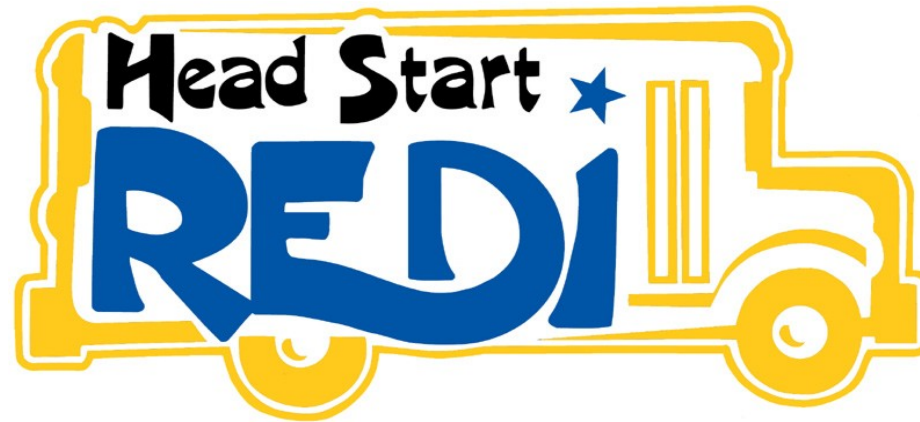# Promoting Academic and Social-emotional School Readiness: The Head Start REDI Program

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The Pennsylvania State University

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- Additional PSU team members: Gloria Rhule, Harriet Darling, Julia Gest, Damon Jones, Marcela Torres, Elaine Berrena, Mary-Beth Gill, Reggie Lozinski and the terrific Redi Trainers and data collection team

- The teachers, students, parents, and program personnel who served as partners in this project in the Huntingdon, Blair, and York County Head Start Programs of Pennsylvania.
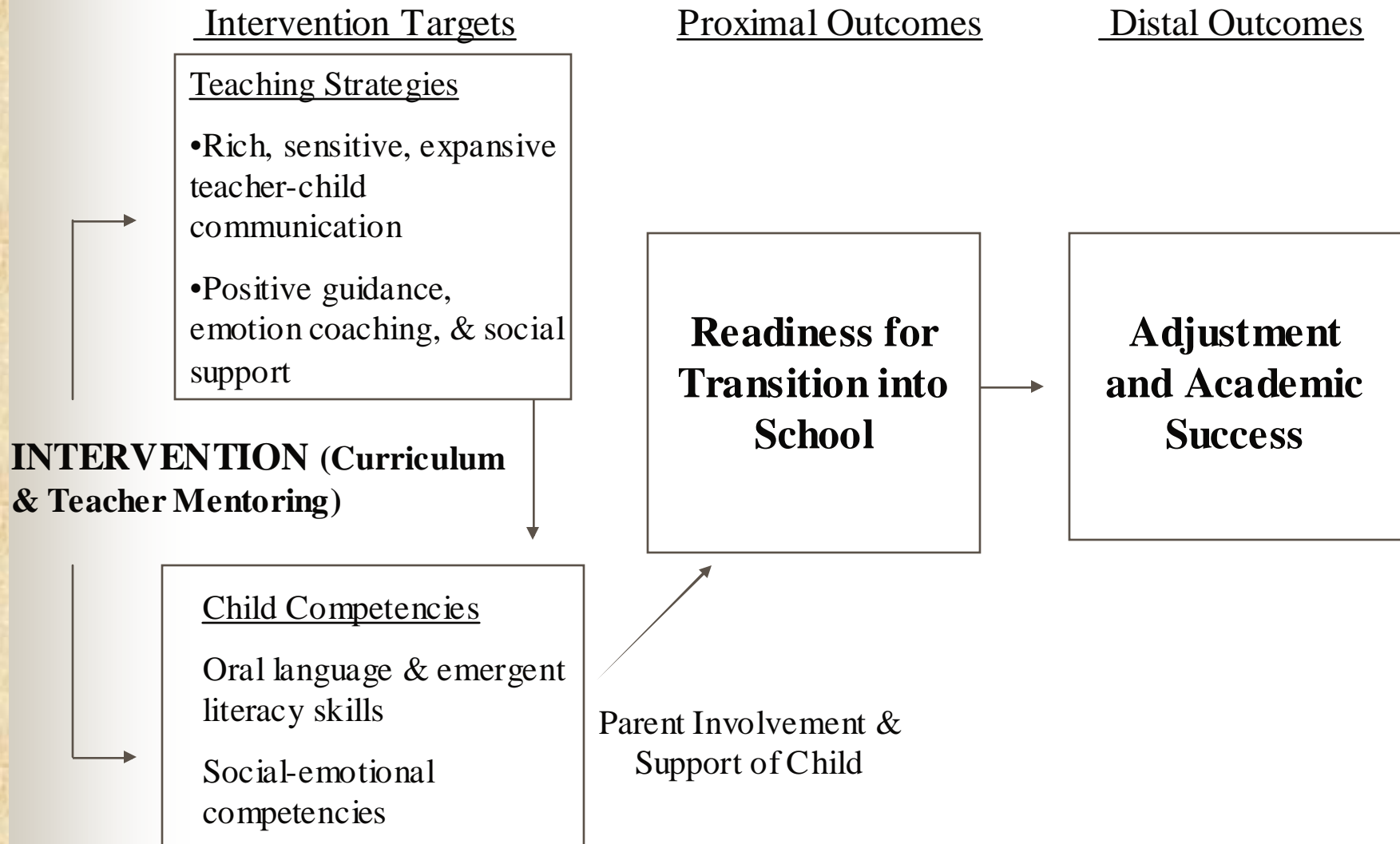
Primary Goals of the REDI Intervention

- Build upon the foundation of strong Head Start programming (High Scope/Creative Curriculum)

- Foster the diffusion of research-based practices in two domains: 1) social-emotional competencies, and 2) language & early literacy skills

- Provide materials and support to teachers to help them implement the scope and sequence of these integrated learning activities

Primary Goals of the REDI Trial

- Utilize a rigorous RCT (randomized-controlled design) to evaluate the impact of the intervention on school readiness.

- Test whether child outcomes are mediated by intervention impact on teaching practices.

REDI Logic Model

Intervention Targets   Proximal Outcomes   Distal Outcomes

Teaching Strategies

- Rich, sensitive, expansive teacher-child communication

- Positive guidance, emotion coaching, & social support

INTERVENTION (Curriculum & Teacher Mentoring)

Child Competencies

Oral language & emergent literacy skills

Social-emotional competencies

Readiness for Transition into School

Adjustment and Academic Success

Parent Involvement & Support of Child

Emphasis on "Teacher Coaching" in Professional Development

- The REDI lessons provide an important foundation for the acquisition of new information

- But, hypothetically, the ways that teachers elicit and respond to "real-life" language and social-emotional exchanges in the classroom is critical to promoting structural reorganization: the integration, consolidation, and internalization of more complex language, social, and emotional capacities.

