CSESA

The Center on Secondary Education for Students with Autism Spectrum Disorders

A Comprehensive Approach to Supporting Students With ASD in High School

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Beginning with Acknowledgements and Thanks You

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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

CSESA
The Center on Secondary Education for Students with Autism Spectrum Disorders

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

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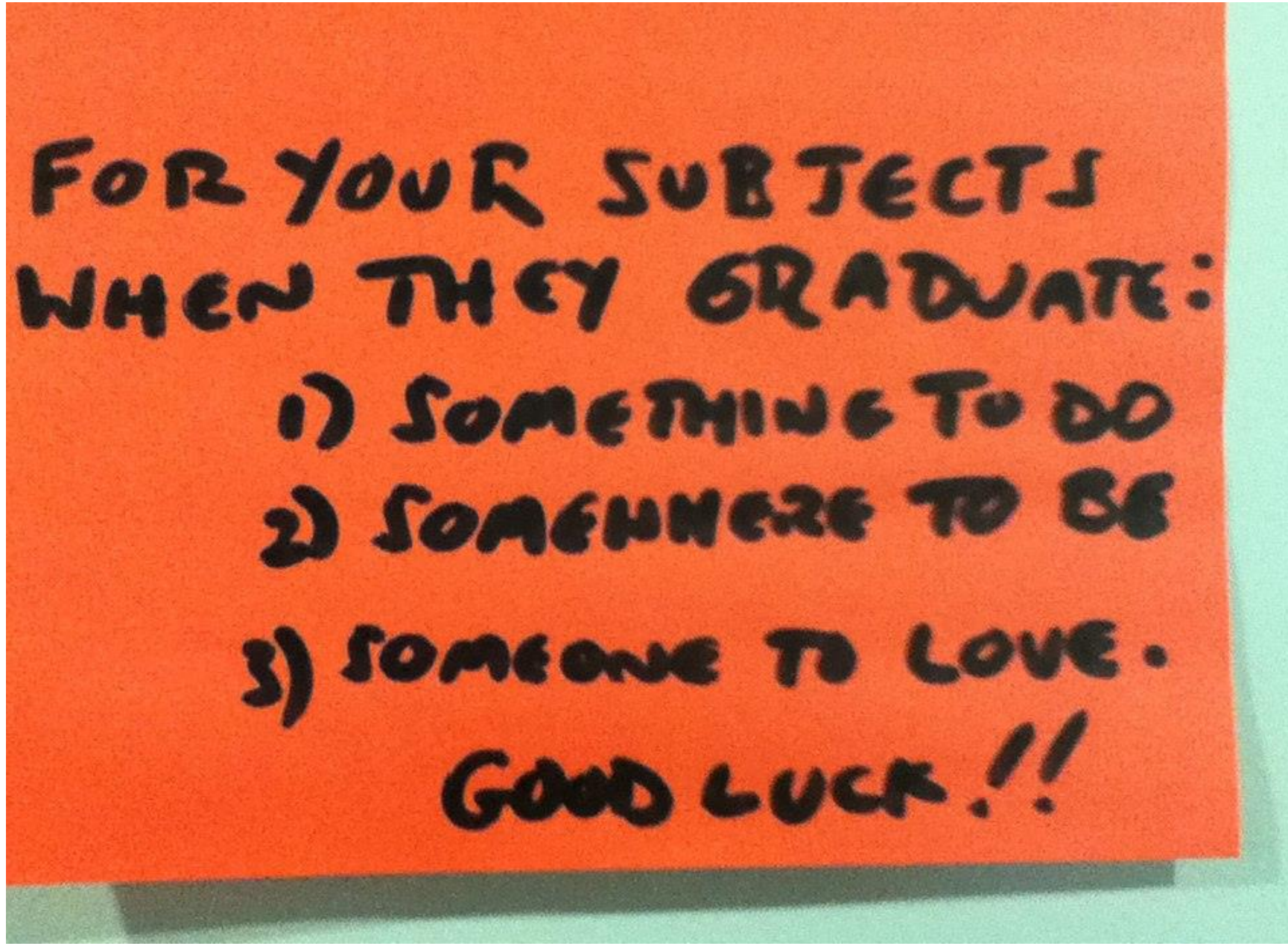
FOR YOUR SUBJECTS
WHEN THEY GRADUATE:
1) SOMETHING TO DO
2) SOMEWHERE TO BE
3) SOMEONE TO LOVE.
GOOD LUCK!!

Original CSESA Collaborators

VANDERBILT
KENNEDY CENTER
for Research on Human Development

SAN DIEGO STATE
UNIVERSITY

UNC CHARLOTTE

UNC
FRANK PORTER GRAHAM
CHILD DEVELOPMENT INSTITUTE

UCDAVIS
MIND INSTITUTE

THE UNIVERSITY OF
TEXAS
AT AUSTIN

WAISMAN CENTER
UNIVERSITY OF WISCONSIN-MADISON
University Center for Excellence in Developmental Disabilities

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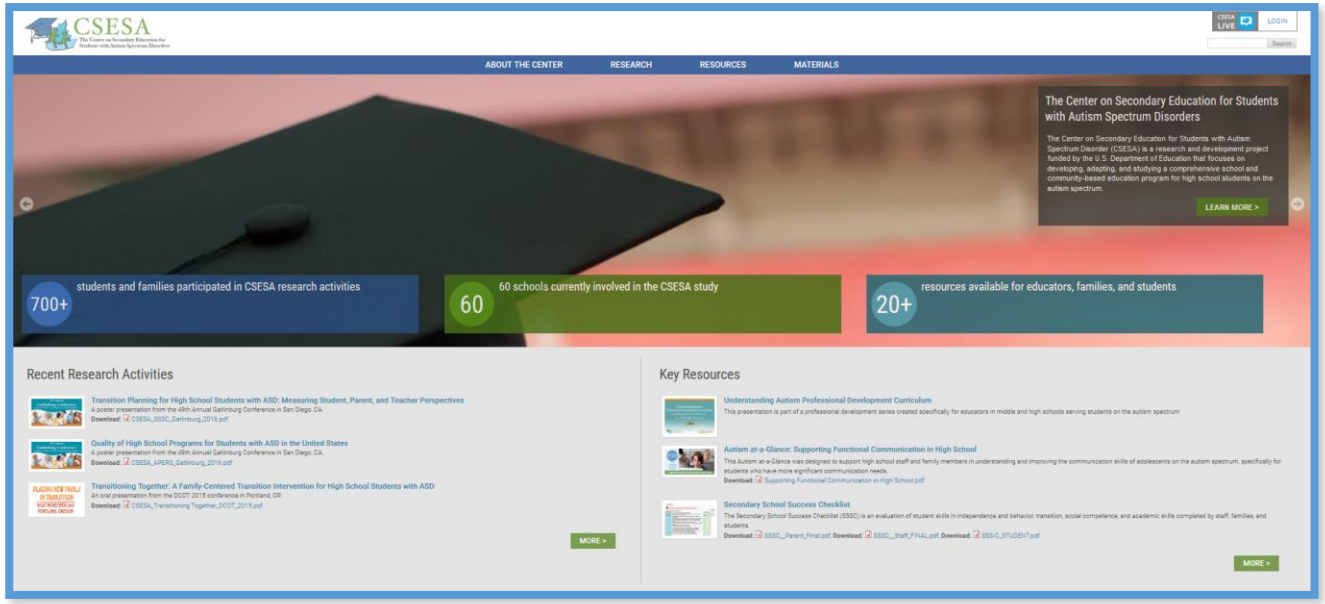
http://csesa.fpg.unc.edu/



www.facebook.com/csesa.asd

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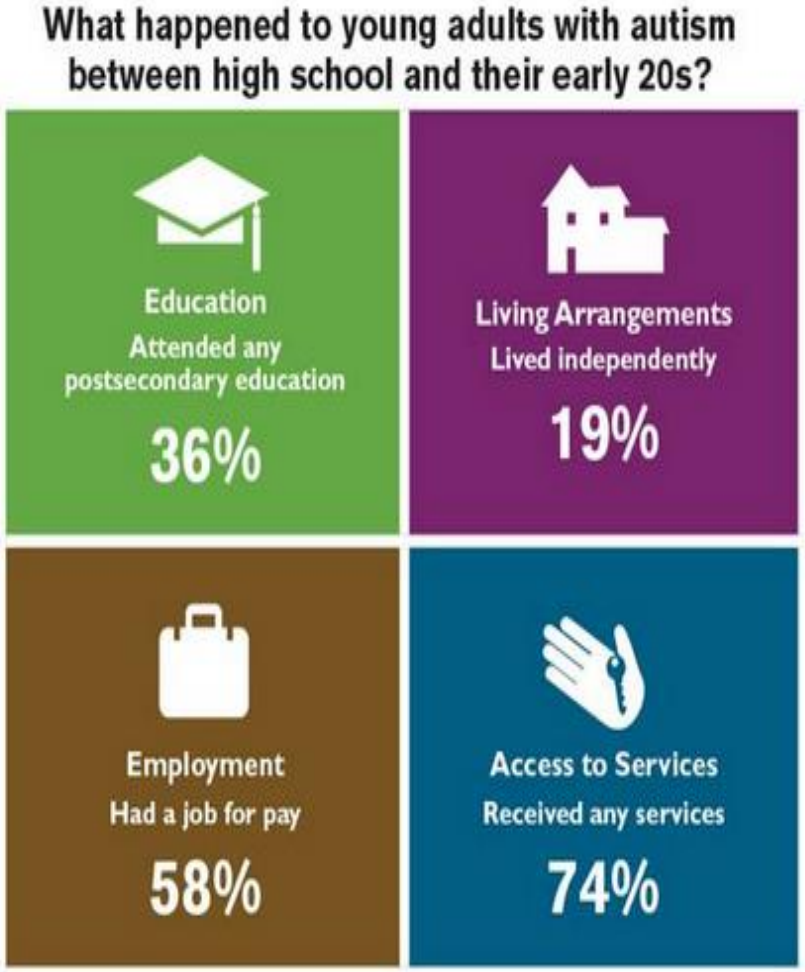
Autism in High Schools

