized interview administered to parents and/or caregivers. Klose et al. (2012) state that classification is made based on whether a student meets or exceeds a cut-off score. The areas in which the ADI-R excels in identification and intervention planning based on IDEA criteria are similar to those of the ADOS but much more broad: nonverbal communication, social interaction, verbal communication, repetitive activities and stereotyped movement, resistance to environmental change, and evidence before age 3 (Klose et al., 2012).

Psychoeducational Profile – Third Edition

The Psychoeducational Profile – Third Edition (PEP-3), like the ADOS, is based on direct assessment and observation; however, it is only used in children ages 6 months to 7 years. Klose et al. (2012) note that scores are based on standard scores and that these scores can be useful in IEP planning – this test is not useful in making differential diagnoses. The PEP-3 does not have many strengths in identification and intervention planning based on IDEA criteria, but it is strong in identifying verbal communication issues and skills (Klose et al., 2012).

Childhood Autism Rating Scale, 2nd Ed.

The Childhood Autism Rating Scale, 2nd Ed. (CARS-2) is based on ratings given to direct observations made by the clinician. According to Klose et al. (2012), the CARS-2 utilizes both cut-off scores and standard scores to identify autism and severity of symptoms. This assessment is not great with differential diagnosis, but it is a very quick diagnostic tool to score and interpret once observations are complete. Overall, the literature states that the CARS-2 does not have much strength when it comes to identification and intervention planning based on IDEA criteria (Klose et al., 2012).

Gilliam Autism Rating Scale, 2nd Edition

The Gilliam Autism Rating Scale, 2nd Edition (GARS-2) is a very popular rating scale completed by parents/caregivers and teachers. Klose et al. (2012) state that it is based on standard scores, and generally very quick to complete and score; however, it is not great with differential diagnoses. Further, the GARS-2 is particularly weak when it comes to identification and intervention planning based on IDEA Criteria – it is generally only adequately effective in judging evidence of symptoms before 3.

In their article, Montgomery et al. (2008) note that the GARS-2's main purpose is to help differentiate between autism and severe behavioral disorders. It is not intended to be used in isolation to make autism diagnoses. Instead, it is intended to be used in combination with other diagnostic tools.

Barriers to Assessment

One of the biggest barriers to assessment in schools centers around implementing assessments that are both linguistically and culturally responsive. Harris et al. (2019) report several challenges experienced by school psychologists under this umbrella: challenges with evaluation, family, cultural understanding, and communication. Evaluation challenges mainly

include things like trouble explaining the assessment to families, trouble building rapport with children, needing unique resources, and having inaccurate family reports. Family challenges are similar and have to do with family interactions. For example, a family might have certain stigmas associated with disability; thus, they are reluctant to even discuss the idea. Cultural barriers encompass trying to understand how much of a student's behavior is due to cultural difference and not disfunction. Finally, language barriers include not only having trouble communicating with the student and/or their family but also having trouble with making sure the interpreter is explaining everything exactly as needed and nothing is being lost in translation.

What is “Best” Practice in Intervention?

Similar to the literature surrounding best practice in assessment, the literature focusing on best intervention practices also centers around a few key components. The number one component listed by Parsons et al. (2011) is early intervention, which experts agreed was central to maximizing effect of treatment. Further, Parsons et al. (2011) cite intensive behavioral intervention, specific learning approaches, social interaction/skills, working with families, training teachers, multi-agency approaches, transition to adulthood, and giving those with autism a voice as all vital domains to include when planning/conducting an effective intervention.

Volker & Lopata (2008) add a separate, yet connected, collection of specific interventions that should be included within a school psychologist's intervention plan for a student with autism. Early and intensive behavioral intervention is first cited, as it has shown to be significantly effective in helping children improve academically and socially. Cognitive behavioral interventions are also noted as key to include, especially for higher-functioning students. The last dimension noted is psychopharmacological interventions, useful for students with ASD that experience problems with hyperactivity, inattention, and anxiety.