Intervention Components:
Social-Emotional Competencies

Target Skills

- Prosocial Skills

- Emotional Competence

- Self Control

- Social Problem Solving

Curriculum Components

PATHS Friendship Lessons

PATHS Feeling Lessons

PATHS Turtle Technique

PATHS SPS Lessons

Teaching Strategies

Positive Classroom Management

Praise & Warm Involvement

Emotion Coaching

Induction Strategies

Social Problem-Solving Dialogue

Intervention Components:
Language and Literacy Skills

Target Skills

- Vocabulary

- Syntax

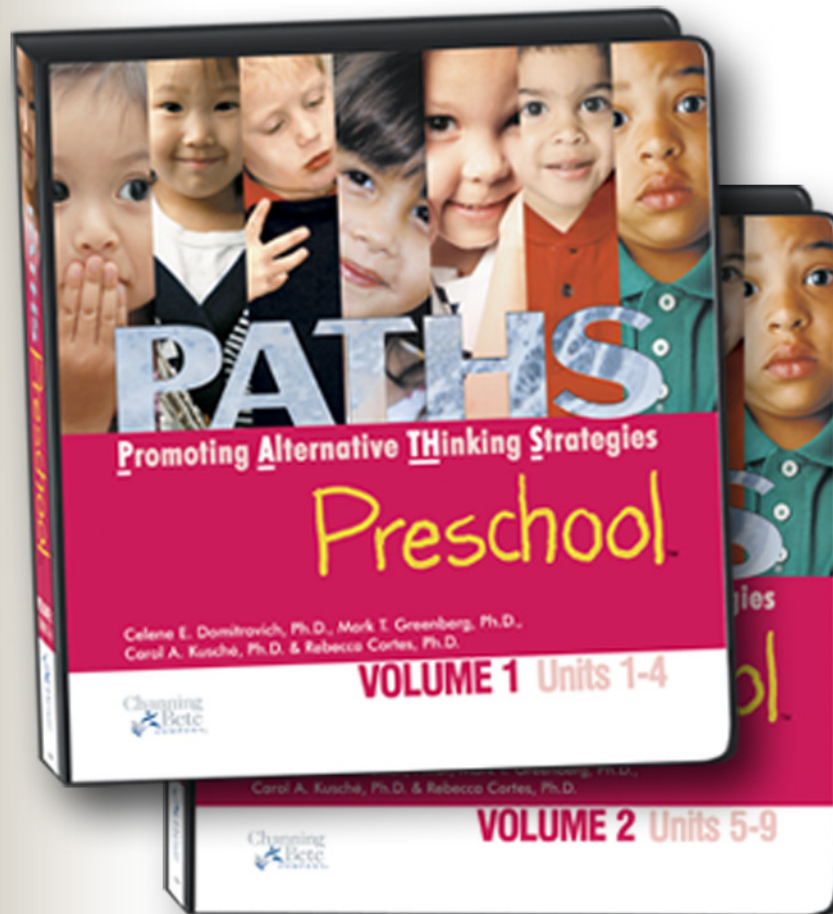- Phonological Sensitivity

- Print Awareness

Curriculum Components

Interactive Reading

Sound Games

Print Center

Teaching Strategies

Language Expansions

Rich & Targeted Vocabulary

Questions & Reflections (to extend narrative)

Decontextualized Talk

Social-Emotional Curriculum

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Interactive Reading

- Based upon the shared reading of Wasik, Bond & Hindman (2006) and dialogic reading of Whitehurst, Arnold et al. (1994).

- 2 books per week, presented with a developmental progression:

    Day 1: Teachers read the first book with scripted interactive questions. They present props to demonstrate the target vocabulary words and encouraged comments and discussion about the story.

    Day 2: Teachers label props, and "walk through" the book, using scripted questions to encourage child recall and comprehension of the narrative. They lead a book-related extension activity to encourage language use and vocabulary practice.

    Day 3: Props and vocabulary words are reviewed, and a new book is read, with scripted questions to encourage interactive discussion.

    Day 4: Children identify vocabulary illustrated in a "prop book", and complete another extension activity.

Link to Social-Emotional Program

1 Book per week is on a "PATHS" theme

Teachers receive mentoring in "language coaching" strategies, such as expansions and grammatical recasts

Sound Games

- Goal was to promote phonological awareness

- Teachers used a 10-15 minute Sound Game activity at least 3 times per week.

- "Sound Games" were based on the work of Lundberg and colleagues (Adams, Foorman, Lundberg & Beeler, 1998).

- Scripted, interactive activities introduced skills in a developmental sequence:
  listening, rhyming, alliteration, words and sentences, syllables, and phonemes

Alphabet Centers

- Developmentally-sequenced set of activities.
- Each child visited the alphabet center several times per week
- Teachers were given materials to track the children's acquisition of letter names
- Materials were provided to support student learning (e.g., letter stickers, a letter bucket, materials to create a Letter Wall, and craft materials for various letter-learning activities, such as letter collages, letter towers, and letter murals).

Research Design Overview

- Participants were 356 4-year-old children across two cohorts in 44 Head Start classrooms, and the teachers & assistant teachers in those classrooms

- Classrooms were matched on demographics, county, length of program day, and then randomized to intervention or "usual practice" comparison

Procedures

- Intervention teachers received 3 days of in-service workshop in August, and a booster in-service day in January. Weekly mentoring began in September and lasted all year.

- In addition to teacher-rated outcomes, other child outcomes were collected outside of the classroom setting (and hence independent of teacher behavior) – including direct assessments of child skills, observations in small playgroups & parent ratings.

- Multi-method child assessments were collected in October and May of the intervention year.

Measurement Strategy

- Direct assessments of child skills in social-emotional understanding and language/emergent literacy domains

- Teacher ratings of child behavior and skills

- Parent ratings of child behavior and skills

- Classroom observations of child behavior and skills and teaching processes

Language and Literacy Child Measures

Expressive One-Word Picture Vocabulary Test (EOWPVT; Brownell, 2000): Direct assessment of child vocabulary.

Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPP; Lonigan,Wagner, Torgesen, & Rashotte, 2002) Direct assessment of early literacy skills including blending, elision, print awareness.

Social-Emotional Child Measures

Assessment of Children's Emotion Skills (*ACES; Schultz, Izard, & Bear, 2004*). Direct assessment of children's emotion recognition skills.

Emotion Recognition Questionnaire (ERQ; Ribordy, Camras, Stafani, & Spacarelli, 1988). Direct assessment of children's emotion understanding using situational vignettes.

