



Examining the Effects of the Center on Secondary Education for Students with Autism Spectrum Disorder

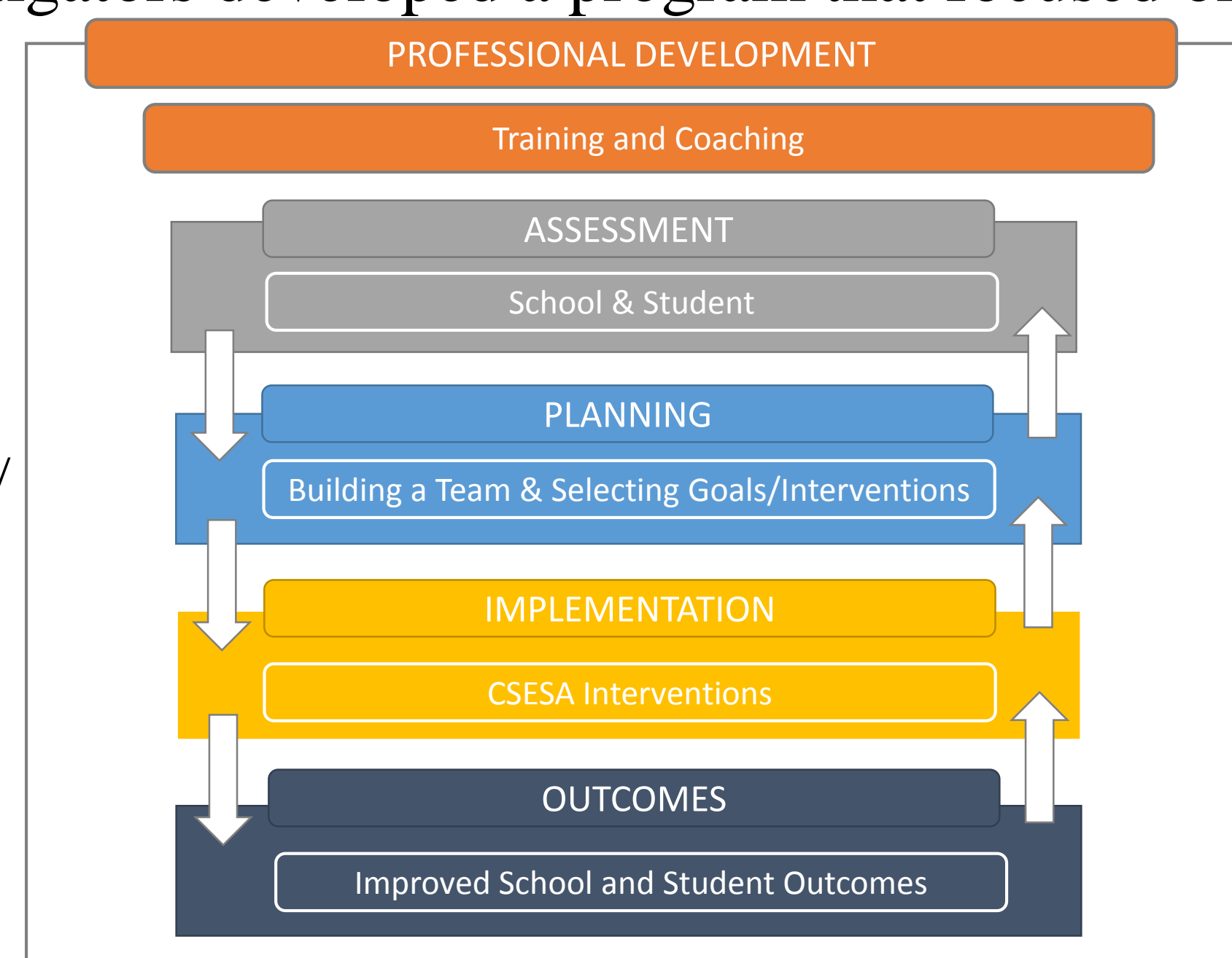


Kara Hume¹, Samuel L. Odom¹, Jessica Steinbrenner¹, Leann Smith², Laura Hall³, Bonnie Kraemer³, & Brianne Tomaszewski¹

¹Frank Porter Graham Child Development Institute, University of North Carolina, Chapel Hill
²Waisman Center, University of Wisconsin, Madison, ³San Diego State University, San Diego, CA

About CSESA

Adolescents and young adults with autism spectrum disorders (ASD) have among the poorest post-secondary outcomes of any group with disabilities (Taylor & Selzer, 2010). The Center on Secondary Education for Student with Autism (CSESA) was designed to address the needs of adolescents enrolled in public high school programs. CSESA investigators developed a program that focused on academics, independence and behavior, peer social interaction, and transition/families (Odom et al., 2014). An autism team in high schools implemented the CSESA program over a two-year period. CSESA research staff provided professional development to support implementation. To determine the efficacy of the project, CSESA investigators conducted a randomized control trial.



