

The Foundations of Learning: Impact of a Behavioral Intervention on Low-Income Preschool Classrooms

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Disparities in Educational Outcomes

- Low-income children face disadvantages
- Early educational settings present opportunities for intervention
- Evidence of the potential to alter educational trajectories for low-income children

The Pre-School Context

- Efforts at expanding such services have been limited
- Evaluation of large-scale services, in particular Head Start, have resulted in only modest gains
- Issues with scale-up: when quality is not maintained, effects may be detrimental (Magnuson, Ruhm, & Waldfogel, 2007)

The Pre-School Context

- Content vs. process: teacher-child interactions and classroom climate
- Teachers cite challenging behaviors as a primary concern
- Rates of challenging behaviors in low-income classrooms may be more than 3 times higher

The Pre-School Context

Challenging Behaviors

- Teachers: increased stress, burn-out, lowered warmth and sensitivity in interactions with children
- Children: high negative arousal interferes with learning, cause frustration and receive less instruction
- Classroom: increases negative climate, limits instructional time

CSRP → FOL

Foundations of Learning Project

Table 1

Progression of the Project

	CSRP	FOL Pilot Newark	FOL Full-Scale Newark	FOL Full-Scale Chicago
Timeline	2004-2006	2006-2007	2007-2008	2008-2009
Total number of sites	18	17	51	20
Program	9	9	26	10
Control	9	8	25	10
Total number of classrooms	36	17	51	40
Head Start (%)	100	30	25	100
Community-Based (%)	0	35	53	0
School-Based (%)	0	35	22	0

SOURCE: MDRC calculations using

NOTES:

Newark Context

Abbott Mandates:

- Maximum of 15 students per class
- B.A.-level teacher
- Higher teacher pay
- Developmentally-appropriate curricula
- Adequate facilities /resources
- Three venues: schools, community-based centers, and Head Starts