Challenging Situations Task (CST; Denham, Bouril, & Belouad, 1994.) Direct assessment of social problem solving skills. Children were shown pictures of Four scenarios with peers were read aloud to children and illustrated with pictures. Children were asked what they would do in each situation.

Teacher Ratings of Child

Social Competence: *Social Competence Scale* (Conduct Problems Prevention Research Group [CPPRG], 1995) - sharing, helping, understanding other's feelings, resolving peer problems independently.

Aggressive-disruptive: *Teacher Observation of Child Adaptation-Revised (TOCA – R)* (Werthamer-Larsson, Kellam, & Wheeler, 1991) and *Preschool Social Behavior Scale – Teacher Form* (PSBS, Crick, Casas & Mosher, 1997) – physical aggression, disruptive behavior, relational aggression.

Learning Engagement: *School Readiness Questionnaire (*this project) - effective and appropriate learning behavior in the classroom, following rules and routines, enjoying learning, following teacher directions.

Parent Ratings of Child

Parent-rated Language Use: 5 ratings regarding the frequency, length, and content of child talk at home.

Reading Involvement at Home: 6 questions about the frequency, amount, and quality of child's engagement in collabortive book-reading at home.

ADHD Rating Scale (DuPaul, 1991) - symptoms of attention-deficit / hyperactivity disorder, based on the DSM

Child Observations

Social Competence Scale (CPPRG, 1995):
Observer ratings following 2 free-play sessions

Aggressive-disruptive behavior: TOCA-R ratings
following 2 free-play sessions

Learning Engagement - based on the Adapted
Leiter-R Assessor Report (Roid & Miller, 1997;
Wakschlag, Leventhal, Briggs-Gowan et al,
2005). Observer ratings following each testing
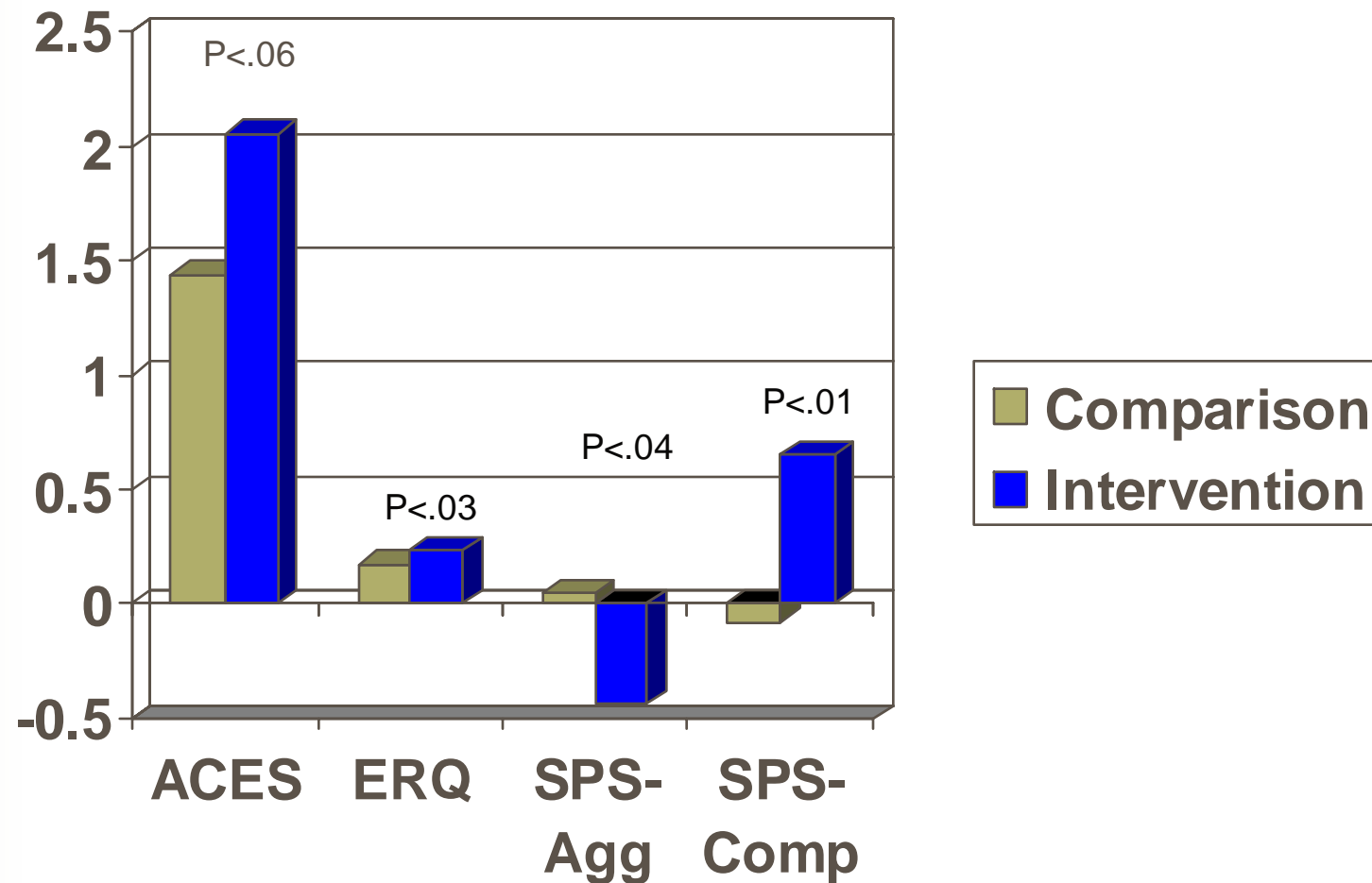session.

Analytic Strategy

- We used HLM to account for the clustering of students within classrooms.

- Child sex and child race were included as Level 1 independent variables.

- Preintervention scores were available for all measures, and these were also included as Level 1.

