



The SCERTS Model and Evidence-Based Practice*

(Prizant, Laurent & Rubin, 2020)

The SCERTS Model - SCERTS is an evidence-based educational framework that addresses the core domains of social communication (SC), emotional regulation (ER) by ensuring that the environment is adapted with both interpersonal and learning supports, referred to as transactional support (TS). SCERTS, as a framework, allows individuals, families and practitioners to select the most essential areas of focus based upon research in child development and longitudinal outcomes in autism and related neurodevelopmental conditions (Prizant, Wetherby, Rubin, Laurent & Rydell, 2006).

Evidence-based Practice -Our definition of evidence-based practice is drawn from the descriptions provided by the American Psychological Association and the American Speech-Language-Hearing Association. According to the American Psychological Association (APA, 2005), the “definition of EBPP [evidence-based practice in psychology] closely parallels the definition of evidence-based practice adopted by the Institute of Medicine (2001, p. 147): ‘Evidence- based practice is the integration of best research evidence with clinical expertise and patient values.’” The APA goes on to assert that “Evidence-based practice in psychology (EBPP) is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (APA, 2005).

The American Speech-Language-Hearing Association (ASHA) further emphasizes these points in its definition:

“Evidence-based practice (EBP) is the integration of

- Clinical expertise/expert opinion
The knowledge, judgment, and critical reasoning acquired through your training and professional experiences
- Evidence (external and internal)
The best available information gathered from the scientific literature (external evidence) and from data and observations collected on your individual client (internal evidence)
- Client/patient/caregiver perspectives
The unique set of personal and cultural circumstances, values, priorities, and expectations identified by your client and their caregivers

When all three components of EBP are considered together, clinicians can make informed, evidence-based decisions and provide high-quality services reflecting the

interests, values, needs, and choices of individuals with communication disorders” (ASHA, 2020, <https://www.asha.org/Research/EBP/Evidence-Based-Practice/>)

Thus, decision-making in EBP is not strictly confined to the issue of research evidence, but also takes into account the expertise of the clinician and family / patient preferences and values.

To summarize, currently accepted definitions of EBP indicate that research should be used, when available, as an important source of evidence to guide clinical and educational decision- making, but other factors must be considered as well. These factors include: clinical expertise based on experience; educational and clinical data about effectiveness of practices; family preferences; individual differences in children and families; and when appropriate, feedback from the client as to the effectiveness of the practices.

Following these definitions, research and the evidence base for the SCERTS Model Practice in the SCERTS model is based on evidence from multiple sources. Efficacy of implementation of practices in the SCERTS Model is supported by empirical evidence from contemporary treatment research in Autism Spectrum Disorders (ASD) and related disabilities. Currently, federally funded, large sample research has been published and longitudinal studies continue that specifically address the effectiveness of SCERTS as a comprehensive treatment framework. The emphasis of current research is to demonstrate the effectiveness of SCERTS for infants, toddlers and school age students in home, school and community settings. This body of research is summarized below. Second, it is rooted in research on child development as well as research addressing the core challenges of ASD. Third, it incorporates the documentation of meaningful change through the collection of clinical and educational data, and programmatic decisions are made based on objective measurement of change. Finally, given that it is not an exclusive model, evidence-based practices (i.e., focused intervention strategies) from other approaches are easily infused in a program plan for an individual.

Empirical Research on the Efficacy of The SCERTS Model

In recent years a number of studies have been published that highlight the efficacy of the SCERTS model. Two randomized controlled trials have been published demonstrating the efficacy of the SCERTS Model in the home and classroom settings. The first randomized trial adapted the SCERTS framework for delivery within early intervention settings (Wetherby et al., 2014). Specifically, this study examined the effectiveness of the model when implemented by parents for toddlers with ASD within natural settings. Eighty-two autistic children aged 19 months (SD = 1.93 mos) participated in a 9-month longitudinal study with their primary caregiver. Children were randomized into two groups – an individual coaching format and a group coaching format, both focused on teaching parents how to support active engagement within natural contexts using the SCERTS framework. Individual coaching consisted of in-home support from an interventionist 2-3 times weekly using a collaborative coaching model to build parent capacity and independence in implementation of supports within natural routines geared at facilitating SC and ER development. Parents in this condition were encouraged to deliver intervention by embedding evidence-based strategies for their child’s SC and ER targets in everyday activities for at least 25 hours. This is consistent with the SCERTS Model

recommendations. Results found individual coaching was more efficacious than the group-based format. Outcomes for social communication, receptive language, and adaptive behavior reached statistical significance (Wetherby et al., 2014)., all core challenges associated with ASD as well as areas frequently identified by clients and families as high priorities.

The efficacy of the SCERTS Model in school-aged settings was the focus of another large longitudinal randomized control trial. Morgan et al. (2018) conducted a cluster randomized controlled trial for 197 diverse students with ASD in 129 classrooms across 66 schools in the US. Mean age of the students was 6.76 years (SD = 1.05years). Classrooms were randomly assigned to the Classroom SCERTS Intervention (CSI) or Autism Training Modules (ATM), the “business as usual” condition. Special education and general education teachers assigned to the CSI condition in this study were trained on the model and provided coaching throughout the school year. ATM teachers engaged in usual school-based educational practices and had access to online training resources related to autism treatment practices. Notably, in this study active engagement was used as an outcome measure and was measured by the Classroom Measure of Active Engagement (CMAE; Harrison, 2015; Morgan, Wetherby & Holland, 2010). Additional outcome measures examining adaptive behavior, social skills, and ratings of executive functioning were also used.

