

A Comprehensive Approach to Supporting Students With ASD in High School

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About CSESA

- Research & Development Center
- Funded by the Department of Education (IES)
- Purpose: To develop and study a comprehensive high school program for students on the autism spectrum





The Goal of CSESA

To improve post-secondary outcomes for students by using high quality professional development and evidence-based interventions to support practitioners, families, and students







Original CSESA Collaborators

VANDERBILT KENNEDY CENTER for Research on Human Development









THE UNIVERSITY OF TEXAS





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www.facebook.com/csesa.asd





Autism in High Schools





U.S. Department of Health and Human Services Centers for Disease Control and Prevention

- 14.9 million students in U.S between 9-12 grades
- 14.9m x (1 in 68) =

219,118



What Are the Outcomes for Young Adults with Autism

What happened to young adults with autism between high school and their early 20s?



National Autism Indicators Report: Transition into Young Adulthood. A.J. Drexel Autism Institute's Life Course Outcomes Research Program, 2015. drexe.lu/autismindicators



The Big Picture





CSESA By the Numbers

- 1,800 consented participants
- 546 adolescents with ASD
- 30 school districts across 5 states
- 60 schools



- 2,000 hours of professional development (per year)
- 21 peer-reviewed publications
- 55 international, national, state, and local conferences
- 130,000 page views with 27,000 downloads

CSESA Process







- Partner with teams at each high school
 - Provide ongoing training and coaching in the implementation of specific interventions along with associated evidence-based practices
- Plan the implementation across a 2year-period

CSESA Domains



The Center on Secondary Education for Students with Autism Spectrum Disorders



SAN DIEGO STATE UNIVERSITY Community Resource Map



COMMUNITY RESOURCE for high school students with Autism Spectru Updated 11.06.14

CSESA School Planning- Middle Creek HS

| | Year 1 – Fall | Year 1 - Spring | Year 2 – Fall | Year 2 - Spring |
|-----------------------------|--|--|--|---|
| Professional Development | Intro to CSESA-9/5/14 Intro to ASD-9/5/14 GAS training-11/19/14, 2:30-4:30 for special ed portion of A-team Core Component trainings Peer Support (PLTs? Planning periods) Peer Network (PLTs? Planning periods) SD-IEP (PLTs? Planning periods) | Core Component trainings Transition Planning Training PRISM (PLTs? Planning periods) See Fall if not completed EBP Trainings (as needed) SCI-H Training at the end of semester to prepare for Spring (social skills groups) | Review: Intro to ASD (as needed) Core Component trainings Transitioning Together Parent/Teen groups (Community person?) Work Based Learning Experiences (PLTs? Planning periods) SCI-H Training EBP Trainings (as needed) | Core Component trainings Collaborative Strategic Reading Alternate Achievement Literacy EBP Trainings (as needed) |
| Assessment | | SSS-C Y1 Post-assessment (meeting) | | APERS SSS-C Y2 Post-assessment (meeting) |
| Planning | Community/School mapping APERS debrief & School planning- 10/29/14 GAS goal development-11/19 Student planning-11/19 | School planning Student planning (if needed) | School planning GAS goal development Student planning | □ APERS debrief & School planning |
| Implementation | Community and School Resource Mapping | Launch implementation Peer Supports Peer Networks PRISM SD-IEP SD-IEP | □ Launch implementation □ Continue implementation from Spring □ TT □ WBLE □ SCI-H | Launch implementation Continue implementation from previous semesters Collaborative Strategic Reading Alternate Achievement Literacy |
| Outcomes | | GAS goals Core Component coaching CSESA Y1 Debrief Y1 Post-assessment (see above) | Core Component coaching | GAS goals Core Component coaching CSESA Y2 Debrief Y2 Post-assessment (see above) |



Comprehensive Treatment Program for High School Students with Autism: Implementation and Efficacy

Samuel L. Odom, Kara A. Hume, Leann Duwalt-Smith, Laura J. Hall, and Bonnie Kraemer

Research Questions Addressed by Efficacy Study

- What is the quality of programs for students with autism in America's high schools?
- Can a comprehensive model for secondary education for student with autism change the quality of high school programs for students with autism?
- How does one assess implementation of a complex services model?