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



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

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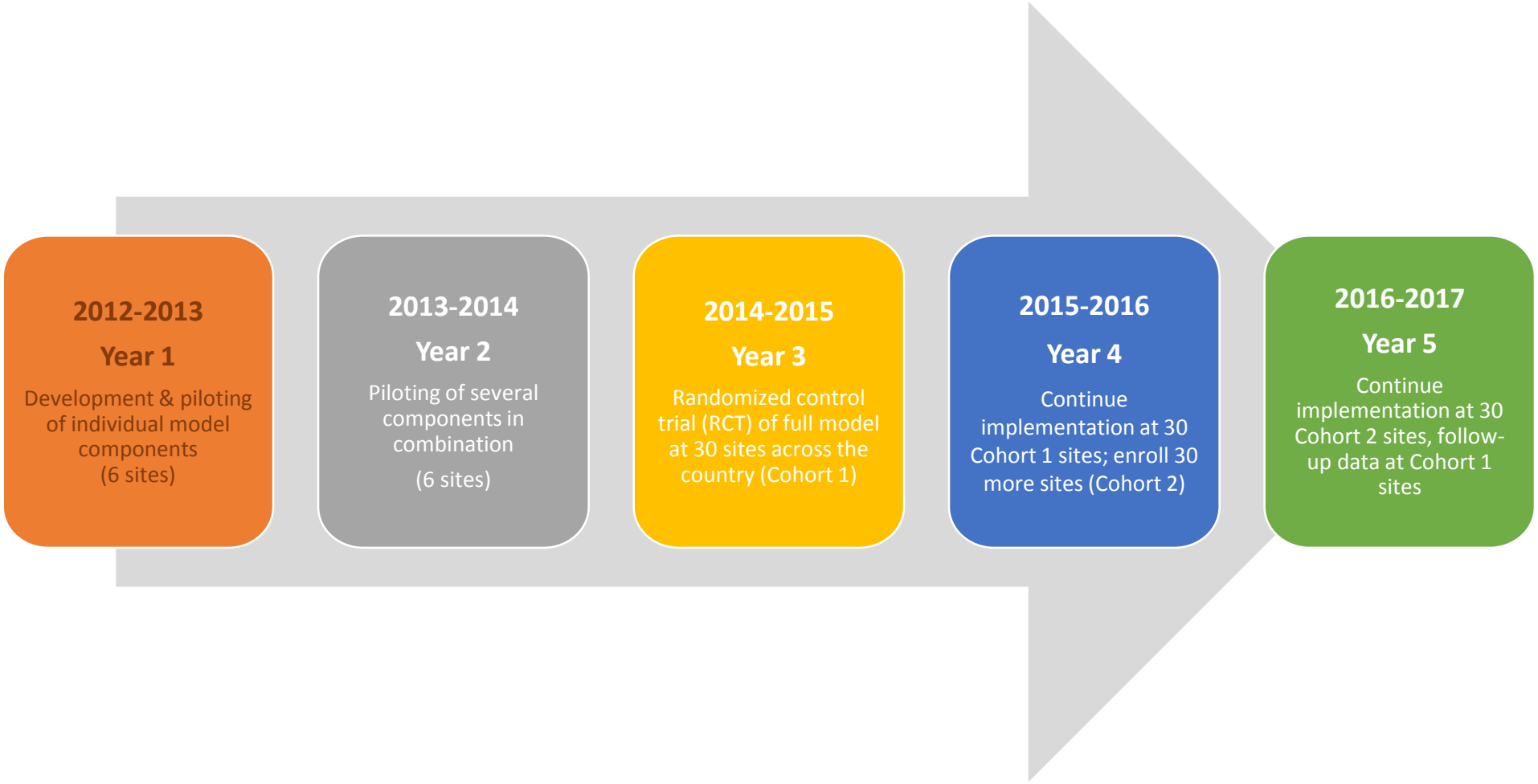
The Big Picture



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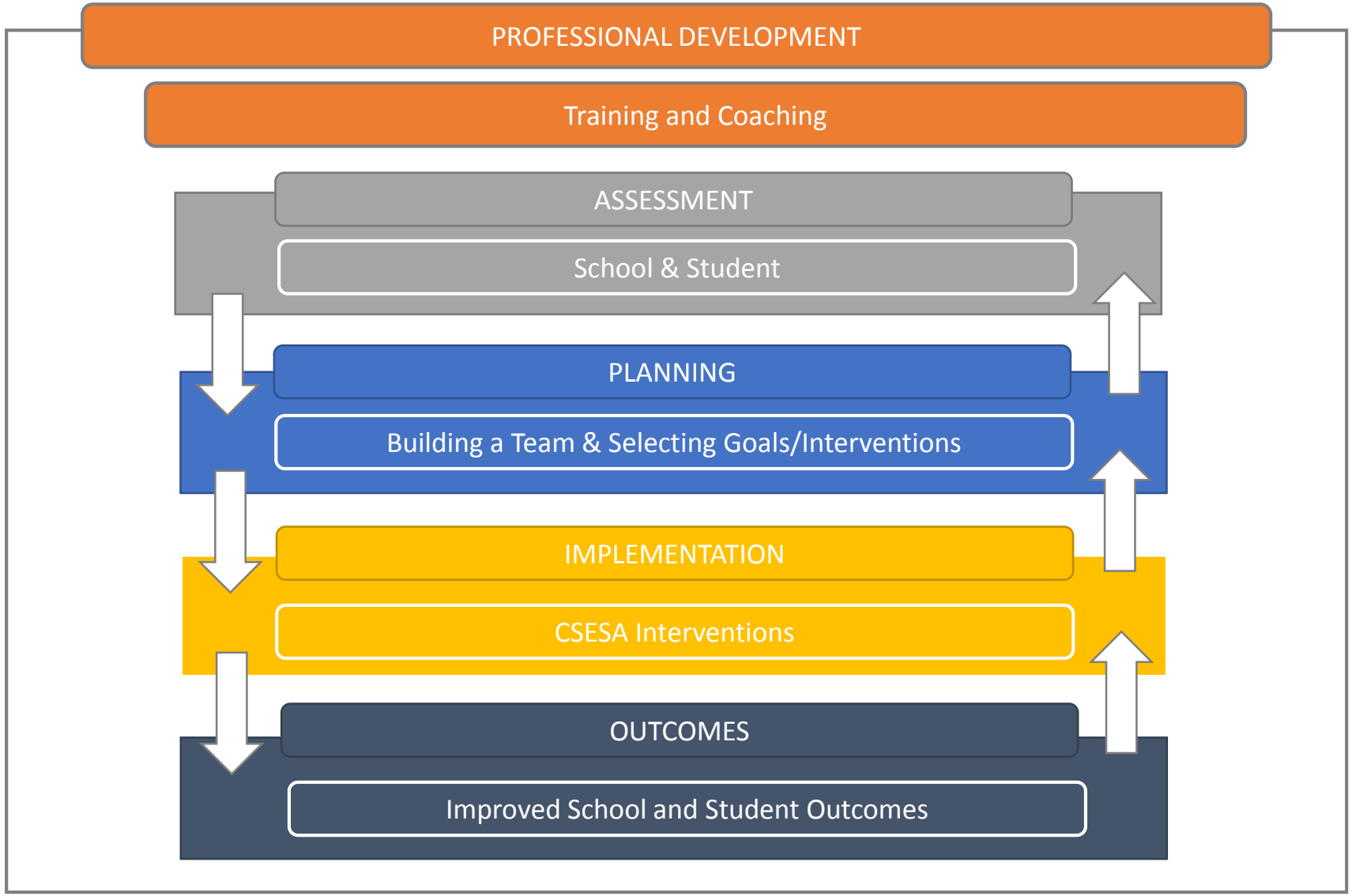
CSESA By the Numbers

