



Autism Program Environment Rating Scale (APERS): Psychometric Properties



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Abstract

The purpose of this study was to examine the psychometric properties of the Autism Program Environment Rating Scale (APERS), an instrument designed to assess quality of program environments for students with autism spectrum disorder. Data sets from two samples were utilized. Cronbach alpha analyses indicated high coefficients of internal consistency for the total APERS and moderate levels for item domains. A test-retest reliability analysis indicated a moderate, significant association over an 18 month period. A factor analysis of the first data set indicated that all domain scores loaded on one main factor. In alignment with the conceptual framework, the APERS was sensitive to changes across time consistent in direction with researchers' hypothesized changes.

Background and Research Needs

- With the increased prevalence of ASD, schools are now providing services for more students with ASD.
- The necessity of providing high quality programs is prescribed by law.
- To date, there have been few assessments of school program quality that have psychometric evidence.

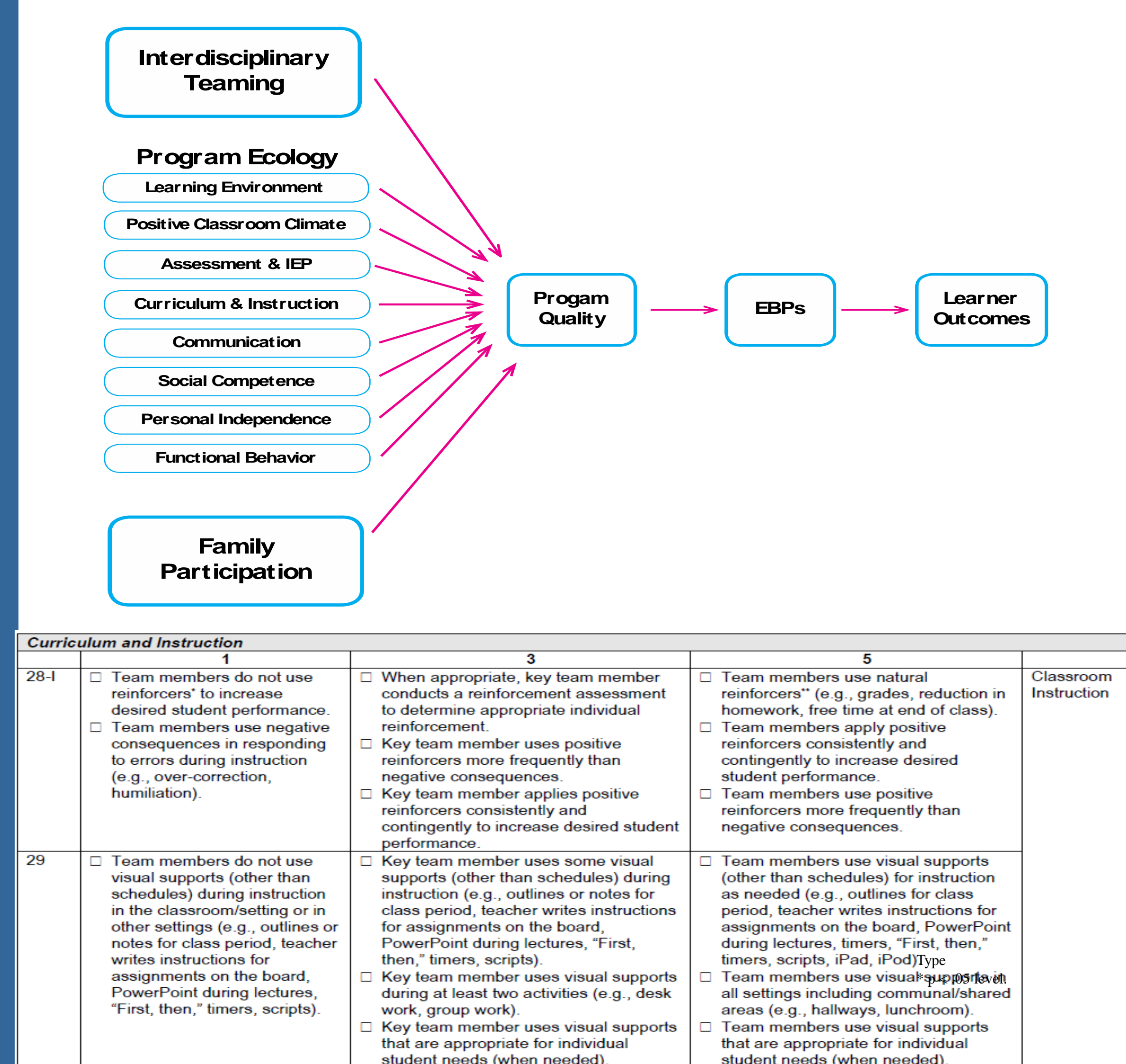
Research Questions

- What is the internal consistency of the APERS?
- Does the APERS measure a central quality construct?
- Does psychometric instrument quality replicate across samples?

Assessment of Quality: The Autism Program Quality Rating System (APERS)

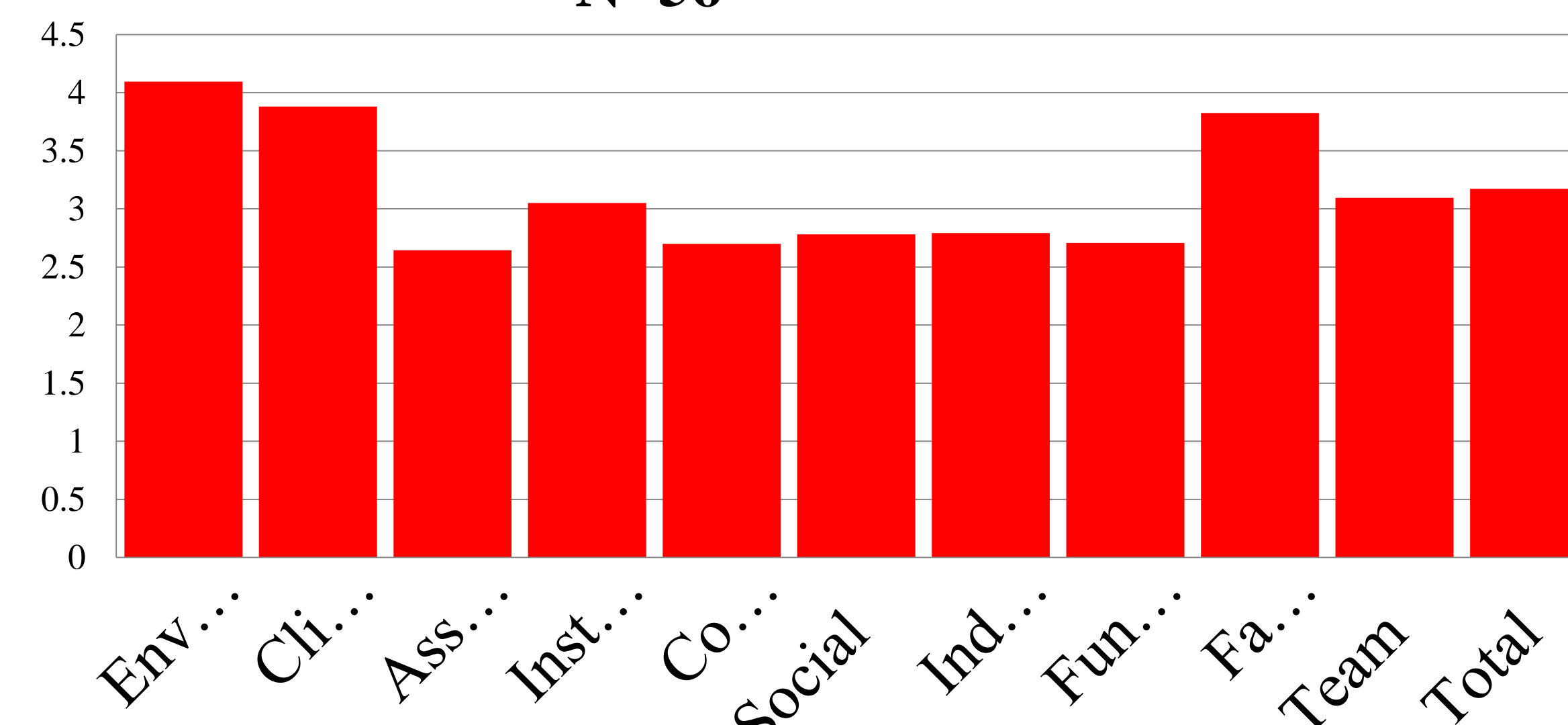
- Two forms: Preschool/Elementary (P/E) and Middle/High (M/H).
- 60+ items rating scale organized into 10 domains and one composite score for transition for M/H
- Based on observation, interviews, document reviews
- Five-point Likert scale