Efficacy Study of CSESA: Progress to Date

- Study Completed
- Analysis of Program Quality Data Completed
- Student Performance Data Being Entered
- Program Implementation Data in Process:
 - Measure created
 - Data collected and being entered



Nature of the Sample

- 60 High Schools
 - 20 North Carolina
 - 20 Wisconsin
 - 20 California
- 543 High School Students
 - No differences between CSESA and SAU
 - Ethnically/racial diverse sample

| Characteristic | Mean or % (SD) |
|-------------------------|----------------|
| Urbanicity | |
| Rural/Town | 15.0 |
| Suburb | 45.0 |
| City | 40.0 |
| Ethnicity | |
| White, non-Hispanic | 51.3 |
| Hispanic | 24.1 |
| Black, non-Hispanic | 13.9 |
| Asian | 6.22 |
| More than 2 races | 3.75 |
| American Indian/Alaskan | .520 |
| | |
| Native Hawaiian | .290 |
| SES(% Title 1 Eligible) | 56.7 |
| School Size | 1890(70.1) |

Student Demographics



| Race & Ethnicity | Hispanic | Non- Hispanic | No ethnicity reported |
|------------------------------------|----------|------------------|--------------------------|
| American-Indian/ Alaskan Native | 4 | 10 | |
| Asian | 0 | 21 | |
| Black/African- American | 2 | 68 | |
| White | 58 | 280 | |
| Multi-racial | 11 | 25 | 1 |
| Other | 18 | 5 | |
| No race reported | 7 | 2 | 34 |

Family Demographics





Student Characteristics

- Wide range of students on the autism spectrum
- Diploma Status
 - 57% Standard Diploma
 - 43% Modified Diploma
- See Demographic Data for more information



| | Mean(SD) | Range |
|--|-------------|------------|
| Social Responsiveness Scale-2 (n=502) | 70.5 (12.3) | 39-110 |
| | | (82% ≥ 60) |
| Vineland Adaptive Behavior Composite Standard Score (n=454) | 75.8 (16.6) | 20-131 |
| Leiter Non-Verbal IQ (n=490) | 85.8 (27.2) | 30-141 |









Assessment: School (APERS)

- **Purpose:** To look at environmental features and supports school has in place and areas for improvement
- Participants: Led by CSESA staff with support and participation from school staff

- **Procedures:** APERS consists of:
 - Observation
 - Interviews
 - Record reviews

Example

| ++• | | | | |
|-----|------------|---|--|---|
| | 27° 6 C | Z Team members consistently over- prompt students during instruction. Team members consistently under- prompt or use no prompts during instruction. When team members use prompts only one form is used with students (e.g., physical, verbal, gestural). | When needed, key team member uses a clear prompting hierarchy during instruction (e.g., less intensive prompts followed by increased support as needed). When needed, key team member uses a variety of prompts during instruction to meet individual student needs (e.g., physical, verbal, gestural). | When needed team members use a clear prompting hierarchy during instruction (e.g., less intensive prompts, graduated guidance, simultaneous instruction), When needed, team members use a variety of prompts to meet individual student needs. |

Current State of Program Quality in U. S. n = 60 High Schools



Urbanicity



Table 3 APERS Means by Program

| APERS Domain | Diploma Program | Modified Diploma |
|---------------------|-----------------|------------------------|
| | Mean(SD)(N=60) | Program Mean(SD)(N=47) |
| Total | 3.17(.462) | 3.24(.536) |
| Environment | 4.13(.620) | 4.01(.665) |
| Climate | 3.87(.802) | 3.96(.778) |
| Assessment | 2.62(.534) | 2.87(.645) |
| Instruction | 3.04(.671) | 3.15(.729) |
| Communication | 2.72(.806) | 2.65(.765) |
| Social | 2.77(.647) | 2.84(.720) |
| Independence | 2.79(.623) | 2.65(.739) |
| Functional Behavior | 2.70(.806) | 2.74(.722) |
| Family | 3.77(.880) | 4.03(.818) |
| Teaming | 3.10(.541) | 3.30(.527) |
| CSESA Transition* | 2.36(.526) | 2.72(.681) |

*p < .001

APERS Scores Transition



Overall Effect for APERS?



F(1, 52) = 16.6, *p* < .001, η² = .24, d = 1.12

Did the CSESA Program Affect Quality?



Standard Program
Modified Program

Diploma: F(1, 54) = 13.9, p < .001, $\eta^2 = .205$, d=1.02, Modified: F(1, 45) = 3.66, p = .063, $\eta^2 = .080$, d=.590,

Adjusted Post-test Scores for Domains



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).

Adjusted Post-test Scores for Diploma



SAU Post CSESA Post

Adjusted Post-test APERS Scores for Modified



SAU Post CSESA Post

Adjusted Post-test Scores for Transition Composite: Diploma and Modified



Standard Diploma Modified Diploma

Total Weighted F(1, 49) = 15.8, p = .021, η^2 = .238, d=1.12,

Modified: F(1, 45) = 5.71, p = .021, $\eta^2 = .120$, d = .739.