Research Questions

1. What is the efficacy of the CSESA model on the quality of high school programs for students with autism?
2. What is the efficacy of the CSESA model on student and family outcomes?
3. How does school district moderate the effects of CSESA model?

Participants

- 60 high schools located in NC, CA, and WI
- 546 adolescents with ASD and their families
 - M=16.1 years old; 85% of the students were male; 48% of the students were racial/ethnic minorities
- IQ performance on a nonverbal IQ test indicated a mix of students with and without intellectual disability

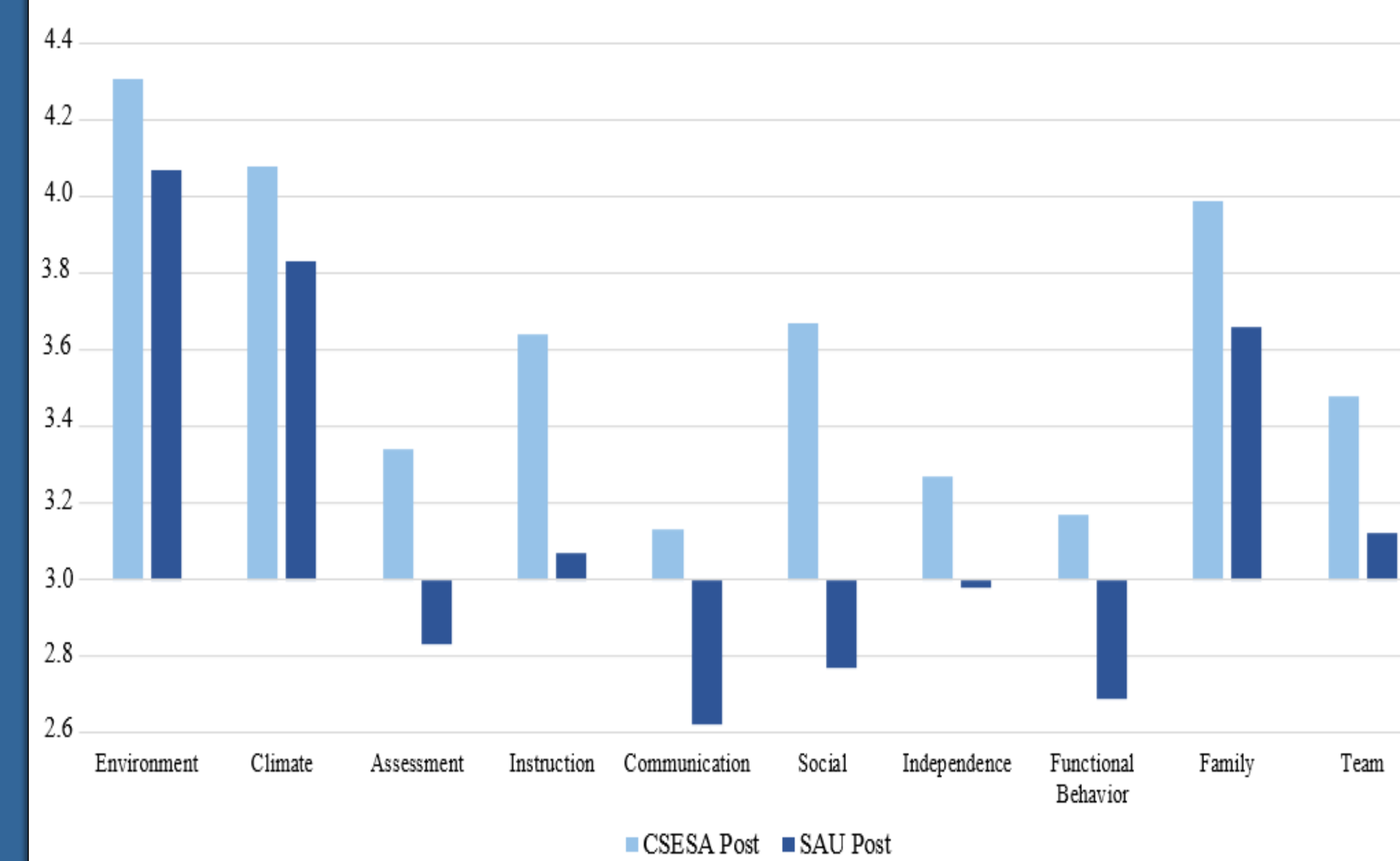
Measures

- Assessments were given at the beginning of the study and again at the end of the two-year period. These included: Autism Program Environment Rating Scale (APERS; Odom et al., 2018), two subscales of the Woodcock-Johnson literacy measure, the Vineland Adaptive Behavior Scale, Social Responsiveness Scale (SRS), AIR Self-Determination Scale, Support Intensity Scale, and the Family Empowerment Scale.
- In addition, the Goal Attainment Scale was used to assess outcomes closely related to curricula was included and measured progress on goals related to the four domains: Academic, Independence & Behavior, Peer & Social Competence, and Transition & Families.

