



Examining Treatment Implementation in Secondary Education Settings for Students with ASD



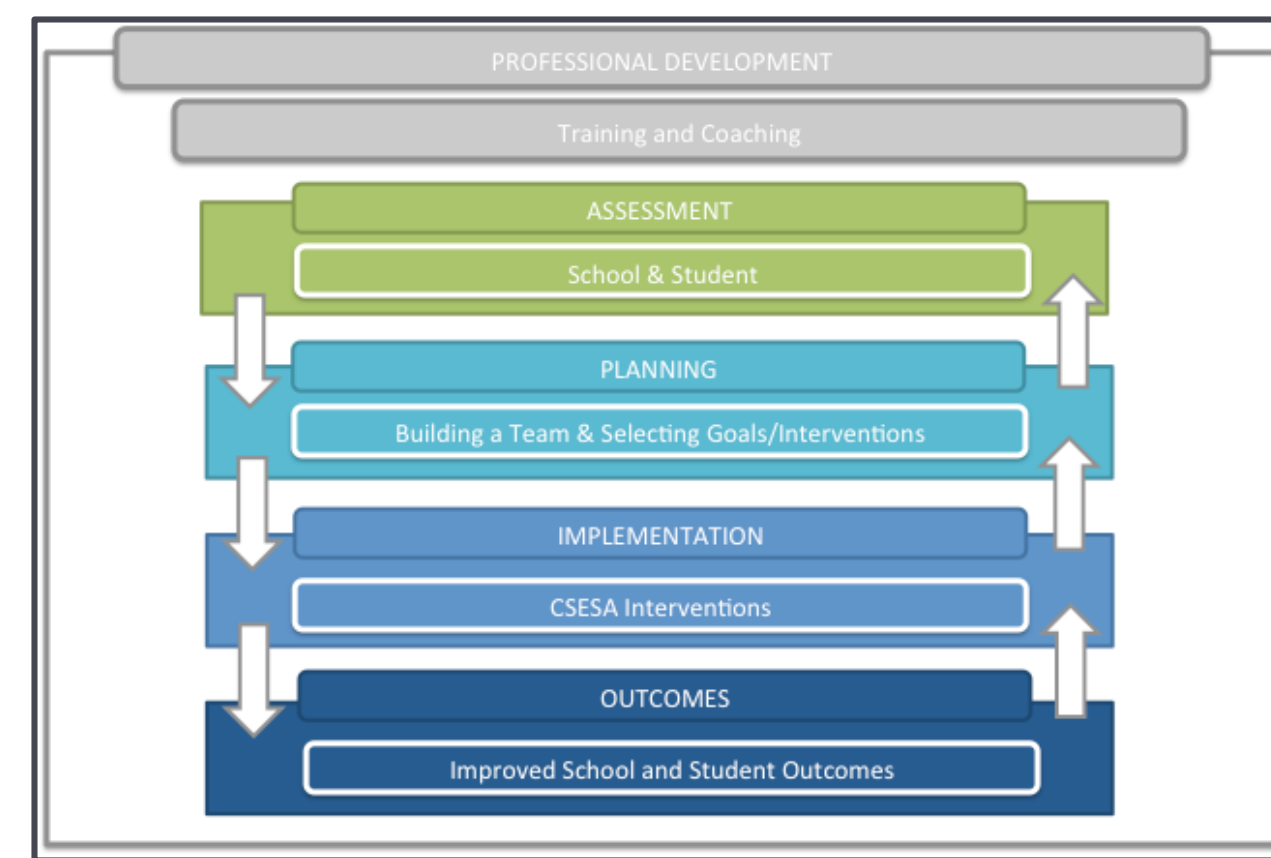
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About CSEA

The Center on Secondary Education for Students with Autism Spectrum Disorder (CSEA) is a 5-year research and development project that focuses on developing, adapting, and studying a comprehensive school- and community-based education program for high school students on the autism spectrum. The CSEA Model consists of the 5-phase CSEA **process** (see diagram below) that addresses 4 CSEA **domain areas** using 11 CSEA **interventions** (see implementation section).



Background

CSEA is a complex social intervention and requires thorough measurement of implementation, including an assessment of project resources (e.g. training and coaching), project activities (e.g. implementation of CSEA interventions), and project outcomes (e.g. student performance on standardized measures).