- **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



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CSESA Domains

- 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 2-year-period

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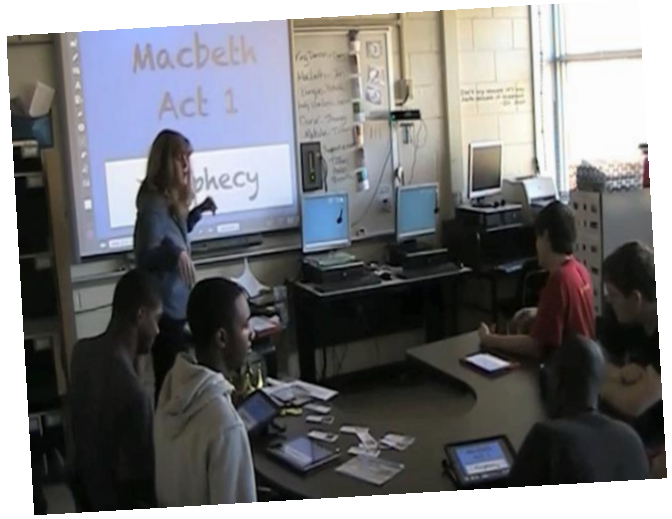
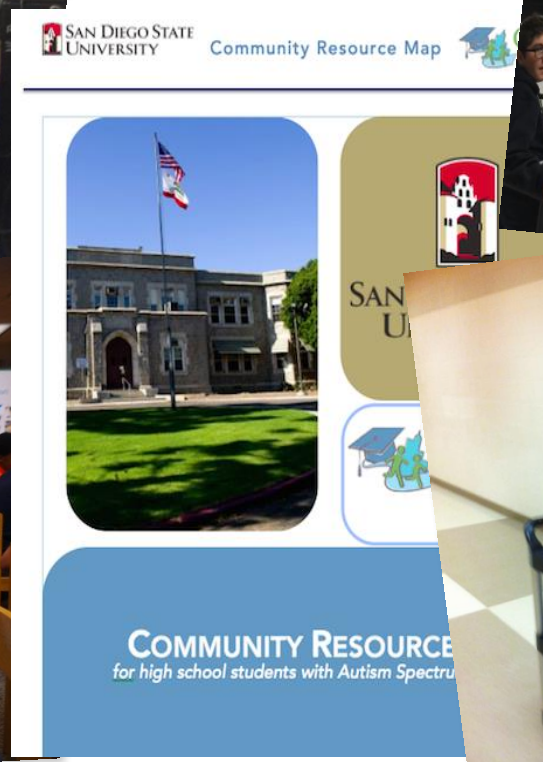
CSESA Domains





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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	☑ APERS-10/13/14 ☐ SSS-C – IN progress ☐ Y1 – Pre-assessment-Distributed	☐ 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	☐ 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)

CSESA

The Center on Secondary Education for Students with Autism Spectrum Disorders

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

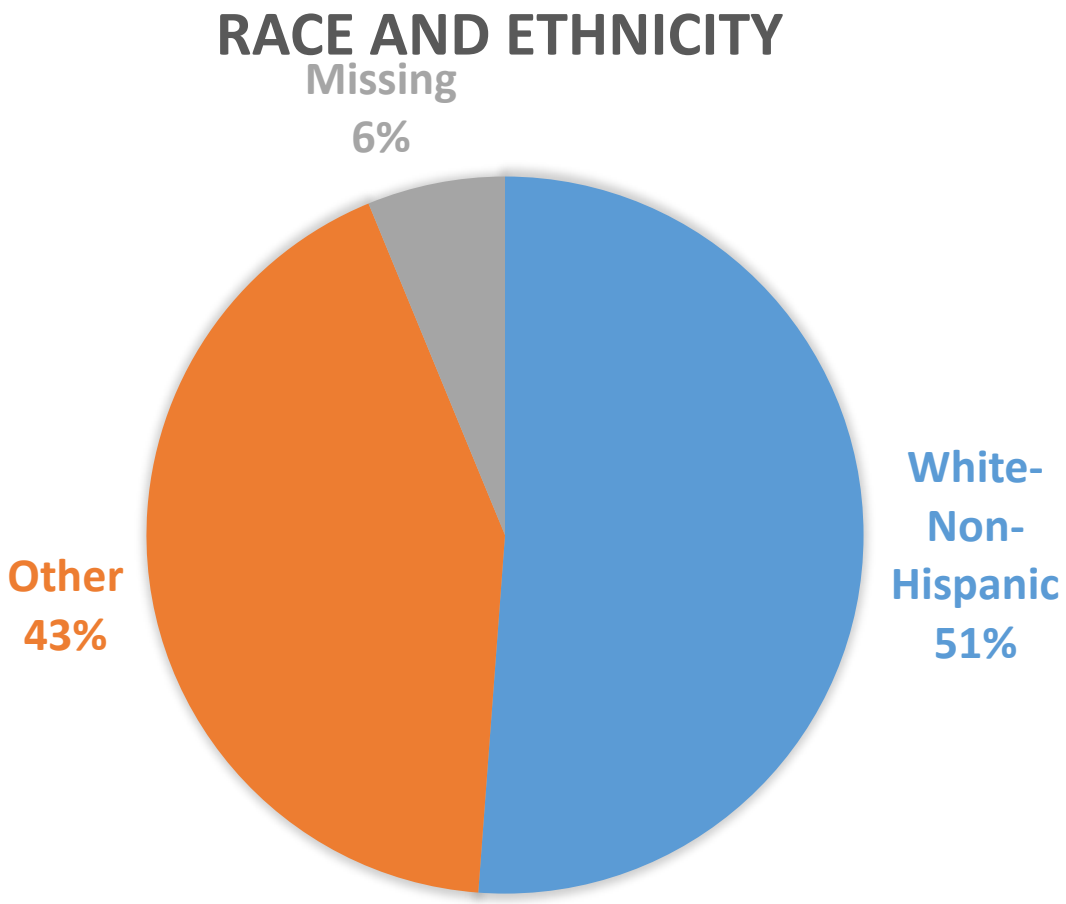
- Study Completed
- Analysis of Program Quality Data Completed
- Student Performance Data Being Entered
- Program Implementation Data in Process:
  - Measure created
  - Data collected and being entered

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

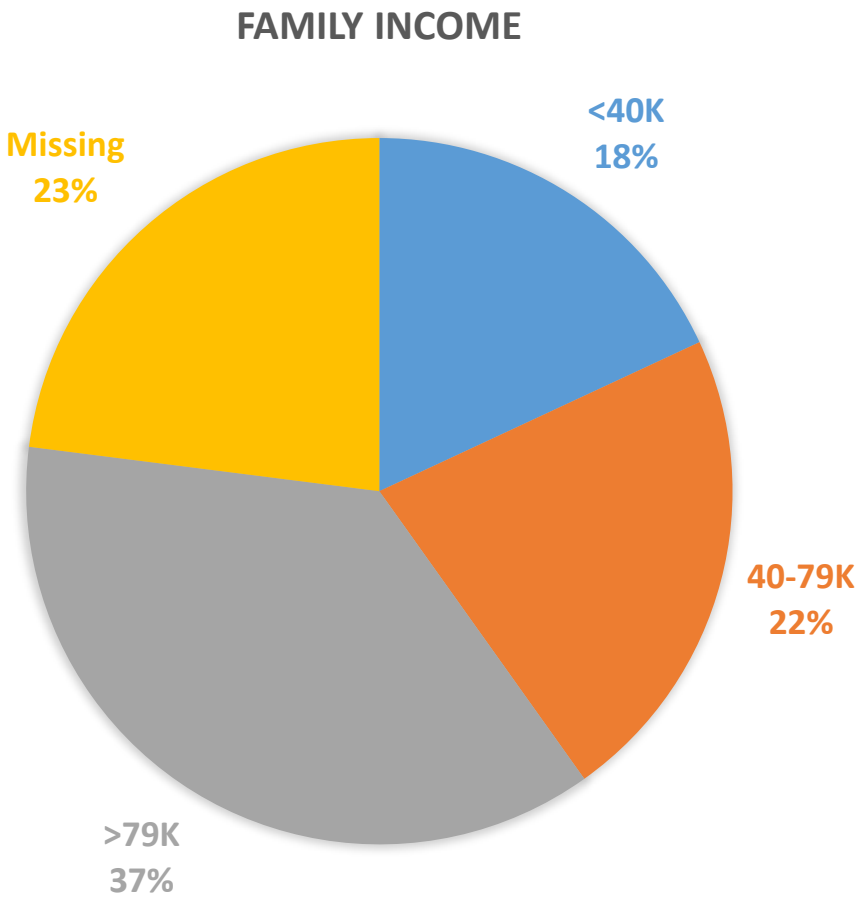
Characteristic	Mean or % (SD)
Urbanicity	
Rural/Town	15.0
Suburb	45.0
City	40.0
Ethnicity	
White, non-Hispanic	51.3
Hispanic	24.1
Black, non-Hispanic	13.9
Asian	6.22
More than 2 races	3.75
American Indian/Alaskan	.520
Native Hawaiian	.290
SES(% Title 1 Eligible)	56.7
School Size	1890(70.1)