Complex Service Interventions (CSI)

- Complex Service Interventions (CSIs) go by many names
 - Socially Complex Service Interventions (Wolff, 2000)
 - Complex Adaptive Systems (Leykum et al., 2007)
- Leaders in implementation science have provided definitions and contrasts to clinical research programs

Studying complex service interventions (Mittman, 2011 at 1st GIC)

Implementation strategies and programs are *complex service interventions* when characterized by:

- Variability and heterogeneity of program (intervention) content across time and place
- Heterogeneity of program implementation across time and place
- Strong contextual influences (leadership, culture, experience/capacity, staff/budget sufficiency), variability and heterogeneity of context across time and place
- Weak main effects (other than for *robust* programs)

| CSI Features (Mcgaghie, 2011; Pawson et al., 2005;) | CSESA |
|---|-------|
| 1. Hypothesis: If you deliver, good outcomes will follow. | + |
| 2. Effects accrue from active input of individuals | + |
| 3. Success is a long journey: depends on cumulative sequence of events and integrity of implementation chain | + |
| 4. CSI is often nonlinear and can go in reverse | + |
| 5. CSIs are embedded in multiple social systems and contexts will have differential effects on outcomes | + |
| CSIs are leaky and prone to be borrowed, delivered in mutating fashion | + |
| 7. CSIs feedback on themselves; they may change the conditions that made them work in the first place | + |

Assessing Implementation: Cordray Model

Assessing Implementation of Education Interventions

**Intervention as designed

**Intervention as implemented

**Complex interventions require multilevel
assessments

Cordray (2007)

Conceptual Model for Implementation Measurement

As part of the model development, the CSESA team developed a multi-component fidelity tool including:

>Individual fidelity measures per component designed to:

- Measure adherence, dosage, and quality of delivery for each component
- Differentiate between CSESA and non-CSESA interventions

➢Process fidelity measure designed to:

Capture the larger CSESA process including professional development, assessment, planning, implementation, and outcomes

Implementation Index Instructions and Forms for CSESA Sites: Evaluation Questions

- In the CSESA Model we need to collect implementation data at multiple levels:
- The school level-
 - Is the CSESA Process being implemented at the school?
 - Is the school receiving the model? (data on the CSESA process)
- The staff level-
 - Is the staff implementing the CSESA interventions as designed? (fidelity data)
 - Is the staff following the CSESA Process? (data on CSESA process)
- The student level-
 - Is the CSESA Process being implemented at the student level? (data on the CSESA process)
 - Is the student receiving the interventions as designed? (fidelity and dosage data)

| Level and Questions | Data Source | Process |
|-------------------------------------|---|----------------------------|
| School | | |
| Is the CSESA | 1.Coaching Log | 1.Hours per week and |
| process being | 2. Coaching Fidelity | activity |
| implemented at the | | 2.Fidelity Rating |
| school? | | |
| Is the school receiving the model? | 1.Professional | 1.Number of Hours of PD |
| | Development (PD) | 2.PD Evaluation by |
| | Training Log | participants |
| Staff | | |
| Is the staff | Fidelity checklists | 1.Three fidelity |
| implementingthe | for each component. | observations at each |
| CSESA | | school. |
| interventions as | | |
| designed?(fidelity | | |
| data) | | - |
| Is the staff following the CSESA | 1.School Planning | 1.Cumulative |
| Process? | Form | 2. APERS Score |
| | 2.APERS Teaming | |
| | Subtest | |
| Students | | |
| Is the CSESA Process being | 1. Secondary School | 1.555C used to identify |
| implemented at the student level? | Success Checklist | needs. |
| | 2. Student | 2. Documentation across |
| | intervention matrix | school of intervention for |
| To the star loss as a factor at the | 4 Charlenterlanding | all students |
| is the student receiving the | 1.5tudent planning | 1.Individual student |
| interventions as designed? | nienu 2 Fidalitumaanuusa | specification of |
| | 2.Fidenty measures | A Moon fidelity setime for |
| | | 2. Mean indenty raung for |
| | | mervenuon student |
| | | Tecerveu. |

