

The Added Value of Continuing Child-Initiated Instruction from Preschool to Kindergarten: Relations to Academic Achievement

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<h2>BACKGROUND</h2> <ul style="list-style-type: none"> Classroom instructional approaches in a select subset of educational settings tend to differ as measured on two dimensions. Teachers deliver <i>one</i> or <i>more</i> activities direct <i>one</i> or <i>more</i> students. Child <i>initiated</i> or <i>teacher</i> initiated activities allow child to select activities from on display options. A blend of teacher directed and child initiated instruction, as well as increasingly child initiated instruction in general, are associated with positive outcomes in outcomes (Duncan et al., 2013). 	<h2>METHODS</h2> <h3>Participants</h3> <ul style="list-style-type: none"> Classroom teachers (Elementary School Teachers) [N=218] 10% lower socioeconomic status children who attended Child-Passive Care (CPC) preschool as part of the CLS from 1983-1995 (Thompson, 2002) 10% Black <h3>Measures</h3> <h4>Instructional Approach</h4> <ul style="list-style-type: none"> Preschool and kindergarten instructional approaches and teacher characteristics were assessed and controlled by group variables. Teacher ratings and preschool classroom data, in case of those with no data (Cohen's kappa = .75, see Figure 1). Kindergarten instructional data categorized as high or low on child-initiated. <h4>Figure 1. Teachers: Frequency of Teachers and Child Activity in Each Instructional Approach</h4> <h4>Academic Outcomes</h4>	<h2>RESULTS</h2> <h3>Analysis Results</h3> <ul style="list-style-type: none"> Full Sample Analysis: Hierarchical linear regression analyses were conducted to measure the Preschool HT-ATC, a Kindergarten, Child-Initiated Instruction on kindergarten, first, and on eighth grade reading achievement, after controlling for covariates. Regression analyses: Only of children risk and gender. <h3>Full Sample Analysis</h3> <h4>Figure 2. Hierarchical Regression: Preschool HT-ATC, a Kindergarten, Child-Initiated Instruction on Kindergarten Reading Scores</h4>	<h2>CONCLUSIONS</h2> <h3>Key Takeaways</h3> <ul style="list-style-type: none"> A blend of high-quality of child-initiated and teacher-directed instruction in preschool and kindergarten is associated with positive outcomes in child, as measured on two dimensions. It is a viable pathway to enhance students' opportunities to enhance students' opportunities. These findings indicate that child-initiated instruction, as well as increasingly child-initiated instruction in general, are associated with positive outcomes in outcomes (Duncan et al., 2013).
<h2>RESEARCH QUESTIONS</h2> <h3>Research Questions</h3> <ol style="list-style-type: none"> What is the relationship of continuing high-quality child-initiated instruction in preschool and kindergarten to child reading and math achievement? What is the relationship of continuing high-quality child-initiated instruction in preschool and kindergarten to child reading and math achievement? What are the relationships between the frequency of high-quality child-initiated instruction in preschool and kindergarten to child reading and math achievement? What are the relationships between the frequency of high-quality child-initiated instruction in preschool and kindergarten to child reading and math achievement? 	<h2>REFERENCES</h2> <p>Thompson, 2002</p> <p>Duncan et al., 2013</p> <p>Thompson, 2002</p> <p>Duncan et al., 2013</p>	<h2>ACKNOWLEDGMENTS</h2> <p>This work was supported by National Institute of Child Health and Human Development (R01HD043215) and the NIH & Minnesota Grants. We thank the University of Minnesota, the Chicago Public School District for their collaboration in data collection, data analysis, and reporting.</p> <p>Correspondence: Jaesiree R. Ernst, jernst313@umn.edu (Jaesiree R. Ernst)</p>	<h2>CONTACT</h2> <h3>Authors/Institutions</h3> <p>This work was supported by National Institute of Child Health and Human Development (R01HD043215) and the NIH & Minnesota Grants. We thank the University of Minnesota, the Chicago Public School District for their collaboration in data collection, data analysis, and reporting.</p> <p>Correspondence: Jaesiree R. Ernst, jernst313@umn.edu (Jaesiree R. Ernst)</p>