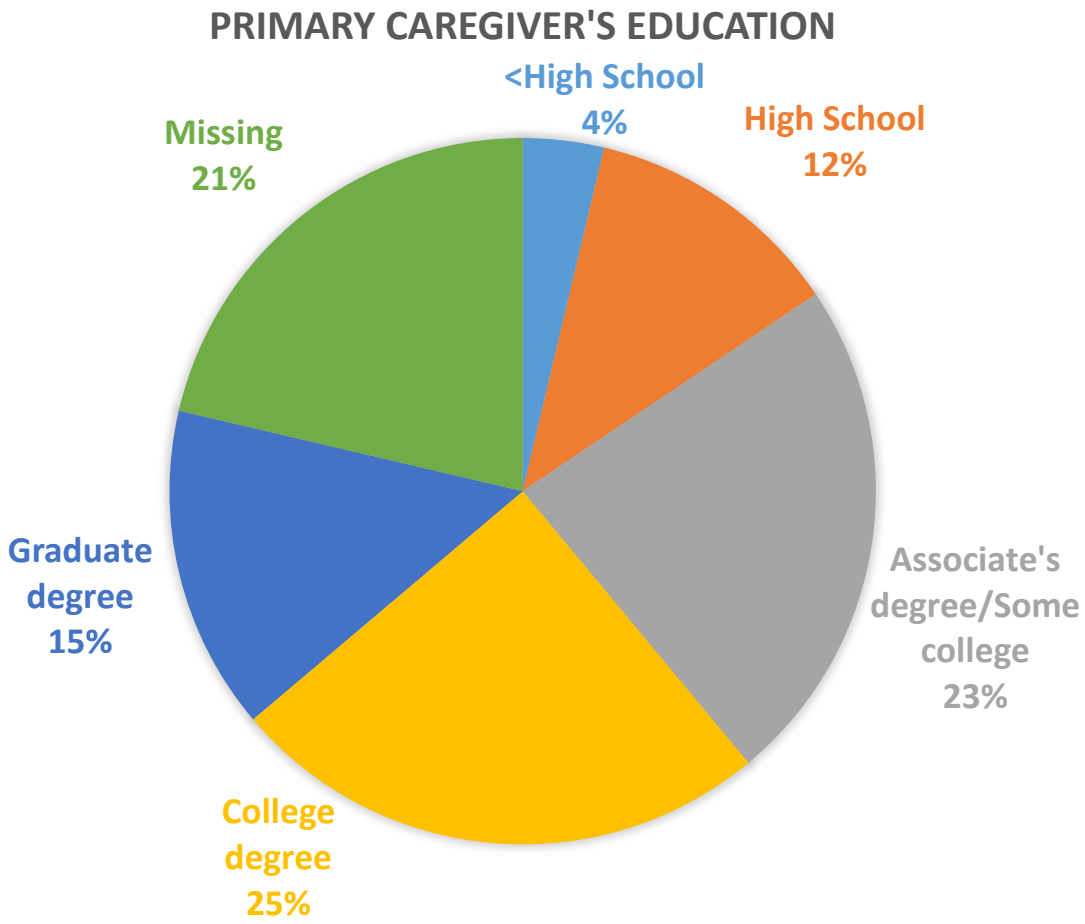
Student Demographics



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

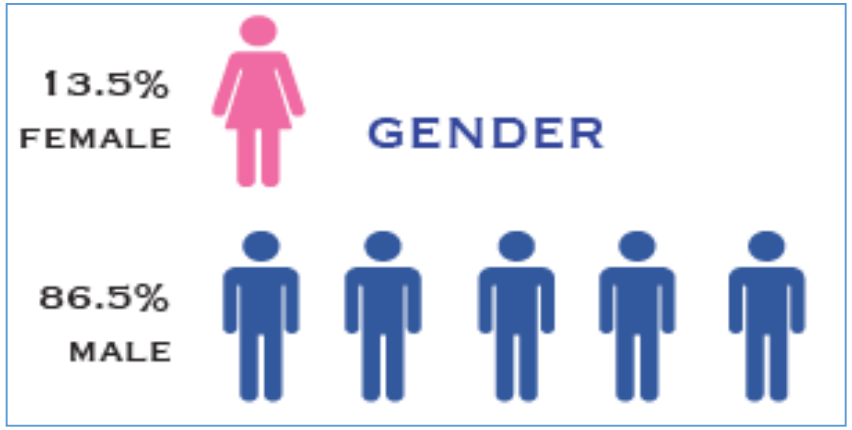




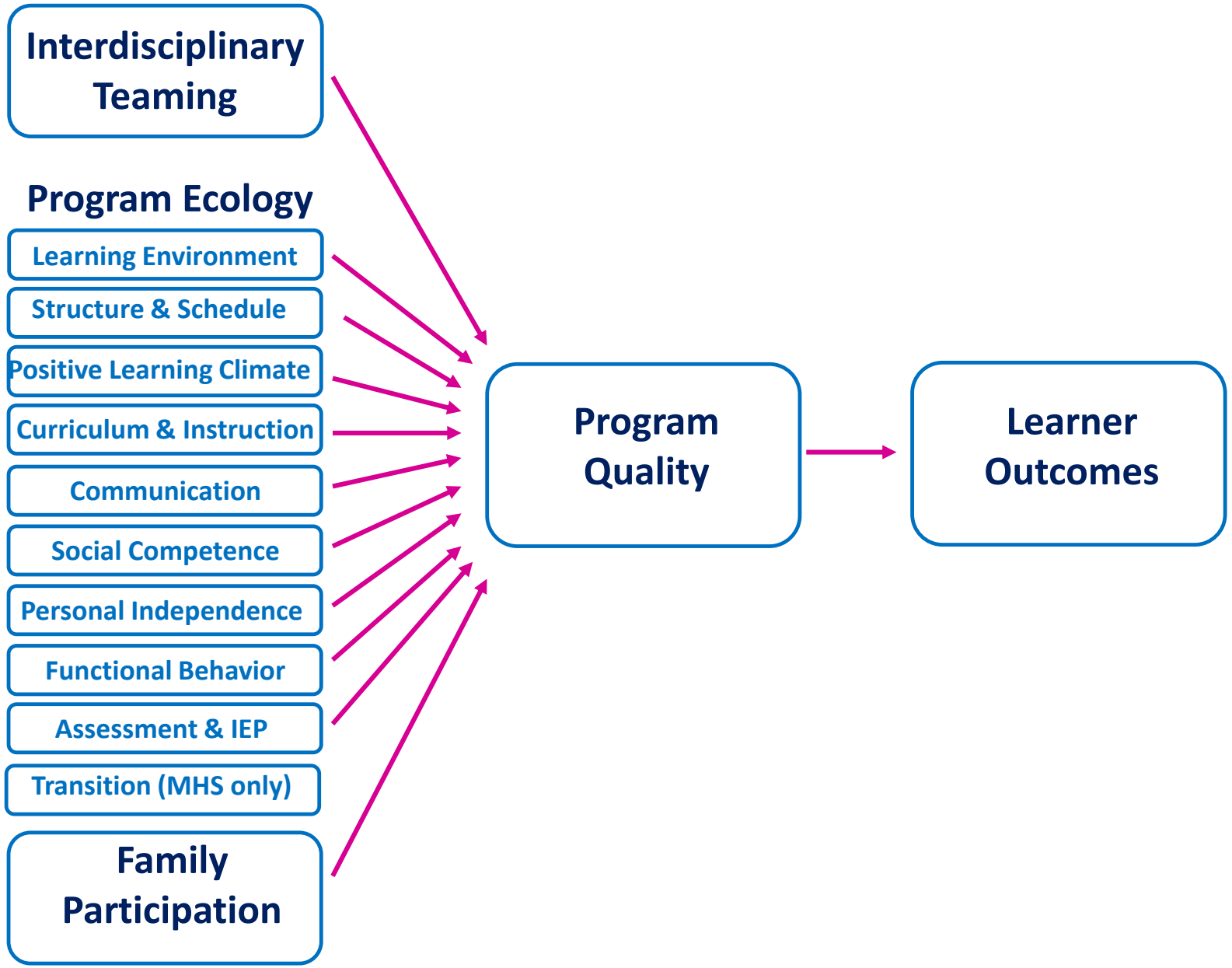
Student Characteristics

- 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



QUALITY
MATTERS


Interdisciplinary Teaming
Program Ecology
Learning Environment
Structure & Schedule
Positive Learning Climate
Curriculum & Instruction
Communication
Social Competence
Personal Independence
Functional Behavior
Assessment & IEP
Transition (MHS only)
Family Participation
Program Quality
Learner Outcomes

Assessment: School (APERS)