| Level and Questions | Data Source | Process |
|------------------------------------|---|------------------------------|
| School | | |
| Is the CSESA | 1.Coaching Log | 1.Hours per week and |
| implemented at the | 2. Coaching Fidenty | acuvity 2 Fidality Dating |
| school? | | 2.Fluenty Raung |
| Is the school receiving the model? | 1.Professional | 1.Number of Hours of PD |
| | Development (PD) | 2.PD Evaluation by |
| | Training Log | participants |
| Staff | | |
| Is the staff | Fidelity checklists | 1.Three fidelity |
| implementingthe | for each component. | observations at each |
| CSESA | | school. |
| interventions as | | |
| designed?(fidelity | | |
| data) | | |
| Is the staff following the CSESA | 1.School Planning | 1.Cumulative |
| Process? | Form | 2. APERS Score |
| | 2.APERS Teaming | |
| | Subtest | |
| Students | | |
| Is the CSESA Process being | 1. Secondary School | 1.555C used to identify |
| implemented at the student level? | Success Checklist | needs. |
| | 2. Student | 2. Documentation across |
| | intervention matrix | school of intervention for |
| | | all students |
| Is the student receiving the | 1.Student planning | 1.Individual student |
| interventions as designed? | menu | specification of |
| | 2.Fidelity measures | interventions |
| | | 2. Mean fidelity rating for |
| | | intervention student |
| | | received. |

| Level and Questions | Data Source | Process |
|------------------------------------|---|-----------------------------|
| School | | |
| Is the CSESA | 1.Coaching Log | 1.Hours per week and |
| process being | 2. Coaching Fidelity | activity |
| implemented at the | | 2.Fidelity Rating |
| school? | | |
| Is the school receiving the model? | 1.Professional | 1.Number of Hours of PD |
| | Development (PD) | 2.PD Evaluation by |
| | Training Log | participants |
| Staff | | |
| Is the staff | Fidelity checklists | 1.Three fidelity |
| implementingthe | for each component. | observations at each |
| CSESA | | school. |
| interventions as | | |
| designed? (fidelity | | |
| data) | | |
| Is the staff following the CSESA | 1.School Planning | 1.Cumulative |
| Process? | Form | 2. APERS Score |
| | 2.APERS Teaming | |
| | Subtest | |
| Students | | |
| Is the CSESA Process being | 1. Secondary School | 1.555C used to identify |
| implemented at the student level? | Success Checklist | needs. |
| | 2. Student | 2. Documentation across |
| | intervention matrix | school of intervention for |
| | | all students |
| Is the student receiving the | 1.Student planning | 1.Individual student |
| interventions as designed? | menu o Ei deliberro e error | specification of |
| | 2.Fidelity measures | Interventions |
| | | 2. Mean fidelity rating for |
| | | intervention student |
| | | receivea. |

Analysis of Implementation: A Portfolio Or a Number?

| Level and Questions | Data Source | Perfect Score | ActualScore | Percentage |
|--|---------------------------|--|--------------------------------|------------|
| School | | | | |
| Is the CSESA process | 1.Coaching Log | Mean of 6 hours per | 1. Mean = 4.9 | 1.82% |
| being implemented at | 2. Coaching Fidelity | school | hours | 2.87% |
| the school? | | 2. Mean of 3.0 | 2. Mean = 2.6 | |
| Is the school receiving the model? | 1.Professional | Mean of 60 hours of | 1. Mean = 49 | 1.81% |
| | Development (PD) | professional development | hours | 2.92% |
| | Training Log | 2. Mean rating 4.0 | 2. Mean = 3.67 | |
| Staff | | | | |
| Is the staff | 1.Fidelity checklists for | Mean rating of 3.0 | Mean = 2.5 | 1. 83% |
| implementing the | each component. | across meas. | | |
| CSESA interventions as | | | | |
| designed? (fidelity | | | | |
| data) | | | | |
| Is the staff following the CSESA Process? | 1.School Planning Form | School employed 100% | Mean = 90% | 1.90% |
| | 2.APERS Teaming | of items | 2. Mean APERS | 2.84% |
| | Subtest | 2. Mean APERS Score of | = 4.2 | |
| | | 5.0 | | |
| Students | | | | |
| Is the CSESA Process being implemented | 1. Secondary School | 1.100% of assessments | 1. Mean = 98% | 1.98% |
| at the student level? | Success Checklist | conducted | 2. Mean = 66% | 2.66% |
| | 2. Student intervention | 2.100% of student | | |
| | matrix | received all interventions | | |
| | | | | |
| Is the student receiving the interventions | 1.Student planning | 1. Individual | 1. Mean = 89% | 1.89% |
| as designed? | menu | interventions specified for | 2. Mean = 2.6 | 2.87% |
| | 2.Fidelity measures | 100% of students | | |
| | _ | 2. Mean fidelity rating of | | |
| | | 3.0 of interventions | | |
| | | student received | | |

Mean =85.3% (Hypothetical)