Results of Morgan et al. (2018) revealed that students in the CSI condition showed statistically significant better outcomes on observed measures of adaptive communication, social skills and executive functioning than students within the ATM condition. These data demonstrate the positive impact of SCERTS within a natural environment, that is, the classroom setting, for a heterogeneous sample of students with ASD (Morgan et al., 2018). This study was chosen by the Interagency Autism Coordinating Committee of the US National Institutes of Health for their 2018 Summary of Advances in Autism Spectrum Disorder Research Report (IACC, 2018) as a key study addressing the question “Which treatments and interventions will help?” In their review, the Committee highlighted that 70 percent of teachers trained in CSI implemented with fidelity indicating scalability of the model and also reflecting feasibility with teacher commitment to the model. They also acknowledged that this is one of the largest studies to measure the effect of school-based active engagement intervention in children with ASD and that the results appear generalizable to a diverse population (IACC, 2018).

The prioritization of active engagement as a measure of effectiveness for educational programs for children with ASD aligns with work by Sparapani and colleagues (2015) that identifies the challenges students diagnosed with ASD face in terms of maintaining active engagement and the resulting impact on learning and educational outcomes. In fact, results suggest typically students with autism actively engage less than half of the time in the classroom (Sparapani, Morgan, Reinhardt, Schatschneider, & Wetherby, 2016). Consideration of this finding in the context of additional research suggests that increasing active engagement is critical to positive educational outcomes in ASD and reveals a clear need for approaches such as SCERTS that focus on active engagement (National Research Council, 2001).

International Research- The SCERTS Model has also been the object of international study. A study implemented in Hong Kong examined the effectiveness of the SCERTS Model for children with ASD (Yu & Zhu, 2020). This study examined the implementation of SCERTS for 2

different durations (5 months versus 10 months) for children with an average age of 53 months in preschool settings. Special education teachers, occupational therapists, speech pathologists, and physiotherapists were recruited from 10 special childcare centers in Hong Kong. Participating professionals received initial training and then were provided coaching throughout the school year. Each participating special education teacher taught 5-7 children. Results showed that participating children improved significantly in their social communication and emotional behavior after intervention. In Pakistan, Fiaz and Rehman (2020) studied the implementation of SCERTS for 30 children aged 3.1 to 6.0 years (mean age 4.1 yrs) over a 9 month period. Based on independent pre- and post-intervention measures in socialization and language, they concluded that “significant improvement was observed in the participating children in multiple areas after SCERTS model intervention”, and that the “present study showed that children who received the intervention demonstrated considerable betterment in areas that are related to the core deficits in ASD”. In a special project in Japan, Fukuzawa (2019) demonstrated that SCERTS increased students’ active participation, attesting to the efficacy of using the SCERTS model in the classroom.

The SCERTS Model has also been the subject of a multiple case study design (O’Neill et al., 2010). Implementation of SCERTS in this study followed a multi-disciplinary team training for the teams of four pupils. All four pupils made progress in Joint Attention, Symbol Use, Mutual Regulation, and Self-Regulation as well as in other measures of receptive communication, expressive communication, play, and coping skills. Qualitative methods were used to gain insights from the staff related to their experiences in implementing SCERTS. Central findings from the focus groups with the multidisciplinary team members revealed increased understanding of emotional regulation as a developmental construct, as well as increased clarity of team member roles in supporting children when dysregulated.

Researchers in the United Kingdom (Molteni, Guldberg, & Logan, 2013) also examined the feasibility of implementing SCERTS as an ecologically valid model in an independent residential school. This study aimed to understand how teams work together while learning to implement the SCERTS Model. At the conclusion of the study, 89% of the team members said they felt comfortable using SCERTS and 78% said the framework improved teamwork in collaborating with colleagues. Specifically, teams highlighted that the quality and accuracy of assessment improved collaboration and understanding of students and their environment. In New Zealand, Ministry of Education research on implementation of SCERTS found that the use of the SCERTS Framework for the Early Intervention (0-6 yrs) ASD project developed and supported practitioner knowledge and skills, and provided a collaborative model for professional learning and development (Disley et al., 2011).

Summary

The SCERTS Model meets criteria for evidence-based practice based on definitions of APA and ASHA and offers a framework to directly address the core challenges of ASD, focusing on building an individual's capacity to initiate communication with a conventional symbolic system and to be actively engaged in emotionally satisfying relationships based on effective reciprocal communication. Emotional regulation goals focus on capacities to regulate attention, arousal and emotional state to cope with everyday stresses in life, and therefore, to be most available for learning and engaging. Transactional supports are identified, developed and implemented to support individuals of all ages in social engagement and learning, to promote generalization of acquired abilities, and to support their caregivers service providers. The model provides a roadmap for individualized education and treatment based on a person's strengths and needs guided by research on child and human development. The SCERTS Model was designed to motivate professionals and families to focus their efforts on enhancing quality of life by addressing the core challenges faced by autistic children, adults and their caregivers, and therefore, to move the field to a new generation of more integrated, comprehensive programs.

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*This document is current as of July, 2020. It will be updated as more research on the evidence-base of SCERTS becomes available.