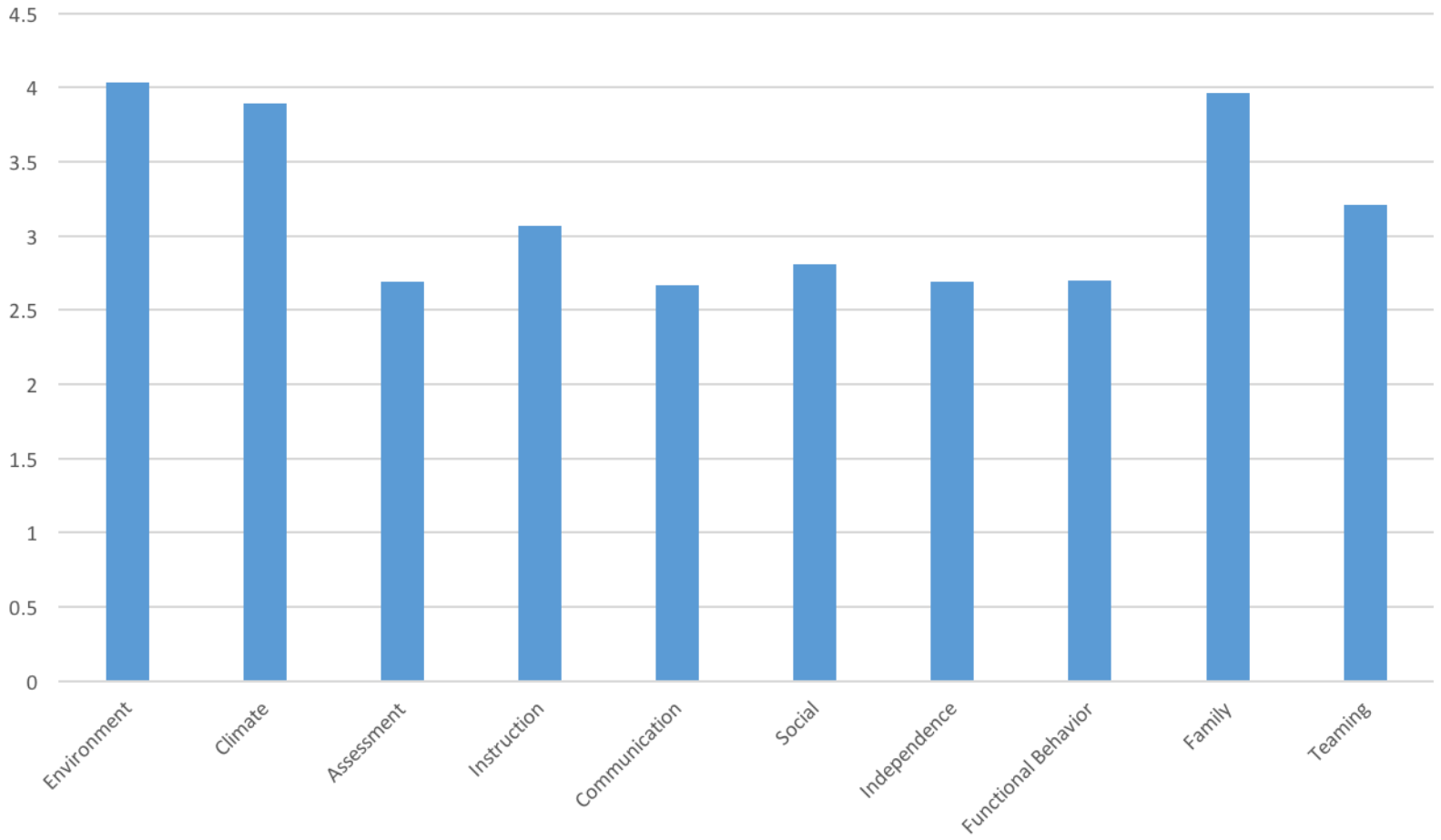
- **Purpose:** To look at environmental features and supports school has in place and areas for improvement
- **Participants:** Led by CSESA staff with support and participation from school staff

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

Example

27*	☑ 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

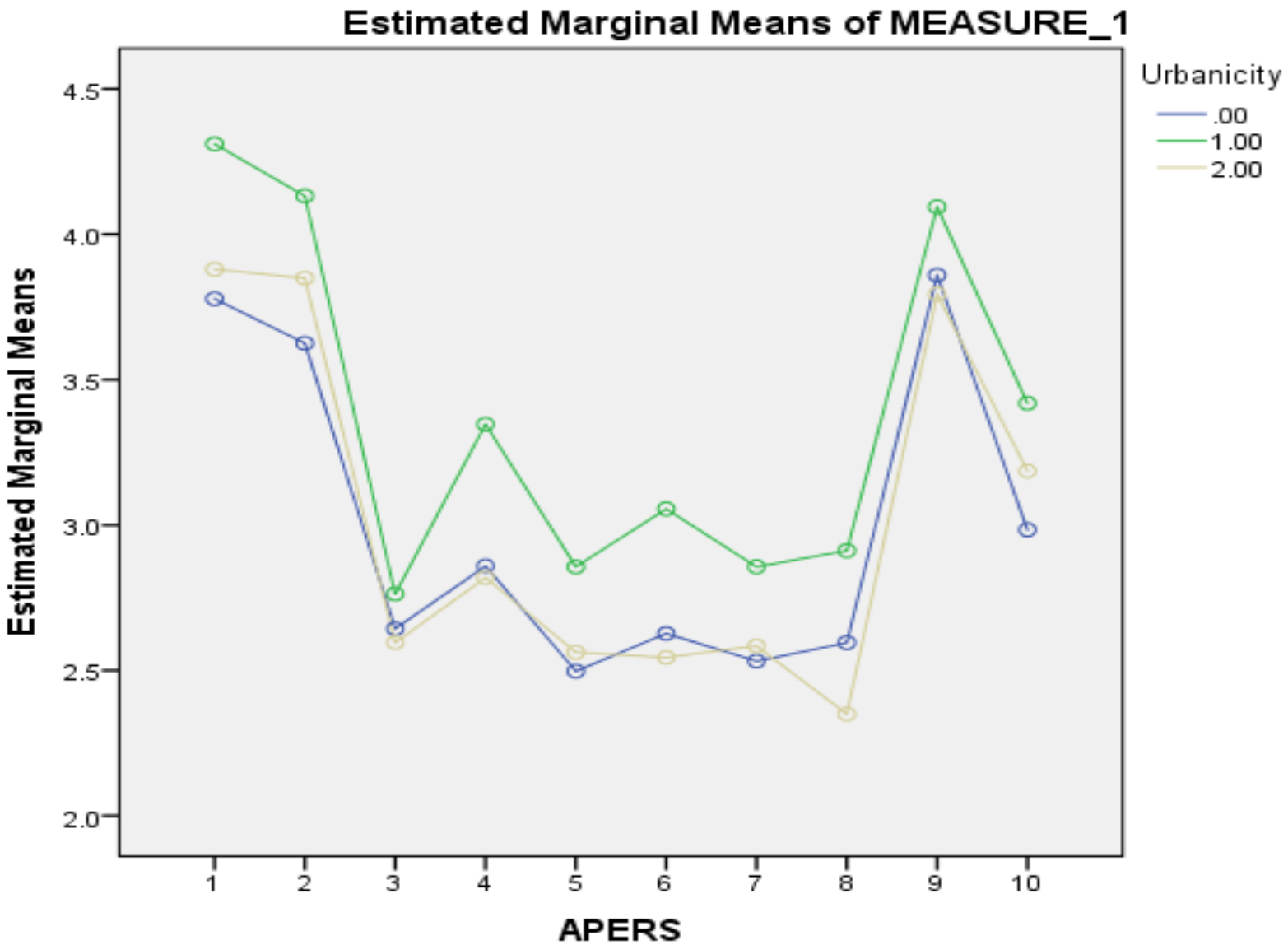
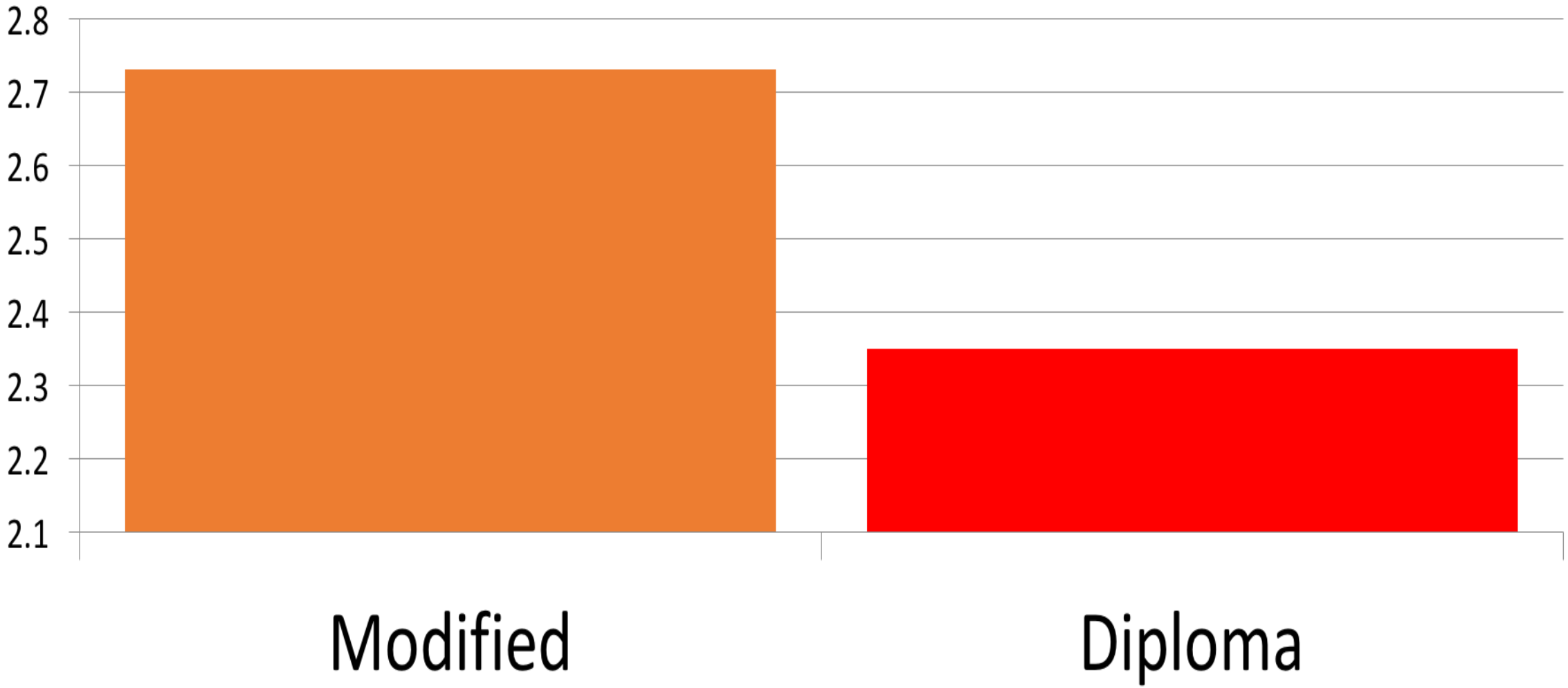