With consultation from Dr. Dave Cordray, the CSEA team developed an implementation index that includes:

- Individual fidelity measures per component designed to:
 - Measure adherence, dosage, and quality of delivery for each component
 - Differentiate between CSEA and non-CSEA interventions (counterfactual)
- Process fidelity measure designed to:
 - Capture the larger CSEA process including professional development, assessment, planning, implementation, and outcomes

Research Question

The pilot years of the study were used to develop and assess the fidelity tool to capture the complex, comprehensive intervention program. The research question was:

Do CSEA fidelity measures discriminate between sites implementing and not implementing program features?

Participants

- 6 schools across 5 different states
- **School staff (n=56)**
 - Autism team of special education teachers, general education teachers, administrators
- **Students (n=43)**
 - 6-8 per school
 - Educational label of autism

Grade	9 th	10 th	11 th	12 th	Other	
N=43	7	9	14	11	2	
Race/ Ethnicity	AI/AN	BI/AA	Multi-racial	White	Other	Hispanic
N=43	2	2	3	34	2	8
HH Income	<20K	20-39K	40-59K	60-79K	80-99K	>99K
N=37	3	9	8	5	4	8

Study Design

- Researchers used a contrasting features design, in which each site served as both an intervention and control for different features (domains) of the CSEA Model
- Each of the four CSEA domains were designated to be piloted at 3 different sites in order to assess every possible combination of the CSEA domains

	NC-1	NC-2	TN	TX	WI	CA
Academic		X		X		
Independence & Behavior	X			X	X	
Peer & Social Competence	X		X			X
Transition & Families		X	X		X	

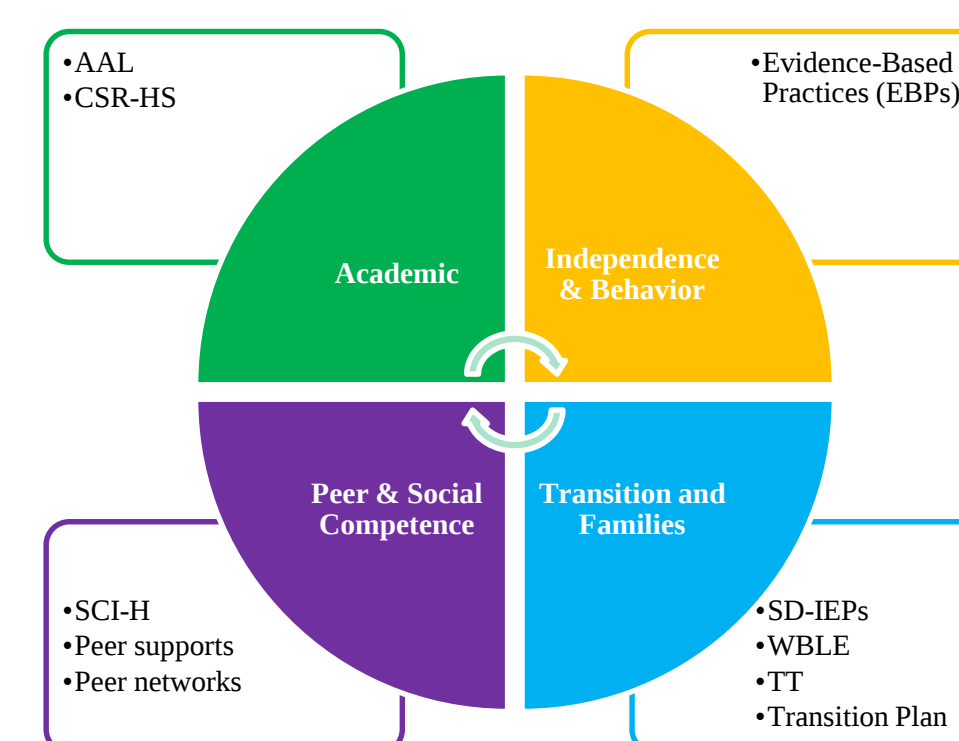
CSEA Implementation

Autism team members at schools received the following **RESOURCES** across a 1 year period:

- **TRAINING**
 - Introduction to CSEA training
 - Goal Attainment Scale training
 - CSEA Intervention trainings