- Site, cohort, and intervention status were included as Level 2 independent variables in each of the models.
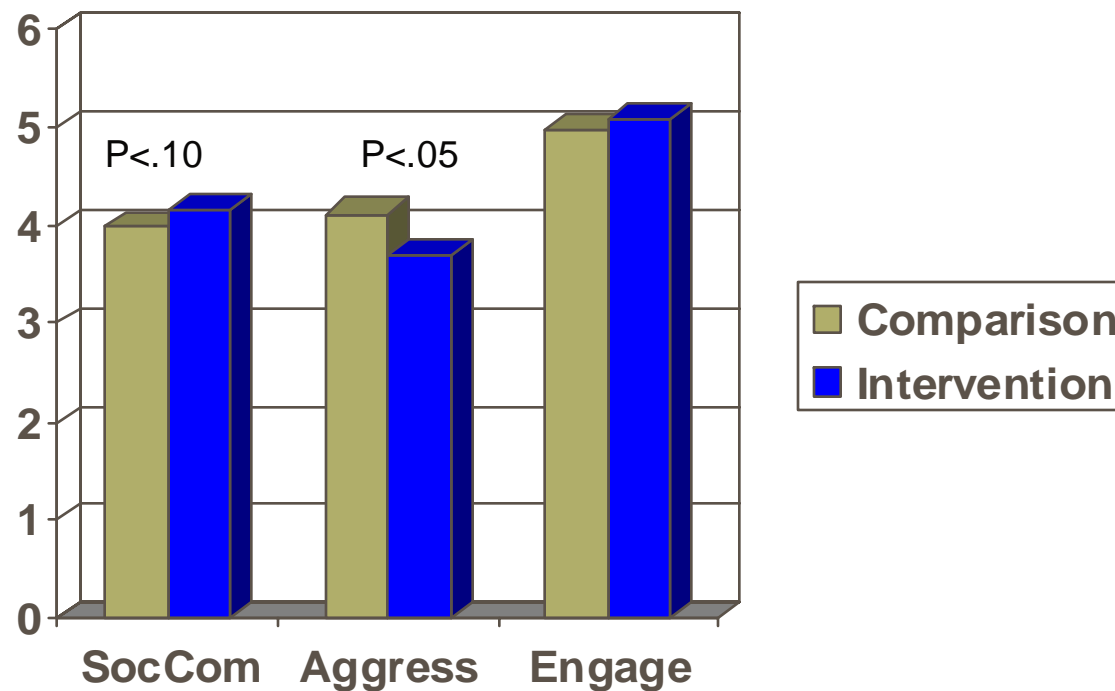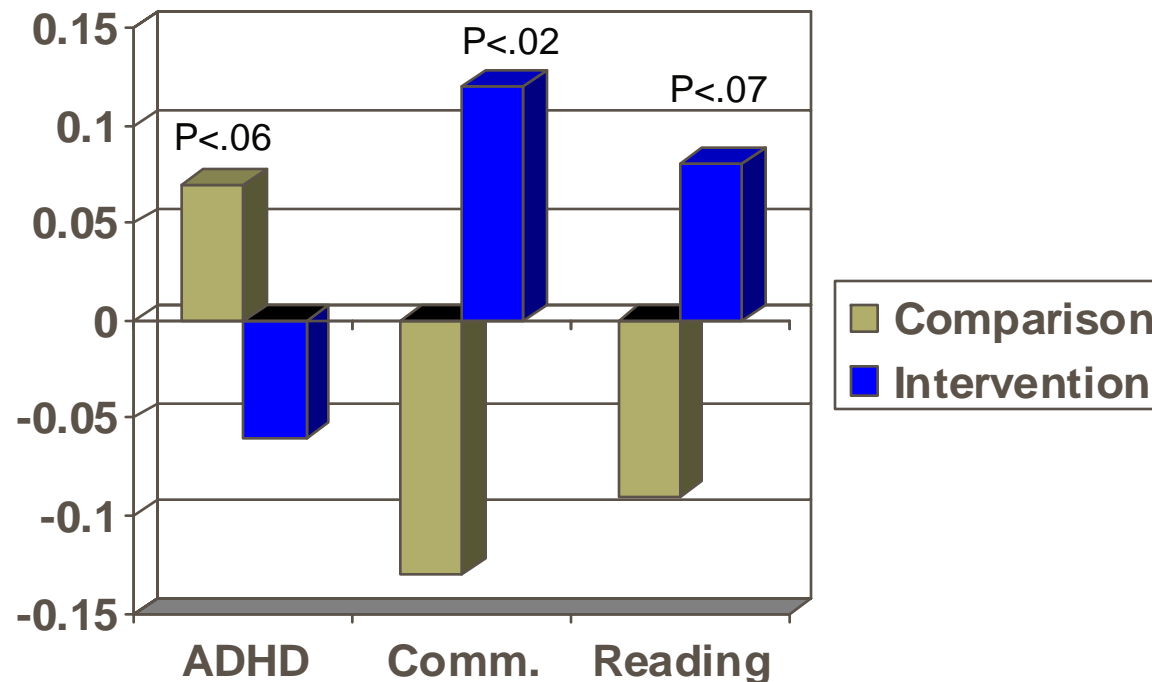
Language & Emergent Literacy Skills
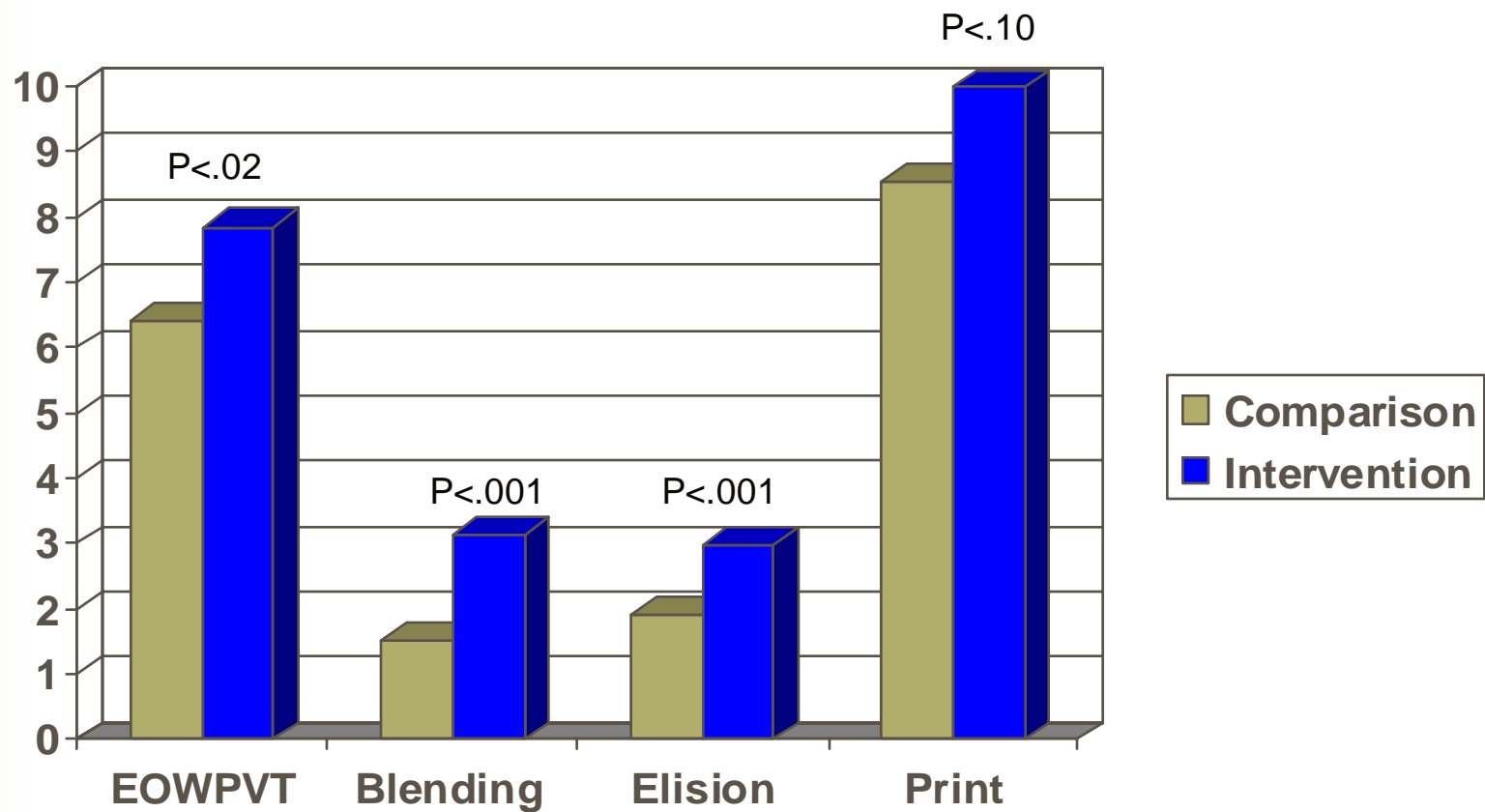
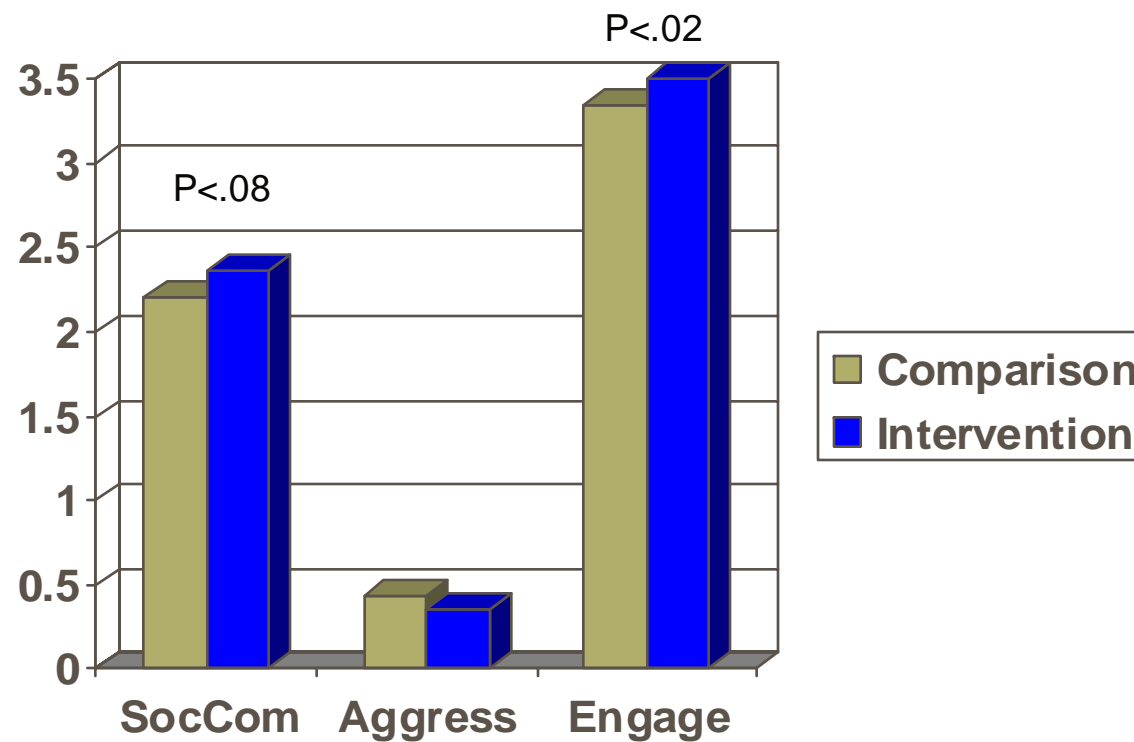# Emotional Understanding and Social Problem-Solving Skills