Estimated Marginal Means of MEASURE_1
Estimated Marginal Means
4.5
4.0
3.5
3.0
2.5
2.0
1
2
3
4
5
6
7
8
9
10
APERS
Urbanicity
.00
1.00
2.00

Table 3 APERS Means by Program

APERS Domain	**Diploma Program Mean(SD)(N=60)**	**Modified Diploma 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)

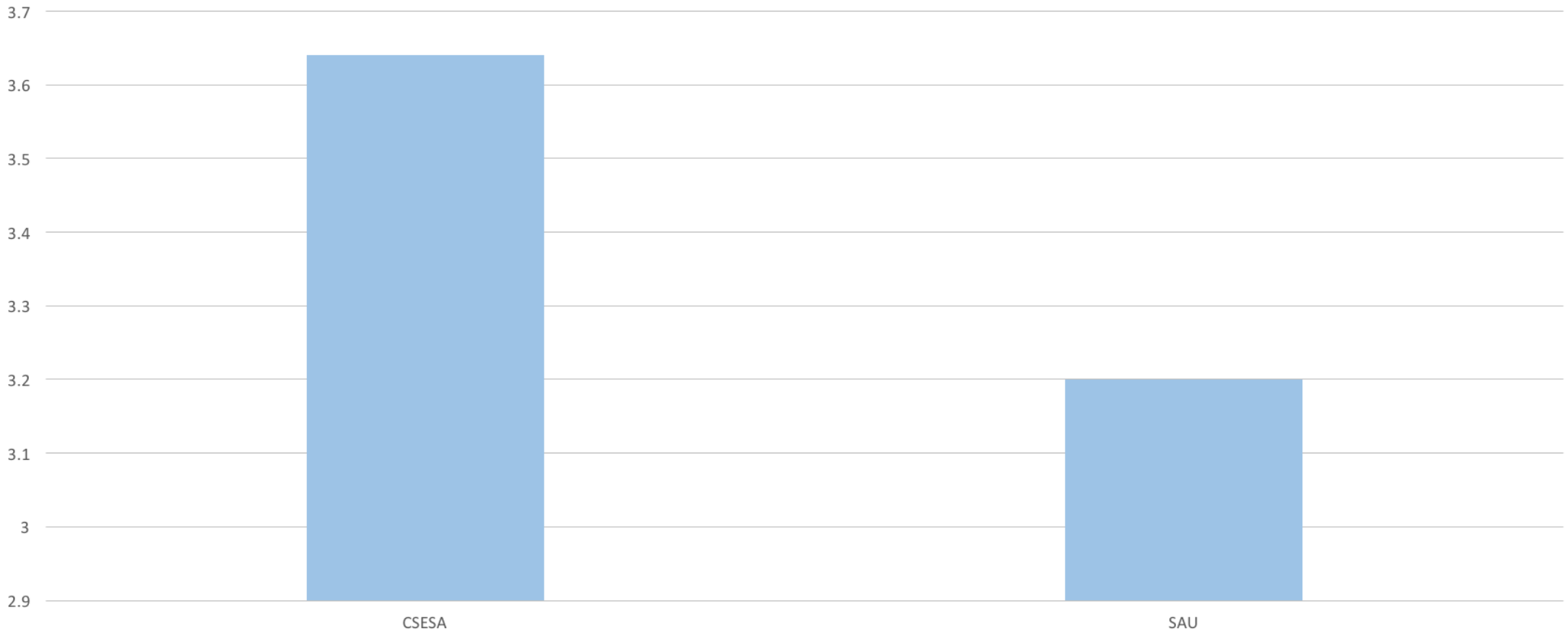
*$p < .001$

APERS Scores Transition



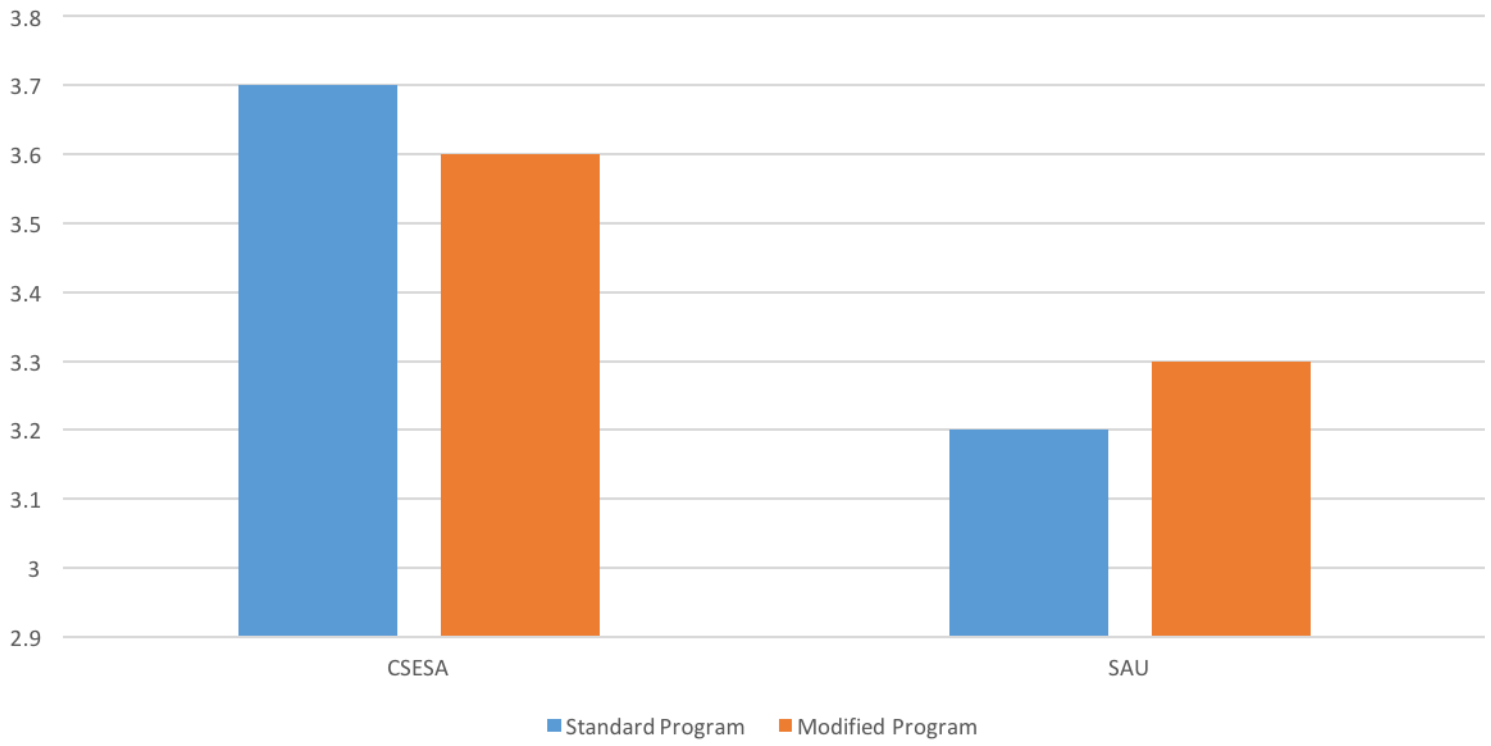
p<.001, d = .54

Overall Effect for APERS?