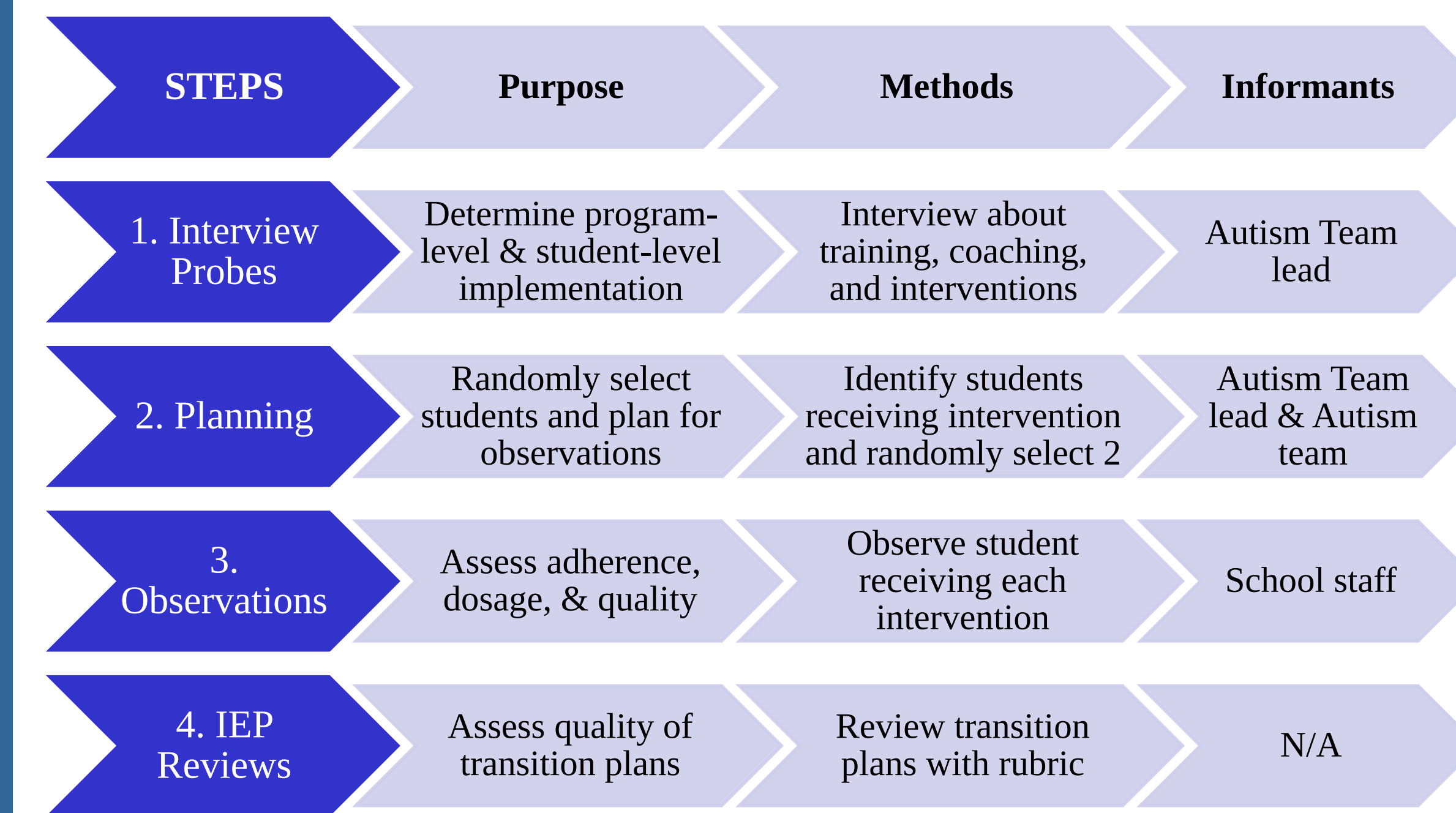
- **COACHING**
 - Goal Attainment Scale
 - CSEA Interventions

- **MATERIALS**
 - Intervention manuals
 - On-line resources



Fidelity Procedures

- The implementation index was administered by project staff in 4 steps to gather data about .