Role of Parents in Intervention

Due to the evidence suggesting the effectiveness of parent-focused interventions for children diagnosed with ASD, the extent to which parents are included in school-based interventions is a prominent question in the literature. Rispoli et al. (2019) focus on this question. They found that while parents are often trained in specific skills and techniques to help their child, less often are there interventions that align with a family-school partnership model (FSP), an intervention model that is child-centered and is built on communication, collaboration, and coordination between families and schools. While there is no present data on the long-term impacts of one model of parent-involvement versus the other, Rispoli et al. (2019) suggest that FSP modeled interventions could allow for better postsecondary transition for students with ASD. Therefore, Rispoli et al. (2019) emphasize the need for more FSP modeled interventions, emphasizing the integral role parent-involvement has in autism intervention and highlighting the need for better parent integration in school-based interventions.

Commonly Used Intervention

There are a plethora of commonly used interventions for the treatment of ASD.

Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH)

The Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) method of intervention is a model strongly based on collaboration between parents and professionals. According to Gresham et al. (1999) TEACCH is based on six main principles: promote adaptation by improving skills, formal and informal evaluation are vital to developing individual educational plans, both cognitive and behavior therapy should be utilized,

accept parent and child deficiencies and enhance skills you can, use visual cues to educate mots effectively, and use a holistic approach (Gresham et al., 1999).

Pivotal Response Treatment (PRT)

Pivotal Response Treatment (PRT) is an intervention that aims to decrease symptoms in communication, social skills, behavior, and academics that commonly occur with an ASD diagnosis via a set of pivotal principles. Renshaw and Kuriakose (2011) note that these principles can be divided into two distinct categories: principles focused on targeting vital areas of development and principles for making the best of the environment in which intervention takes place. Principles under the first category include things such as motivation, self-management, self-initiation, and the ability to respond to multiple cues. Principles under the second category, conversely, include things such as administering intervention early, often, and intensely, administering intervention in a naturalistic setting, and involving family in the design and administration of intervention (Renshaw & Kuriakose, 2011).

Discrete Trial Training (DTT)

Discrete Trial Training (DTT) is an intervention based in applied behavioral analysis that focuses on a collection of basic tenets. Additionally, intervention usually progresses through 5 stages for which the goals slowly become more complex. According to Skokut et al. (2008), the tenets of DTT include 1:1 intervention, prompts/fading of prompts, immediate reinforcement, and concise instructions. Further, they give a brief summary of what each stage of intervention entails. Stage one of intervention focuses on decreasing disruptive behavior through teaching single step instructions. Stage two focuses on the use of discrete trials to teach foundational skills. Stage three focuses on building foundational language skills. In stage four those language

skills are expanded on. Finally, stage five pairs children with ASD with typical peers to practice language skills and help them adapt to more school-like settings (Skokut et al., 2008).

Peer-Mediated Strategies

Peer-mediated strategies are a broad category of interventions that involve using peer-mediated interactions between typical peers and students with autism to increase socialization and maintain previously learned skills. Williams et al. (2005) note that peer-mediated interventions can be implemented in a variety of formats. Additionally, they note that peer-mediated strategies are great because of their generalizability, their adaptability, their proactivity, and their little required planning time. These strategies of intervention are also beneficial for the inclusion of students in general classrooms, a growing technique in school psychology (Williams et al., 2005).

Where We Are Now and Future Directions

The literature on this topic suggests that the current state of assessment and intervention in schools is encouraging. Sansosti and Sansosti (2013) suggest in one study that both trainers and school psychologists engage in a large number of empirically-based assessment and intervention practices. However, this does not mean that no improvements can be made. One improvement in training mentioned by Sansosti and Sansosti (2013) is the implementation of more ASD specific coursework. Further, they emphasize the importance of increased training opportunities in best assessment and intervention practice, especially trainings that highlight current findings and introduce new research to practitioners as it continues to be produced.

Volker and Lopata (2008) also note future directions. One thing they highlight is the likelihood that school psychologists' role in ASD assessment and intervention will increase. Further, they emphasize the importance of bettering etiology so school psychologists may begin

identifying ASD earlier and providing more individualized interventions. The hope is this earlier assessment and improved intervention would help greatly mitigate several of the hurdles people with ASD face.