Teacher Ratings of Social Competence, Aggression, Learning Engagement

Parent Ratings of
Attention Problems, Communication, Reading Involvement

Observer Ratings of
Social Competence, Aggression, Learning Engagement

Summary of Findings

❖ With appropriate support Head Start teachers can effectively implement REDI with fidelity and alter children's outcomes in a one year period.

❖ Effect sizes for direct skill acquisition (emergent literacy, social-cognitive skills) ranged from .15 to .39, with an average effect size of .26.

❖ Effect sizes for generalized behavioral improvements (social competence, learning engagement, aggression) ranged from .10 to .29, with a average effect size of .22.

Process Research Questions

- How effective is the intervention in improving teacher practices?

- To what extent do intervention effects on child outcomes depend upon high-quality teacher practices?

- To what extent are similar vs. different teaching practices associated with child gains in language vs. social-emotional domains?

Classroom Assessment Scoring System (CLASS; LaParo & Pianta, 2003)

- 4 20-minute observation sessions
- 10 items, 7-point scale
- Interrater agreement = 88%

- *Emotional Support*: positive climate, negative climate (R), teachers' sensitivity, overcontrol (R), and behavior management
- *Instructional Support*: productivity, concept development, instructional learning formats, feedback quality, and child engagement

The *Teaching Style Rating Scale* - TSRS (Domitrovich, Cortes, & Greenberg, 2000)

- 3 items, 5-point scale

- Completed after CLASS observation

- Inter-rater agreement = 93% (w/i 1 pt.)

- *Positive Emotion:* emotion expression, emotion modeling, and emotional support

Classroom Language and Literacy Environment Observation-CLEO (Holland-Coviello, 2005)

- 3 - 10" observations at book reading, free play, meal time
- Counts of child-directed utterances: 3 categories
- Ratings of communication quality: 2 scales

- *Directives* – direct instructions to control child behavior
- *Questions* - to elicit information from the child
- *Statements* – answered or informed the child, or commented on ongoing activities