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BACKGROUND

- Classroom instructional approach is a salient aspect of educational quality and is often examined on two dimensions:
 - *Teacher-directed instruction* involves direct instruction via structured lessons.
 - *Child-initiated instruction* involves allowing the child to select activities from multiple options.
- A blend of teacher-directed and child-initiated instruction as well as exclusively child-initiated instruction in preschool are associated with positive academic outcomes (Graue et al., 2004).
- Less research examines whether there is added value of continuing child-initiated instruction into kindergarten.

RESEARCH QUESTIONS

Research Question

1. What is the added value of continuing high frequency child-initiated instruction into kindergarten on child reading and math achievement?

Hypotheses

1a) We hypothesized children exposed to a higher frequency of child-initiated instruction in both preschool and kindergarten would have higher reading and math scores in kindergarten.

1b) We also hypothesized those exposed to higher frequency child-initiated instruction in preschool and kindergarten would demonstrate sustain gains in math and literacy over time.

METHODS

Participants

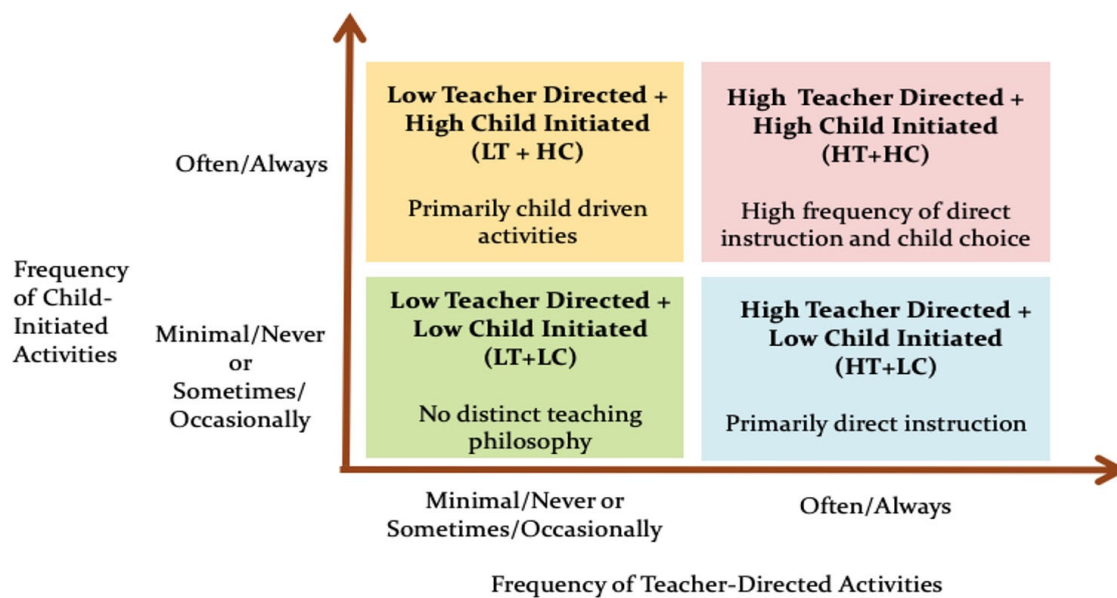
- Data drawn from the Chicago Longitudinal Study (CLS)
- 978 low-income children who attended Child Parent Center (CPC) preschools as part of the CLS from 1983-1985 (Reynolds, 2000)
- 93% Black

Measures

Instructional Approach

- Preschool and kindergarten instructional data were obtained from retrospective teacher-reports and validated by program evaluators. Raters categorized preschool classrooms into one of four instructional groups (Cohen's kappa = .75; see Figure 1).
- Kindergarten instruction was categorized as high or low on child-initiation.