School-Level Results (APERS)

Purpose: To look at environmental features and supports school has in place and areas for improvement.
Procedures: APERS consists of observation, interviews, and record reviews.
Results: Overall effect for APERS at Post-test (3.64 CSESA, 3.2 SAU) $F(1, 52) = 16.6, p < .001, \eta^2 = .24, d = 1.12$

Post-Test Domain Differences



Assessment ($p = .003, d = .793$), Instruction ($p < .001, d = .974$), Communication ($p = .009, d = .688$), Social ($p < .001, d = 1.43$), Functional Behavior ($p = .016, d = .683$), Teaming ($p = .010, d = .701$), Academic ($p < .002, d = .846$), Independence ($p < .010, d = .686$)

Student/Family Level Results

- An intent-to-treat analysis was conducted using a 3-level Hierarchical Linear Model to assess main effects as well as moderators.
- There was a significant interaction between the Family Empowerment Scale with School District
- There was a significant main effect on Goal Attainment Scale-Social and significant interaction between Goal Attainment Scale-Transition with School District.
- There were no significant differences across the CSESA and SAU conditions on standardized measures of academic, social, and adaptive behavior outcomes.

Significant Interaction Effects Between School District and Intervention

	Overall Intervention Main Effects			Interactions of School District with Intervention		
	Coeff. (se)	T-value	P-value	χ^2	df	P-value
SRS	.29 (1.29)	.24	.82	31.75	19	.03
Supports Intensity Scale	-.05 (.10)	-.48	.63	31.09	18	.02
Family Empowerment Scale	.86 (2.05)	.42	.69	31.1	16	.01

Goal Attainment Scale(GAS) Results

	Overall Intervention Main Effects			Interactions of School District with Intervention		
	Coeff. (se)	T-value	P-value	χ^2	df	P-value
GAS-Social	.36(.13)	2.69	.02	6.84	8	>.50
GAS-Transition	.16(.30)	.54	.60	28.45	8	<.01

Implementation Index

Methods

- Implementation data were collected in CSESA and SAU schools for seven features of the CSESA intervention: (1) intervention component training, (2) coaching, (3) school planning, (4) school teaming, (5) school-level intervention component quality, (6) student planning, and (7) student-level intervention component dosage.
 - Implementation data was converted to a 0-3 scale for each feature, weighted, and combined into a final index score
- ### Results
- Implementation index scores were significantly different for CSESA (mean=2.07, SD=0.38) and SAU (mean=0.47, SD=0.17) schools ($t=28.13, p < 0.001, d_{Cohen} = 5.43$)

Conclusions

- Findings indicate that CSESA schools had significantly higher quality than SAU schools, and CSESA students made significantly more progress on their social goals than SAU students.
- When school district was used as a moderator, significant between group differences on adjusted (based on pre-test) post-test means were found on the SRS, Supports Intensity Scale, Family Empowerment Scale and Goal Attainment Scale-Transition domain.
- Findings reflect challenges related to the complexities of school-based research, the nuances of working in high school settings, and the difficulty in measuring/capturing meaningful change in this population.

References

Odom, S. L., Cox, A., Sideris, J., Hume, K. A., Hedges, S., Kucharczyk, S., ... & Neitzel, J. (2018). Assessing quality of program environments for children and youth with autism: Autism Program Environment Rating Scale (APERS). *Journal of Autism and Developmental Disorders*, 48, 913-924.

Odom S. L., Duda, M. A., Kucharczyk, S., Cox, A. W., & Stabel, A. (2014). Applying an implementation science framework for adoption of a comprehensive program for high school students with autism spectrum disorder. *Remedial and Special Education*, 35, 123-132.

Taylor, J. L., & Seltzer, M. M. (2010). Changes in the autism behavioral phenotype during the transition to adulthood. *Journal of Autism and Developmental Disorders*, 40, 1431-1446.

Acknowledgments

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education through Grant R324C120006 awarded to UNC-Chapel Hill. The opinions expressed represent those of the authors and do not represent views of the Institute or the U.S. Department of Education.