- *Sensitive-responsive Communication* - four 5-point ratings of communication availability, warmth, responsiveness
- *Richness of talk* – four 5-point ratings of vocabulary use, elaboration, cognitive challenge, and decontextualized talk
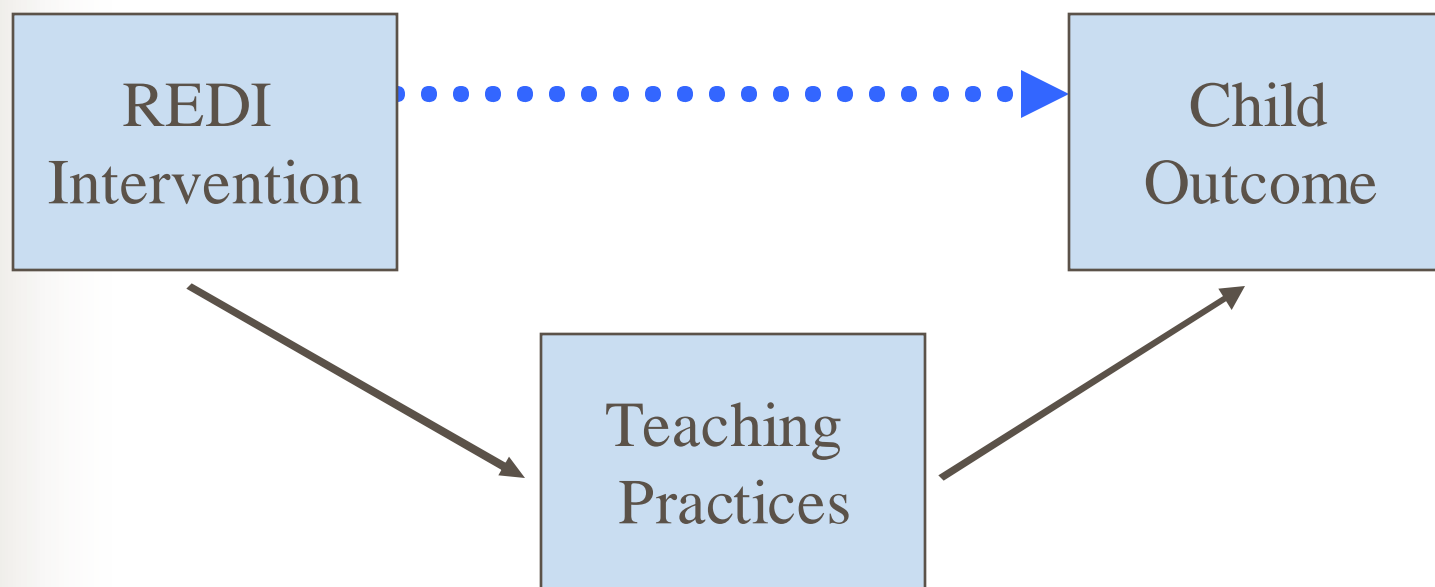
We used random effects regression to determine whether REDI affected teaching practices.

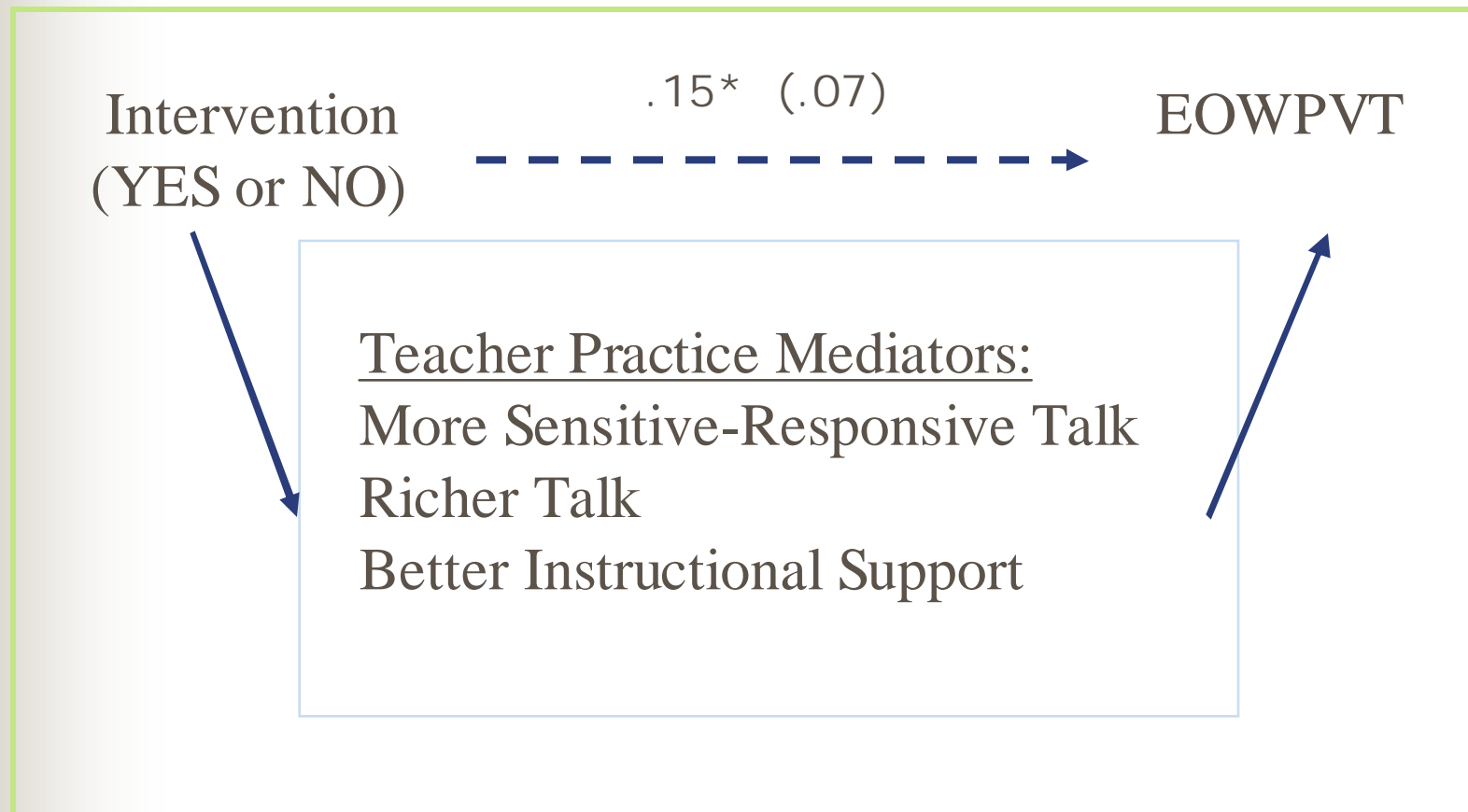|	Coeff	SE	P-value
CLEO-Statements	1.27	.39	.001
CLEO-Questions	1.02	.29	.001
CLEO-Sensitive-Responsive	.36	.11	.002
CLEO-Richness of Talk (Lead teacher only)	.35	.20	.08
CLASS instructional support	.38	.21	.08
CLASS emotional support	.32	.22	.11
TSRS positive emotion	.68	.30	.02

We examined correlations to determine whether those teaching practices were related to child outcomes.

