The Influence of Classrooms on Children and Children on Classrooms: Testing Bidirectional Associations During a Typical Day of Preschool

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BACKGROUND
Although learning may be teachers’ ultimate objective, they are often focused increasing children’s positive engagement with classroom resources. Teachers structure the classroom to provide learning experiences for children, and in turn children interact with the environment. More research is needed to understand these reciprocal interactions (Bronfenbrenner & Morris, 2006). The purpose of the present study is to examine these longitudinal associations in the context of a typical preschool day.

HYPOTHESES
We hypothesized four sets of bidirectional associations in regards to teachers’ behavior (emotional and organizational supports) and individual children’s behavioral engagement (positive and negative, with teachers and tasks). We expected:
• Teachers’ emotionally supportive behaviors and children’s positive engagement with teachers to be positively related over time.
• Teachers’ emotionally supportive behaviors and children’s negative engagement to be negatively related over time.
• Teachers’ organizationally supportive behaviors and children's negative engagement to be negatively related over time.
• Teachers’ organizationally supportive behaviors and children’s task orientation to be positively related over time.

METHOD
Participants: 606 children (306 girls and 300 boys) that were on average 4.18 years old (SD = .45) in 314 classrooms from preschool classrooms in 8 states.

Procedure: A typical data collection involved observing the CLASS (15-minute observation and 10-minutes of coding cycles for each). Classroom and child observations were repeated three to four times across a day.

OBSERVATIONAL INSTRUMENTS
The Individualized Classroom Assessment Scoring System (iCLASS; Døwer et al., 2010) measures a child’s classroom engagement using 10 dimensions aggregated into 4 domains (see Figure 1). ICCs averaged .80 (ranging from .65–.87) based on blind double-coding during 20% of live visits.

DATA ANALYSIS
Using structural equation modeling, this study utilized cross-lagged autoregressive models to test hypotheses. The cross-lagged aspect of the models refers to the fact that subsequent models add in associations (one set at a time) between domains of variables across time. These cross lags allowed us to test if teachers’ behaviors set the stage for children’s later behavior and vice versa. Initially, all possible single cross lags were tested to see if each of these models accounted for the data better than the unconditional model. Then, a model was run that included both sets of lagged relationships (see Figure 3).

RESULTS
For the SEM analyses represented in Table 1, we were looking for the best fitting model in relative terms.

DISCUSSION
• Bidirectionality was evident between child and teacher behaviors in regards to teachers’ emotionally supportive behaviors and children’s positive engagement with teachers, as well as teachers’ organizationally supportive behaviors and children’s negative engagement.
• A unidirectional association was evident between teachers’ organizationally supportive behaviors and children’s later task orientation.
• There was no evidence for any lagged associations between teachers’ emotionally supportive behaviors and children’s negative engagement.

CONCLUSION & IMPLICATIONS
Some teacher and child behaviors were linked bidirectionally, but not all. That is, certain sets of behaviors operate more independently than others. Thus, transactional views of development do not hold universally across behaviors or at least units of analysis. It could be that over longer periods of time, the transactional nature of these relations would become more apparent.

Classroom-to-child associations were generally stronger than child-to-classroom associations. This suggests that, overall, there is some efficiency offered with teacher-oriented interventions. Yet, multi-tiered interventions, like in an RTI model, that target both teacher and individual children’s behavior may have the largest positive impacts.

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