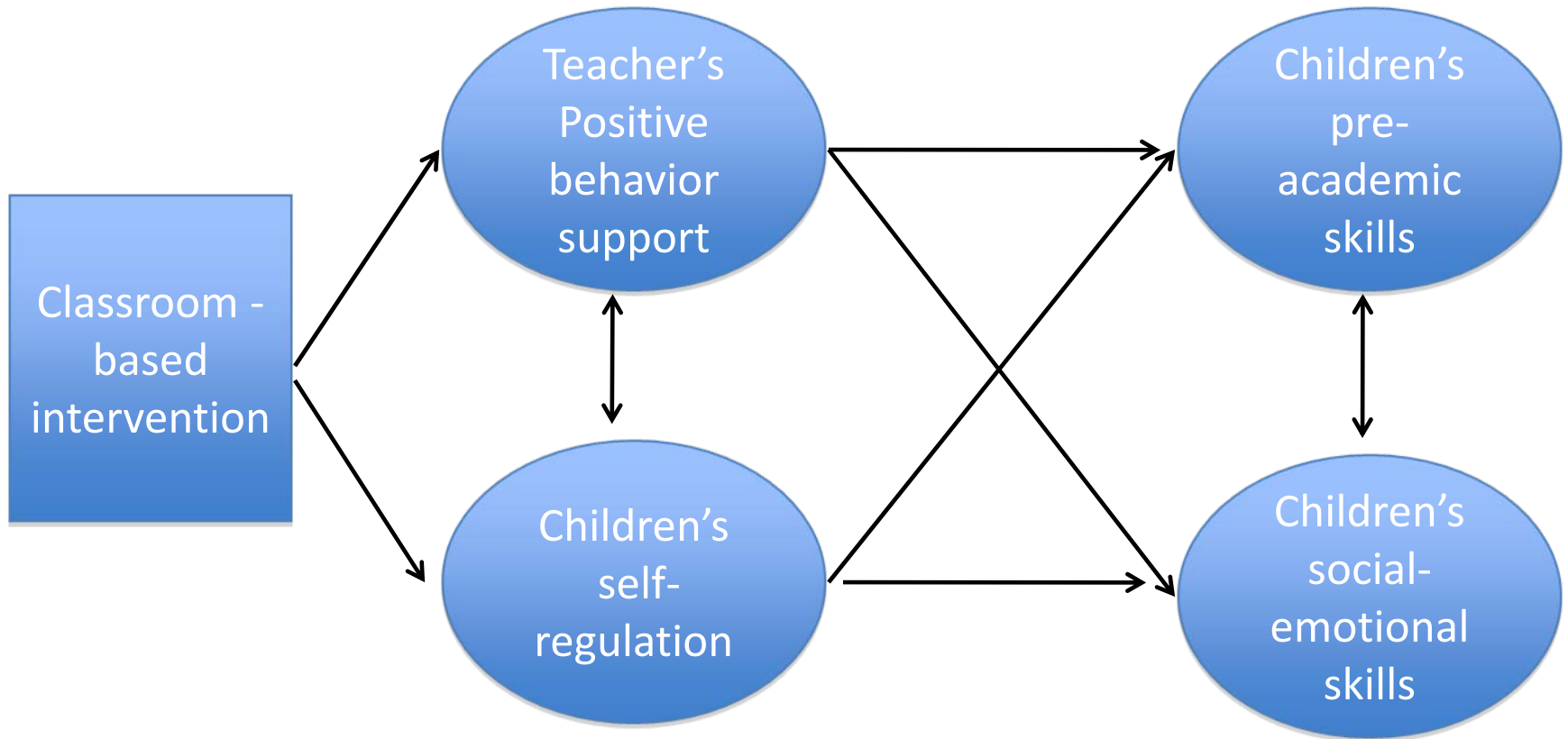
Research Questions

- What are the effects of a classroom-based intervention that addresses challenging behaviors in preschool classrooms?
- Will improvements in classroom climate as demonstrated by CSRP be replicated in a disadvantaged but more resourced context?

FOL Intervention Components

- *Teacher* Focused Intervention
 - 30 hours of classroom management training using the Incredible Years curriculum (Webster-Stratton, Reid, & Hammond, 2001)
 - Weekly in-class support delivered by a clinical classroom consultant (CCC)
 - Stress management workshop
- *Child* Focused Intervention
 - One-on-one individualized services to children who are in need of additional support

Theory of Change



Study Design

- 51 sites, 3 venues
- Randomized block design
- Teacher training and coaching beginning in Fall
- Teacher stress workshop in the Winter
- Child one-on-one sessions with CCC ongoing
- Observers blind to program/control status- conducted baseline and spring ratings of classroom climate

FOL Sample

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Table 2

Baseline Characteristics of Teachers and Classrooms

Variables	Full Sample Mean	Standard Deviation
<u>Venue (%)</u>		
Head Start	25.5	
Community-Based	52.9	
School-Based	21.6	
<u>Characteristics of lead teachers^a</u>		
Female (%)	88.2	32.5
Age	37.5	9.5
Race/Ethnicity (%)		
Black/African-American ^b	58.7	49.8
Hispanic	20.4	40.7
White ^b	19.6	40.1
Taught preschool for 6 or more years (%)	55.1	50.3
Education (%)		
Holds bachelors degree or higher	98.0	14.3
Holds bachelors degree or higher in education or early childhood ^c	61.0	49.4
<u>Characteristics of classrooms</u>		
Racial/Ethnic composition (%)		
Predominantly Black/African-American	56.9	50.0
Predominantly Hispanic	23.5	42.8
Predominantly Portuguese	9.8	30.0
Mixed	9.8	30.0
Average ECERS score for space and furnishings	4.1	0.5
Number of children enrolled in the class	13.7	1.6
Number of children present on an average day	12.0	1.8
Sample size	51	

SOURCE: MDRC calculations from responses to teacher self-survey and classroom observations.

NOTES: Because of missing data, the sample sizes for Age, Race, Taught preschool for 6 or more years, and Education do not total 51.

^a In one classroom the assistant teacher acted as the lead teacher because of an illness of the lead teacher.

^b Includes only teachers not also reporting Hispanic.

^c Field of degree not available for all teachers.

Measures

- Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2006): 10 dimensions, 7-point scale
 - Positive Classroom Management
 - Positive Climate
 - Negative Climate
 - Teacher Sensitivity
 - Behavior Management
 - Quality of Instruction
 - Regard for Student Perspectives
 - Instructional Learning Formats
 - Quality of Feedback
 - Language Modeling
 - Productivity
 - Student Engagement

Analysis Design

$$Y_j = \alpha + \beta_0 T_j + \sum_{k>0} \beta_k X_{kj} + e_j$$

- Y_j = the outcome for center j at a given time,
- T_j = one for centers in the treatment group and zero otherwise,
- X_{kj} = the k th baseline characteristic for center j (including random assignment block and baseline CLASS assessment),
- e_j = a random error term for center j ,
- α = the regression-adjusted mean outcome for centers in the control group,
- β_0 = the impact of the intervention on the outcome,
- β_k = a regression coefficient for the k th baseline characteristic.

Results

Foundations of Learning Project

QAR-IMPACT/IMPACT/TORLINE/KVW/RESEARCH/K-4_CLASS_spring_impacts_0808.doc 5/8/08 FL

Table 4

Source: MDRC HW_CFUL/Fall - Nov/CLASS - Analysis/Extract/CLASS/ELL/td

Program Impacts on Spring CLASS Scores by Dimension

Variables	Program Group Mean	Control Group Mean	Difference (Impact)	Standard Error	Effect Size
Positive classroom management composite^a	5.78	5.25	0.53 *	0.29	0.64
Positive climate	5.62	5.09	0.53	0.40	0.53
Negative climate	1.12	1.65	-0.53 **	0.21	-0.74
Teacher sensitivity	5.19	4.82	0.37	0.35	0.39
Behavior management	5.43	4.75	0.68 *	0.35	0.63
Quality of language instruction composite	4.18	3.70	0.48	0.34	0.55
Regard for student perspectives	5.07	4.99	0.08	0.32	0.09
Instructional learning formats	4.31	3.68	0.63	0.38	0.60
Quality of feedback	2.90	2.42	0.48	0.33	0.54
Language modeling	4.45	3.72	0.72	0.49	0.59
Productivity	5.47	5.03	0.45 *	0.25	0.52
Student engagement	5.81	5.30	0.50 *	0.27	0.57
Sample size	26	25			

SOURCE: MDRC calculations using CLASS observations in September-October 2007 and April-May 2008.