Conclusion

In summation, effective assessment and intervention for students with ASD are generally classified as being multi-disciplinary, early, and collaborative. There are many different assessments and interventions utilized by school psychologists to best diagnose and treat students with ASD, and a lot of these various tools are often used in combination in order to produce the best results. In future, school psychology training needs a better focus on teaching ASD specific content, as well as on providing increased training opportunities. Further, the hope is that one day the understanding surrounding the etiology of ASD will increase, leading to better, earlier assessments in addition to more individualized and effective interventions. Overall, the literature, while varied, generally concludes that it will take school psychologists, families, teachers, and institutions working in union to provide the most optimal care for students with ASD.

References

- Akshoomoff, N., Corsello, C., & Schmidt, H. (2006). The role of the Autism Diagnostic Observation Schedule in the assessment of autism spectrum disorders in school and community settings. *The California School Psychologist, 11*, 7-19. <https://doi.org/10.1007/BF03341111>
- Gresham, F. M., Beebe-Frankenberger, M. E., & MacMillan, D. L. (1999). A selective review of treatments for children with autism: Description and methodological considerations. *School Psychology Review, 28*(4), 559-575. <https://doi.org/10.1080/02796015.1999.12085985>
- Harris, B., McClain, M. B., Haverkamp, C. R., Cruz, R. A., Benallie, K. J., & Benney, C. M. (2019). School-based assessment of autism spectrum disorder among culturally and linguistically diverse children. *Professional Psychology: Research and Practice, 50*(5), 323-332. <http://dx.doi.org/10.1037/pro0000256>
- Klose, L. M., Plotts, C., Kozeneski, N., & Skinner-Foster, J. (2012). A review of assessment tools for diagnosis of autism spectrum disorders: Implications for school practice. *Assessment for Effective Intervention, 37*(4), 236-242. <https://doi.org/10.1177/1534508411415090>
- Montgomery, J. M., Newton, B., & Smith, C. (2008). Test Review: Gilliam, J. (2006). GARS-2: Gilliam Autism Rating Scale—Second Edition. Austin, TX: PRO-ED. *Journal of Psychoeducational Assessment, 26*(4), 395-401. <https://doi.org/10.1177/0734282908317116>

- Ozonoff, S., Goodlin-Jones, B. L., & Solomon, M. (2005). Evidence-based assessment of Autism Spectrum Disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology, 34*(3), 523-540. https://doi.org/10.1207/s15374424jccp3403_8
- Parsons, S., Guldberg, K., MacLeod, A., Jones, G., Prunty, A., & Balfe, T. (2011). International review of the evidence on best practice in educational provision for children on the autism spectrum. *European Journal of Special Needs Education, 26*(1), 47–63. <https://doi.org/10.1080/08856257.2011.543532>
- Renshaw, T. L., & Kuriakose, S. (2011). Pivotal response treatment for children with autism: Core principles and applications for school psychologists. *Journal of Applied School Psychology, 27*(2), 181-200. <https://doi.org/10.1080/15377903.2011.566166>
- Rispoli, K. M., Mathes, N. E., & Malcolm, A. L. (2019). Characterizing the parent role in school-based interventions for autism: A systematic literature review. *School Psychology, 34*(4), 444–457. <https://doi.org/10.1037/spq0000283>
- Sansosti, F. J., & Sansosti, J. M. (2013). Effective school-based service delivery for students with autism spectrum disorders: Where we are and where we need to go. *Psychology in the Schools, 50*(3), 229-244. <https://doi.org/10.1002/pits.21669>
- Shriver, M. D., Allen, K. D., & Mathews, J. R. (1999). Effective assessment of the shared and unique characteristics of children with autism. *School Psychology Review, 28*(4), 538-558. <https://doi.org/10.1080/02796015.1999.12085984>
- Skokut, M., Robinson, S., Openden, D., & Jimerson, S. R. (2008). Promoting the social and cognitive competence of children with autism: Interventions at school. *The California School Psychologist, 13*, 93-108. <https://doi.org/10.1007/BF03340945>

- Volker, M. A., & Lopata, C. (2008). Autism: A review of biological bases, assessment, and intervention. *School Psychology Quarterly*, 23(2), 258-270. <https://doi.org/10.1037/1045-3830.23.2.258>
- Williams, S. K., Johnson, C., & Sukhodolsky, D. G. (2005). The role of the school psychologist in the inclusive education of school-age children with autism spectrum disorders. *Journal of School Psychology*, 43, 117-136. <https://doi.org/10.1016/j.jsp.2005.01.002>