$F(1, 52) = 16.6, p < .001, \eta^2 = .24, d = 1.12$

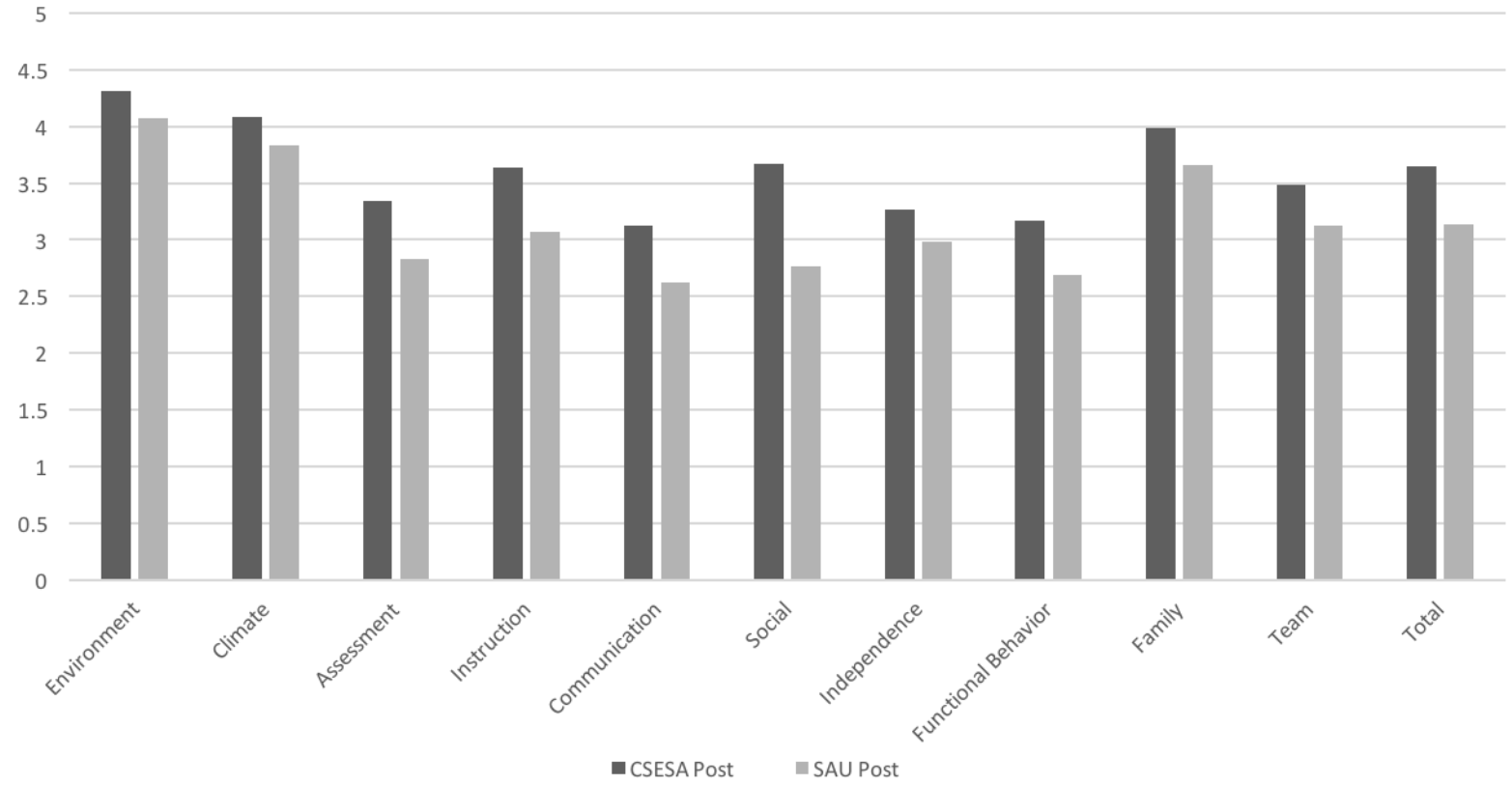
Did the CSESA Program Affect Quality?



Diploma: $F(1, 54) = 13.9$, $p < .001$, $\eta^2 = .205$, $d=1.02$,

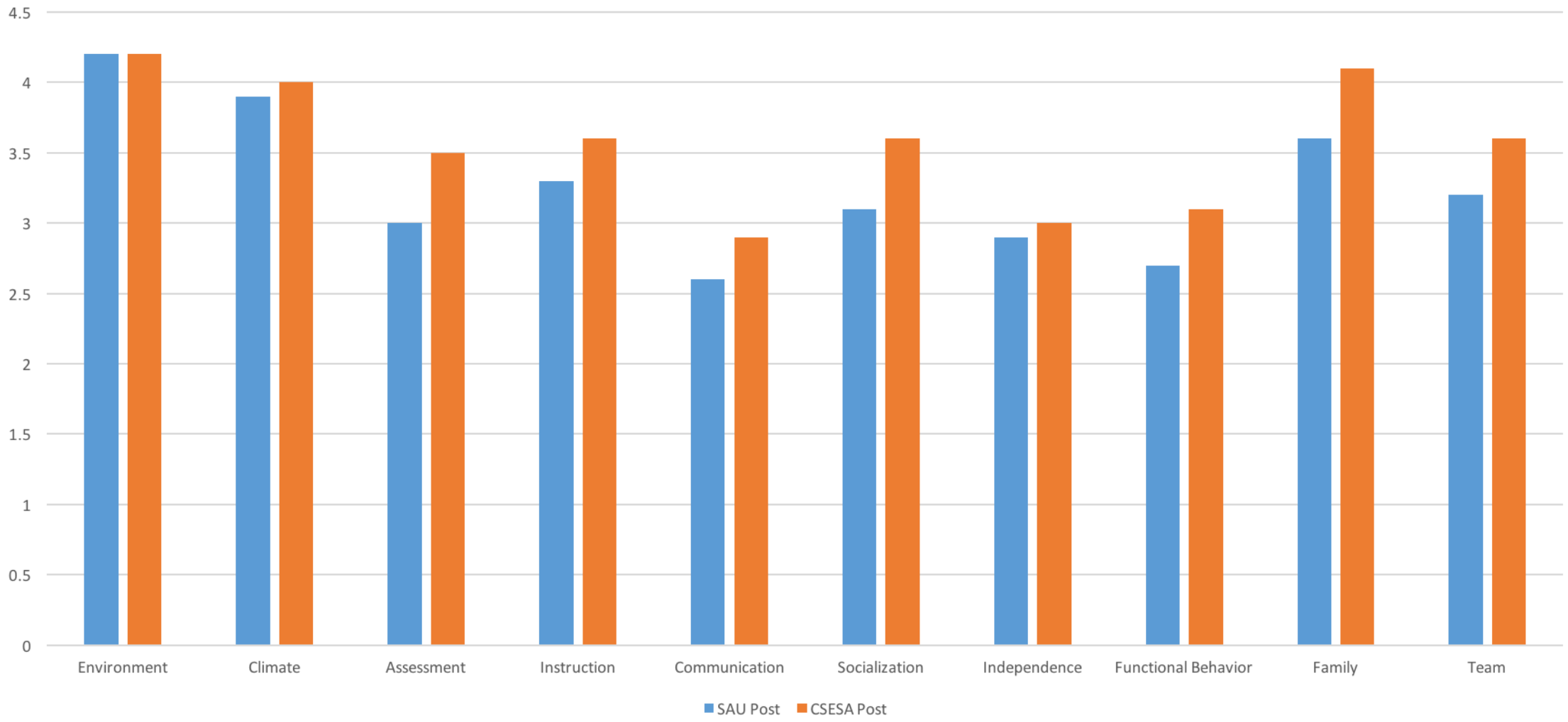
Modified: $F(1, 45) = 3.66$, $p = .063$, $\eta^2 = .080$, $d=.590$,