NOTES: Significance levels are indicated as * p < 0.10; ** p < 0.05; *** p < 0.01.

The table presents adjusted means that control for random assignment blocks and baseline (Fall) CLASS dimension scores.

The effect size equals the impact divided by the standard deviation of the outcome measure for the full sample control group.

^a Negative climate is reverse coded for composite score.

Discussion

- Impacts are evidenced
 - Conceptual Level
 - Policy Level
- Question of timing
 - Impacts at level of classroom processes but not necessarily instruction
 - See impacts on primary elements addressed by the program
 - Do secondary elements like instruction take longer to affect?
 - Increases in productivity and engagement
 - A path to increases in learning opportunities?

Future Directions

- Child-level effects
 - Do classroom-level impacts translate to changes in child behavior?
- Implementation Research
 - Qualitative findings on how teachers experienced the intervention “on the ground”
- Sustainability
 - Do teachers continue to implement successful strategies?
- Chicago
 - Direct child assessments

Results

Foundations of Learning Project

QAR-10-REPORT-FINAL-FACTS-TO-KEYLINE-KVW02080107-12-5 CLASS-C 12/08/08 3/6/09 H.

Table 5

Source: MDRC FOLP Fall - Nov 2008 - Analysis Report (draft) 12/08/08

Program Impacts on CLASS-C Student Outcomes

Outcome	Program Group Mean	Control Group Mean	Difference (Impact)	Standard Error	Effect Size
<u>Teacher dimension</u>					
Teacher communication	2.19	2.36	-0.17	0.12	-0.22
Teacher conflict	1.25	1.46	-0.22	0.07 ***	-0.40
Teacher positive engagement	3.21	3.42	-0.21	0.16	-0.27
<u>Peer dimension</u>					
Peer sociability	3.44	3.53	-0.09	0.15	-0.11
Peer conflict	1.40	1.58	-0.18	0.09 *	-0.27
Peer assertiveness	2.09	2.27	-0.18	0.17	-0.20
Peer communication	2.45	2.57	-0.11	0.16	-0.14
<u>Task dimension</u>					
Task engagement	4.87	4.62	0.25	0.14 *	0.31
Task self-reliance	3.07	3.14	-0.07	0.20	-0.07
Task behavior control	5.40	5.07	0.33	0.19 *	0.35
Sample size - students	128	121			
Sample size - classrooms	26	25			

SOURCE: Based on MDRC calculations of CLASS-C observations in April-May 2008.

NOTES: Significance levels are indicated as * p < 0.10; ** p < 0.05; *** p < 0.01.

Regression-adjusted means control for random assignment status and blocking, baseline Classroom Assessment Scoring System (CLASS) measures, and baseline student characteristics.

Results

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DATA REPORT ON IMPACT STUDY ON LINE KNOWLEDGE BIRTH-4 Teacher Report ERSR 2018 FL

Table 6

Source: MDRC FOLW - Non-ARIS - Analysis Report on Student Outcomes

Program Impacts on Teacher Reported Student Outcomes

Outcome	Program Group Mean	Control Group Mean	Difference (Impact)	Standard Error	Effect Size
BPI total score	7.30	6.40	0.91	1.27	0.11
BPI internalizing	2.66	2.30	0.36	0.58	0.11
BPI externalizing	4.12	3.70	0.43	0.68	0.08
STRS	64.05	65.50	-1.44	1.40	-0.16
Conflict subscale	12.41	12.27	0.14	0.89	0.02
Closeness subscale	34.49	35.77	-1.28	0.91	-0.24
Positive behavior scale					
CFBRS - Work-Related Skills subscale	4.84	4.76	0.08	0.11	0.08
Academic rating scale	80.50	76.41	4.09	4.16	0.21
Language and literacy	35.07	32.61	2.46	1.71	0.27
Math knowledge	25.77	25.40	0.37	1.68	0.05
General knowledge	19.72	18.46	1.25	0.95	0.28
CTRF - attention problems subscale					
Sample size - students	283	248			
Sample size - classrooms	26	23			

SOURCE: Based on MDRC calculations from responses to teacher survey.

NOTES: BPI = Behavior Problems Index; STRS = Student-Teacher Relationship Scale; CFBRS = Cooper Farran Behavioral Ratings Scale; CTRF = Caregiver-Teacher Report Form

Significance levels are indicated as * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Regression-adjusted means control for random assignment status and blocking, baseline Classroom Assessment Scoring System (CLASS) measures, and baseline student characteristics.

BPI internalizing and externalizing scales were created based on factor analysis work.

CFBRS controls for the students' baseline CFBRS score.