	EOWPVT	Talk @ Home	ERQ	Soc. Comp
Statements				.18
Questions			.10	
Sensitive-Responsive	.12	.11		.13
Richness of Talk	.12	.11		.17
Instructional support	.12	.10		.11
Emotional support				.21
Positive emotion			.13	

Finally, we used HLM analyses to determine how much of the treatment effect on child outcomes was due to (or mediated by) teaching practices.
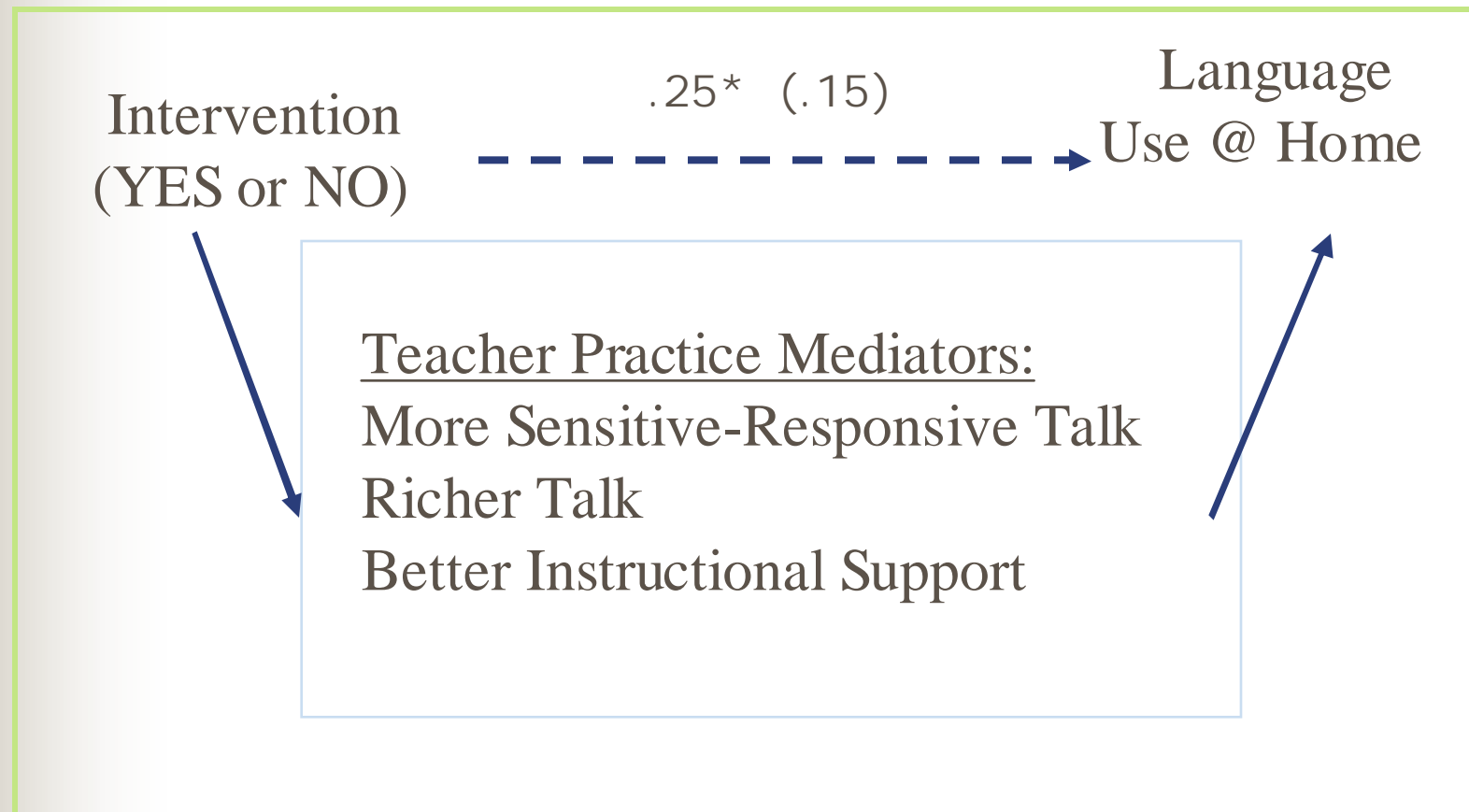
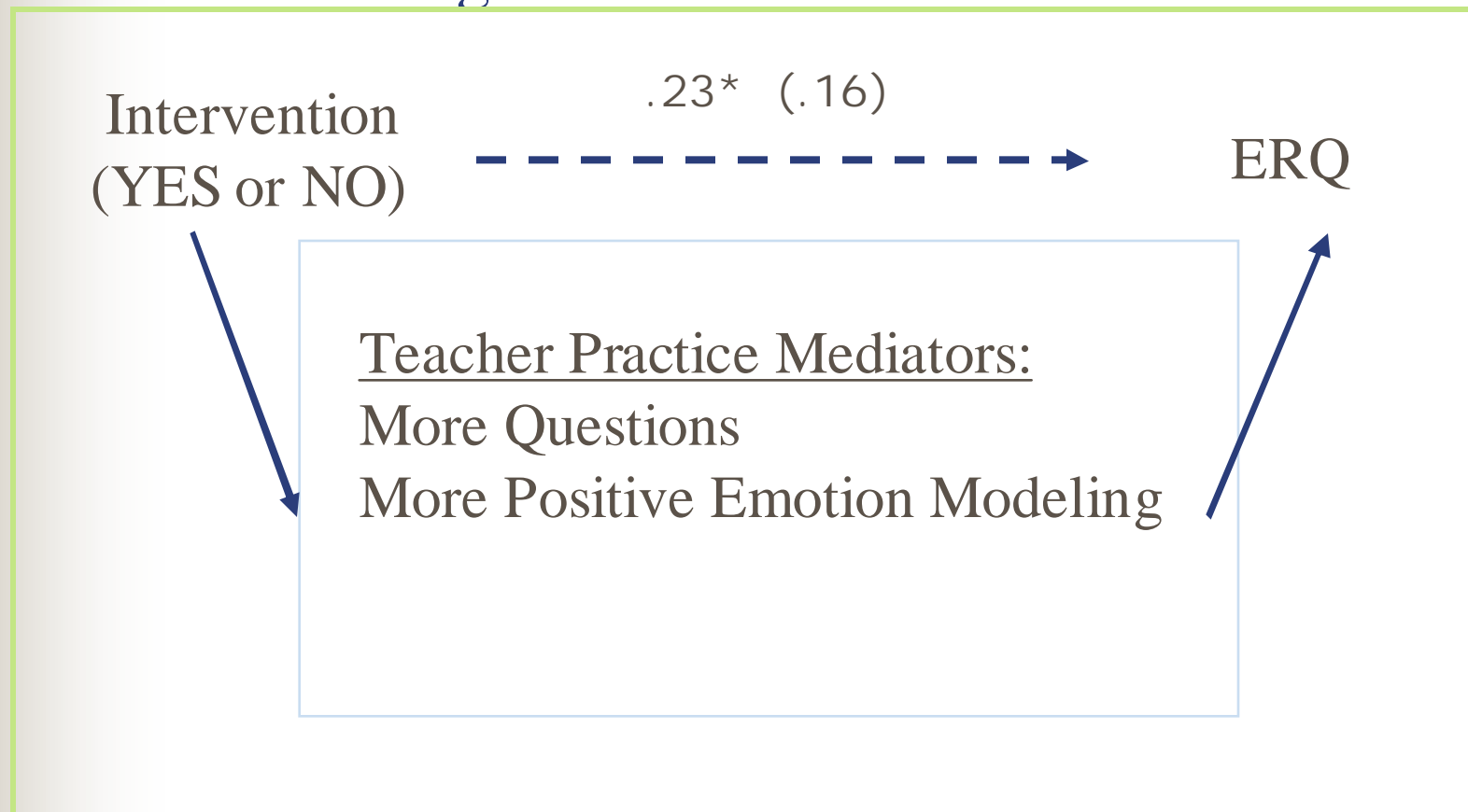# Did teaching practices account for REDI's effect on oral language?