Fidelity Measures

Key Features

AVOID BIAS: Determine all students who receive a given intervention and randomly select one student accessing state-wide and alternate assessments

Interview Chart	Access to Assessment	Academic	IEB	Peer & Social	Transition & Families
1	AA	SW			
2					
3					
4					
5					
6					
7					
8					

STUDENT-LEVEL QUESTIONS	Yes	No
Academic Programming		
1. Do any of the students enrolled in the study receive specific instruction or support focused on reading, comprehension or content area content?	①	②
Independence and Behavior Programming		
2. Do any of the students enrolled in the study receive specific instruction or support focused on adaptive skills or independence (e.g. use of visual supports or technology)?	①	②
3. Do any of the students enrolled in the study receive specific instruction or support focused on planning, managing, or organizing thinking?	①	②
4. Do any of the students enrolled in the study receive specific instruction or support focused on social competence, such as involvement in a social club/group?	①	②
Social Programming		
5. Are any of the students enrolled in the study receiving support interacting with peers in non-classroom based settings (e.g. lunch clubs/tables, sports teams, etc.)?	①	②
6. Are any of the students enrolled in the study receiving support interacting with peers in non-classroom based settings (e.g. lunch clubs/tables, sports teams, etc.)?	①	②
Transition and Families Programming		
7. Do any of the students enrolled in the study receive support through a parent education program?	①	②
8. Do any of the students enrolled in the study participate in work-based learning experiences such as school-based jobs, volunteering, job sampling, internship, and/or community employment?	①	②
9. Have any of the students enrolled in the study received specific instruction or support related to self-directed learning?	①	②

ASSESS PROGRAM AND INDIVIDUAL: Measures school-level (e.g., training, coaching) and student-level implementation (individual fidelity observations)

TH	Domain	Features	Message	Notes			
1	Frequency	How often in the past two weeks has this student received this intervention?	Yes/No		0	1	2
2	Amount	On average, how long does each of the sessions last?	Yes/No		0	1	2
3	Duration	For how long has this student received this intervention?	Yes/No		0	1	2
4	Participants	1) Number of students who participated in the intervention. 2) Number of students who did not participate in the intervention.	Yes/No		0	1	2
5	Modality	1) Format of the intervention (e.g., individual, group, etc.). 2) Location of the intervention (e.g., classroom, etc.).	Yes/No		0	1	2
6	Intervention	1) Description of the intervention. 2) Description of the intervention (e.g., social skills, etc.).	Yes/No		0	1	2
7	Modality	1) Format of the intervention (e.g., individual, group, etc.). 2) Location of the intervention (e.g., classroom, etc.).	Yes/No		0	1	2
8	Intervention	1) Description of the intervention. 2) Description of the intervention (e.g., social skills, etc.).	Yes/No		0	1	2
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CONSISTENCY OF MEASURES: Observation measures for individual interventions designed on a consistent scale (0 – 3) examining similar categories of features (e.g., dosage, preparation & structure, process, strategies)

Findings

The data indicate clearly that the CSEA fidelity measures discriminate between the CSEA and contrast conditions. The structured social skills group, SCI-H, had the highest level of implementation, with work based learning (WBLE) implemented at the lowest level. The transition plans were most similar across the CSEA and contract conditions.

DOMAINS	INTERVENTIONS	CSEA	CONTRAST
ACADEMIC	AAL	2.82	.36
	CSR-HS	2.38	.38
INDEPENDENCE & BEHAVIOR	PRISM	1.75	0
PEER & SOCIAL COMPETENCE	Peer Networks	2.10	.45
	Peer Supports	2.05	0
	SCI-H	2.82	0
TRANSTION & FAMILIES	SI-IEP	1.95	0
	Transition Plans	1.89	1.7
	TT	2.56	0
	WBLE	1.31	.17

Conclusion

- The measure of implementation of complex social interventions must be systematic and should include clear specification of the intervention model (including identifying project resources and activities, as well as methods to measure all aspects).
- Fidelity measures should measure intervention components in the control condition, as demonstrated in this examination.
- The implementation index is currently in use the RCT of CSEA across 60 schools in three states.

References

- Cordray, D. (2008). Assessing intervention and control conditions in RCTs: Concepts and methods. Presentation for the IES/NCER Summer Research Training Institute: Cluster-Randomized Trials
- Nelson, M. C., Cordray, D. S., Hulleman, C. S., Darrow, C. L., & Sommer, E. C. (2012). A procedure for assessing intervention fidelity in experiments testing educational and behavioral interventions. *The journal of behavioral health services & research*, 39(4), 374-396.

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