Adjusted Post-test Scores for Domains

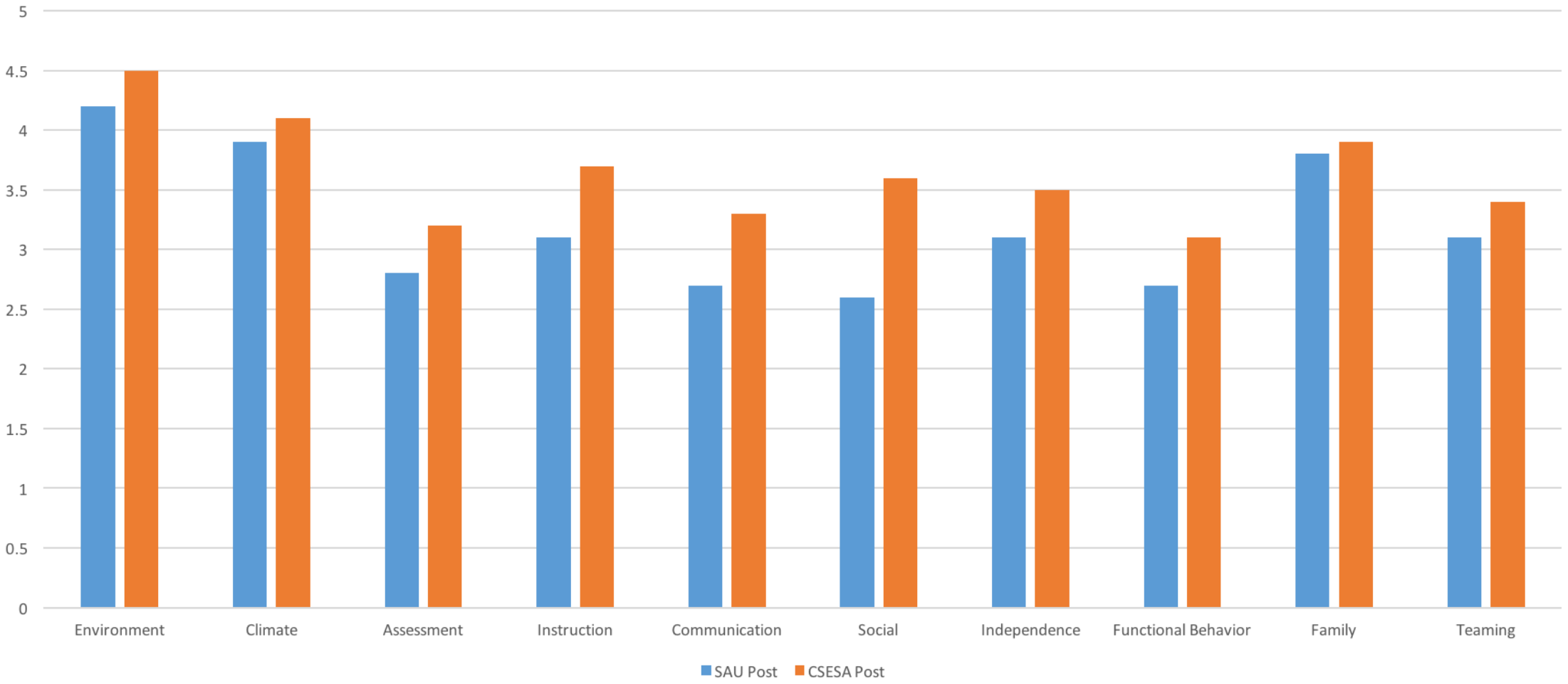


Assessment (*p* = .003 d=.793), Instruction (*p* < .001 d=.974), Communication (*p* = .009 d=.688), Social (*p* < .001 d=1.43), Functional Behavior (*p* = .016 d=.683), Teaming (*p* = .010 d=.701), Academic (*p* <. 002 d=.846), Independence (*p* < .010 d=.686).

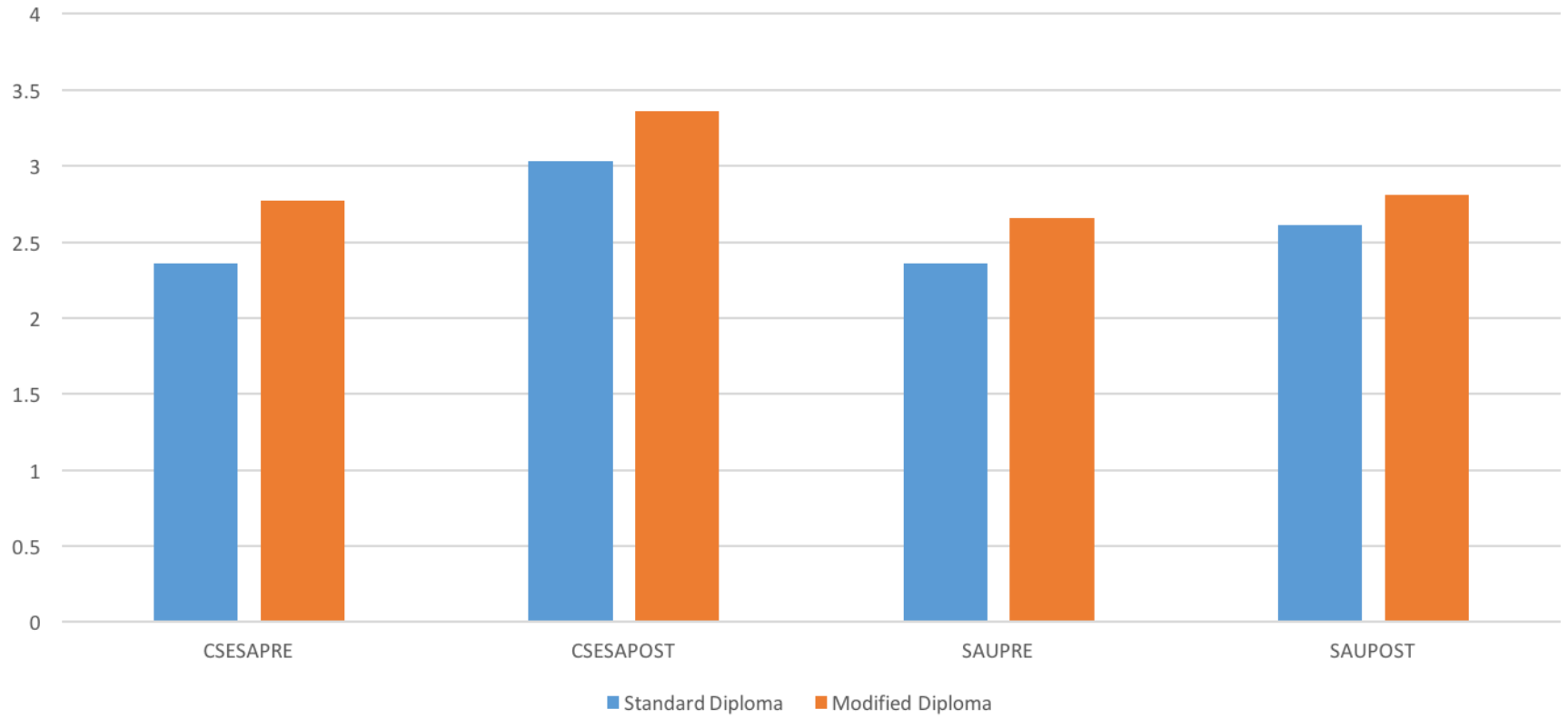
Adjusted Post-test Scores for Diploma



Adjusted Post-test APERS Scores for Modified



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



Total Weighted $F(1, 49) = 15.8$, $p = .021$, $\eta^2 = .238$, 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	+
6. 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)

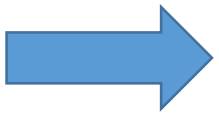
Conceptual Model for Implementation Measurement

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

Level and Questions	Data Source	Process
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Students		
Is the CSESA Process being implemented at the student level?	1. Secondary School Success Checklist 2. Student intervention matrix	1.SSSC used to identify needs. 2. Documentation across school of intervention for all students
Is the student receiving the interventions as designed?	1.Student planning menu 2.Fidelity measures	1.Individual student specification of interventions 2. Mean fidelity rating for intervention student received.

Analysis of Implementation: A Portfolio Or a Number?

Level and Questions	Data Source	Perfect Score	Actual Score	Percentage
School				
Is the CSESA process being implemented at the school?	1.Coaching Log 2. Coaching Fidelity	1. Mean of 6 hours per school 2. Mean of 3.0	1. Mean = 4.9 hours 2. Mean = 2.6	1. 82% 2. 87%
Is the school receiving the model?	1.Professional Development (PD) Training Log	1. Mean of 60 hours of professional development 2. Mean rating 4.0	1. Mean = 49 hours 2. Mean = 3.67	1. 81% 2. 92%
Staff				
Is the staff implementing the CSESA interventions as designed? (fidelity data)	1.Fidelity checklists for each component.	1. Mean rating of 3.0 across meas.	Mean = 2.5	1. 83%
Is the staff following the CSESA Process?	1.School Planning Form 2.APERS Teaming Subtest	1. School employed 100% of items 2. Mean APERS Score of 5.0	1. Mean = 90% 2. Mean APERS = 4.2	1. 90% 2. 84%
Students				
Is the CSESA Process being implemented at the student level?	1. Secondary School Success Checklist 2. Student intervention matrix	1. 100% of assessments conducted 2. 100% of student received all interventions	1. Mean = 98% 2. Mean = 66%	1. 98% 2. 66%
Is the student receiving the interventions as designed?	1.Student planning menu 2.Fidelity measures	1. Individual interventions specified for 100% of students 2. Mean fidelity rating of 3.0 of interventions student received	1. Mean = 89% 2. Mean = 2.6	1. 89% 2. 87%

Mean =85.3% (Hypothetical)