Intervention
(YES or NO)

.15*   (.07)

EOWPVT

Teacher Practice Mediators:
More Sensitive-Responsive Talk
Richer Talk
Better Instructional Support

Teacher practice accounts for 53% of intervention effect

Did teaching practices account for REDI's effect on language use at home?

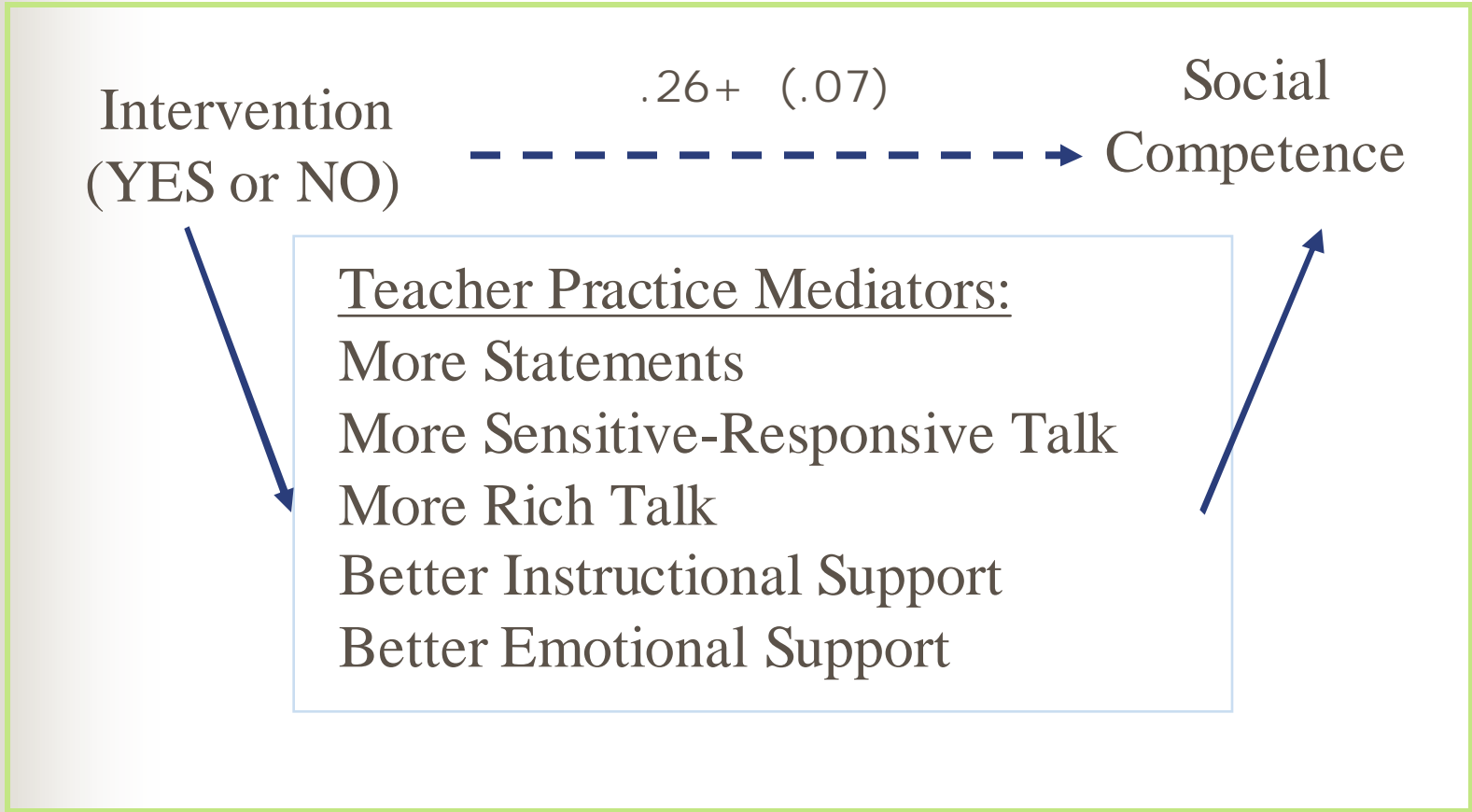Intervention (YES or NO)

.25* (.15)

Language Use @ Home

Teacher Practice Mediators:
More Sensitive-Responsive Talk
Richer Talk
Better Instructional Support

Teacher practice accounts for 67% of intervention effect

Did teaching practices account for REDI's effect on emotion knowledge?

Intervention
(YES or NO)

.23*   (.16)

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ERQ

Teacher Practice Mediators:
More Questions
More Positive Emotion Modeling

Teacher practice accounts for 30% of intervention effect

Did teaching practices account for REDI's effect on social competence?

Intervention
(YES or NO)

.26+ (.07)

Social
Competence

Teacher Practice Mediators:
More Statements
More Sensitive-Responsive Talk
More Rich Talk
Better Instructional Support
Better Emotional Support

Teacher practice accounts for 77% of intervention effect

Study Conclusions

- The identified teaching practices, reflecting language use and emotional support in the classroom, predicted child learning in both language and social-emotional skill domains

- Sensitive-responding, rich talk, and instructional support, in particular, fostered vocabulary growth, generalized language use at home, and social competence in peer interactions.

More Conclusions

- Teacher language use, instructional support, and also emotional support contributed to gains in socially competent (prosocial, well-regulated) behavior with peers.

- "Emotion coaching" in the classroom (teacher modeling & supporting emotion talk) uniquely predicted emotion recognition skills

Mediation of Intervention

- The REDI curriculum with teacher mentoring fostered improvements in teaching practices.

- Those improvements accounted for much of the intervention impact on language and social-emotional outcomes, validating the importance of focusing on professional development and teaching practices along with research-based curriculum to improve Head Start impact.