

Using Observations of Children's Classroom Interactions to Predict School Readiness: Validity of the Individualized Classroom Assessment Scoring System (inCLASS)



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BACKGROUND

In recent years, early education researchers have emphasized the importance of classroom-based interactions to promote young children's school readiness, including language and literacy (Burchinal et al., 2008; Connor et al., 2005) and self-regulation (Morrison et al., 2010).

To some extent, research on classroom interaction processes has been limited in that the focus is most often on understanding how *teachers* promote positive interactions in the classroom setting, de-emphasizing the role that children have in creating their own learning environments.

To increase our understanding of how interactive processes within preschool classrooms are associated with school readiness, there is a need for more research that focuses on learning processes that occur at the child level and how these relate to school readiness competencies.

RESEARCH QUESTIONS

Study 1

RQ1: Is children's engagement with teachers, peers, and tasks associated with gains in children's behavioral self-regulation skills during preschool?

RQ2: To what extent does children's positive engagement with teachers and/or peers moderate the influence of less optimal task interactions on their self-regulation?

Study 2

RQ1: Is children's engagement with teachers, peers, and tasks associated with gains in children's language/literacy skills from preschool into kindergarten?

METHODS

Participants:

- 381 children 3- and 4-year old (50.3% girls)
- Race/ethnicity: 70% Latino; 16% Caucasian
- Home language: 30% English; 37% Spanish; 28% Spanish-English
- 103 preschool classrooms (31% Head Start)

Procedure:

- Data were collected in Fall 2007 and Spring 2008.
- Up to 4 children per classroom were observed in alternating cycles across the morning (generally 4 cycles per child).
 - Each observation cycle was 15 minutes (10 minutes observing, 5 minutes coding).
 - Teachers completed ratings on all observed children.
 - 2 children were randomly selected to complete direct assessments.

School Readiness Outcome Measures:

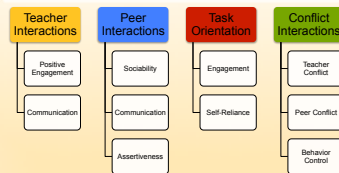
Self-Regulation

- Compliance/Executive Control (Pencil Tap)
- Impulse Control (Gift Wrap)
- Task Orientation (TCRS; Hightower et al., 1986)

Language/Literacy

- Language/Literacy Skills (ARS; Rock & Pollack, 2002)
- Receptive Vocabulary (PPVT)
- Expressive Vocabulary (WJ III Tests of Achievement)
- Letter Knowledge (Letter Naming)

INCLASS OBSERVATIONS



The inCLASS is a child-focused observational tool that examines four domains of classroom-based interactions in early childhood (see Figure to the left):

- Ten dimensions are coded on a 7-pt scale (1=low, 7=high; Downer et al., 2010), using behavioral markers in a standardized manual.
- Inter-rater reliability was calculated across 22% of all cycles; rater agreement within 1 ranged from 87%-99% in the Fall and 92%-99% in the Spring.

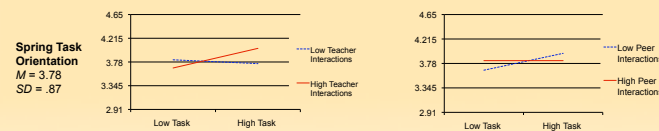
STUDY 1: RESULTS

Two-level HLM models were fit, in which children were nested within classrooms. Initial self-regulation was controlled, as well as a set of demographic covariates. Table 1 shows main effects (RQ1), followed by figures that illustrate (RQ2) two significant interactions (out of the 6 TeacherXTask and PeerXTask tested).

Table 1: Association of Classroom Interactions with Change in Children's Self-Regulation during Preschool

	Compliance/Executive Control		Impulse Control		Task Orientation	
	Est.	SE	Est.	SE	Est.	SE
Intercept	.57***	.06	-.09	.11	3.82***	.14
inCLASS						
Teacher	.13***	.05	-.01	.06	.06	.06
Peer	.04	.05	.13†	.08	.02	.07
Task	-.06	.04	-.06	.07	.13†	.07
Conflict	-.06	.07	-.35*	.16	-.01	.09

Note: † $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$



Study 1: Summary of Findings

Main effects (RQ1)

- Children who engaged negatively with teachers and peers demonstrated reductions in impulse control.
- Children who engaged positively with teachers showed increased compliance/executive control.
- Trends were noted in that:
 - Children who engaged positively with peers showed increases in impulse control.
 - Children who engaged positively with tasks were rated as improving on task orientation.

Moderation (RQ2)

- Children evidenced greater increases in task orientation when they engaged positively with their teacher and were highly engaged in tasks and activities during the preschool day.
- Engagement in classroom tasks was particularly important for developing task-oriented skills for children who engaged less positively with their peers.

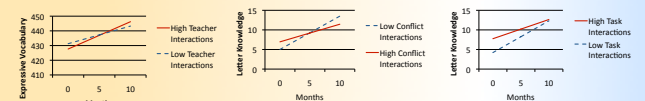
STUDY 2: RESULTS

Three-level HLM models were fit, in which waves of data (preschool fall and spring, and fall of next school year) were nested within children and children were nested within classrooms. Child and classroom demographics were included as covariates. Figures illustrate growth patterns.

Table 2: Association of Classroom Interactions with Change in Language/Literacy Outcomes into Kindergarten

	Receptive Vocabulary		Expressive Vocabulary		Letter Knowledge	
	Est.	SE	Est.	SE	Est.	SE
Slope	1.38***	.20	1.53***	.19	.65***	.10
inCLASS						
Teacher	-.16	.14	.33*	.13	.08	.07
Peer	-.17	.16	-.11	.14	.12	.08
Task	-.03	.15	.02	.14	-.16*	.07
Conflict	-.15	.21	-.22	.19	-.20†	.10

Note: † $p \leq .10$; * $p \leq .05$



Study 2: Summary of Findings

- Children who engaged positively with preschool teachers made greater gains in expressive vocabulary from preschool into kindergarten.
- Children who kept conflict with teachers and peers to a minimum learned more letters into kindergarten.
- Children who were more highly engaged in classroom tasks during preschool learned fewer letters into kindergarten; however, these children also started out knowing more letters in the fall, so this could be a ceiling effect.

IMPLICATIONS & FUTURE DIRECTIONS

Implications:

- Important for teachers, and individuals who support teachers' work, to recognize that providing opportunities for children to engage in high quality interactions throughout their preschool day can contribute to the development of key school readiness skills.

Limitations and Future Directions:

- Effects were only found for certain self-regulation and language/literacy outcomes and tended to be small.
 - More than two days of observations during the year may be necessary for a strong, stable estimate of children's engagement in the classroom.
- Children in the current sample were mostly Latino and dual language learners.
 - Next steps need to involve data collection in a more diverse sample, as well as further exploration of current data to understand how language may play a role in the link between classroom experience and school readiness.

ACKNOWLEDGEMENTS

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