Conceptualization of Quality



Example of APERS Profile

APERS Scores: Standard Diploma Program
N=56



Participants (NPDC) Study 1

Program	Preschool	Element-	Middle	High	Total
Inclusive	9	20	5	8	42
SC	5	9	10	6	30
Total	14	29	15	14	72

Participants (CSESA) Study 2

Program	Pretest	Post
Inclusive	56	20
SC	43	9
Total	99	29

Reliability of Measure

	NPDC				CSESA		Test-Retest
	P/E	MHS	Incl	S/C	Incl	S/C	
Total	.96	.96	.96	.94	.95	.96	.51*
Learning Environment	.69	.71	.76	.73	.82	.81	.48*
Structure/Schedule							
Positive Learning Climate	.76	.78	.61	.77	.71	.68	.42*
Assessment/IEP Development	.84	.87	.86	.86	.60	.76	.54*
Curriculum and Instruction	.81	.77	.85	.84	.87	.89	.25
Communication	.79	.92	.84	.73	.69	.74	.45*
Staff/Peer Relationships	.72	.78	.73	.63	.70	.75	.38*
Personal Independence and	.75	.78	.75	.76	.70	.75	.50*
Competence							
Functional Behavior	.85	.81	.76	.68	.81	.81	.60*
Family Involvement	.88	.76	.78	.68	.74	.68	.61*
Teaming	.85	.71	.72	.74	.68	.60	.35*

Inter-rater Agreement for CSESA

- Mean total item ratings were 3.31 and 3.33 for two ratings for the modified and 3.26 and 3.27 for the diploma.
- Individual item rating differences were .43 for modified and .38 for diploma. Lower than the agreement within one point.
- Correlation between raters for total item rating was .54.

Sensitivity to Treatment Effects

- NPDC study collected APERS in fall of year and again in the spring.
- Provided NPDC treatment during the year
- The hypothesis was that APERS scores would increase.
- Univariate t tests, adjusted for Type II error, were conducted to determine the difference between the pre and post APERS mean item ratings,
- Significant differences between the two time points for the total and all domain scores (all t > 4.38; all p < .001; all d > .50).

CFA for NPDC and CSESA Data

APERS Domains	NPDC	CSESA
Learning Environment Structure/Schedule	0.61	0.62
Positive Learning Climate	0.63	0.63
Assessment/IEP Development	0.72	0.61
Curriculum and Instruction	0.87	0.89
Communication	0.67	0.77
Staff/Peer Relationships	0.68	0.61
Personal Independence and Competence	0.79	0.75
Functional Behavior (Interfering and Adaptive)	0.67	0.63
Family Involvement	0.57	0.50
Teaming	0.61	0.59
Model Fit		
Degrees of Freedom	35	35
Chi-Square	149.81	70.21,
	p = .0000	p = .0004
RMSEA	.14	.10
CFI	.87	.92

Conclusion

- APERS appears to be a reliable measure of program quality for students with ASD in public schools.
- Single factor solution suggested measurement of a quality factor
- APERS appears sensitive to changes across time in alignment with treatment

Acknowledgments

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