Figure 1. Relations between Frequency of Teacher and Child Activity in Each Instructional Approach



Academic Outcomes

- Kindergarten, third, and eighth grade reading and math achievement as measured by the Iowa Test of Basic Skills

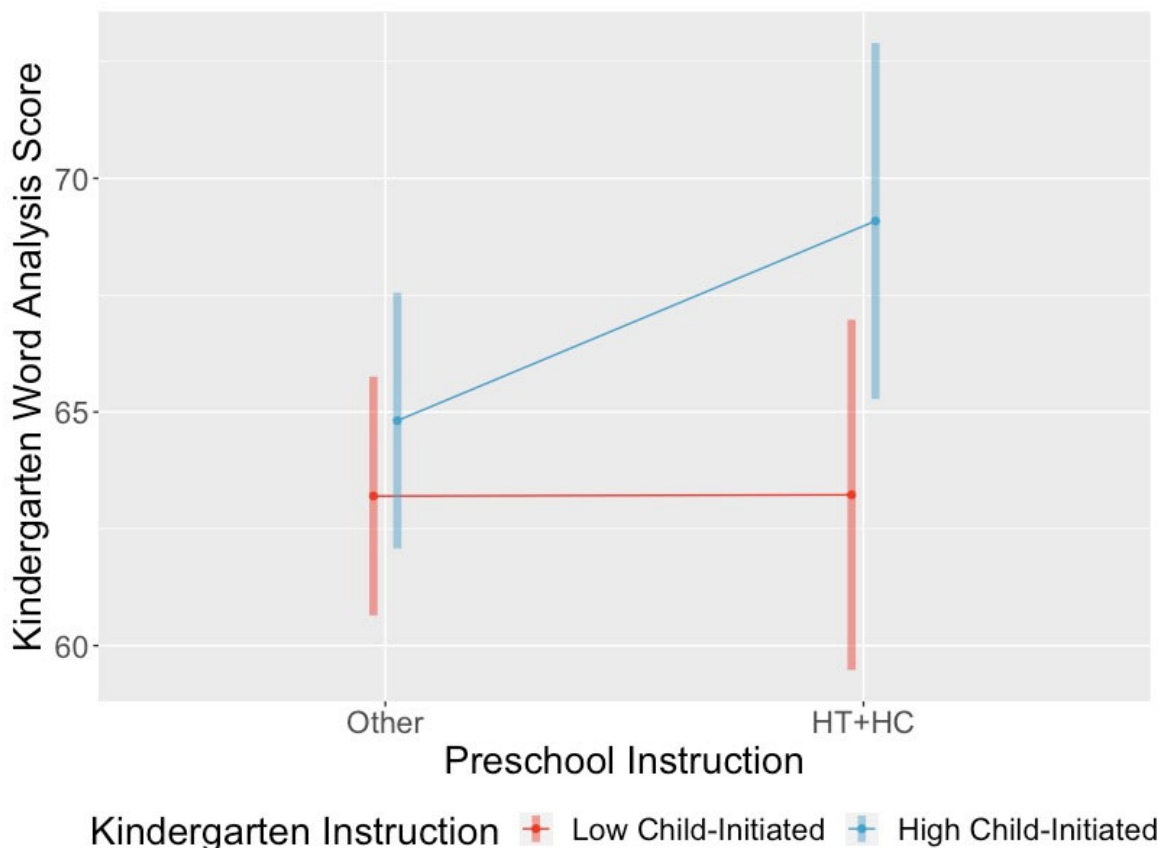
RESULTS

Analysis Strategy

- *Full Sample Analyses*: Hierarchical linear regressions were conducted to examine the Preschool HT+HC x Kindergarten Child-Initiated interaction on kindergarten, third, and eighth grade reading achievement, while controlling for covariates.
- *Subgroup analyses*: Early childhood risk and gender.

Full Sample Analyses

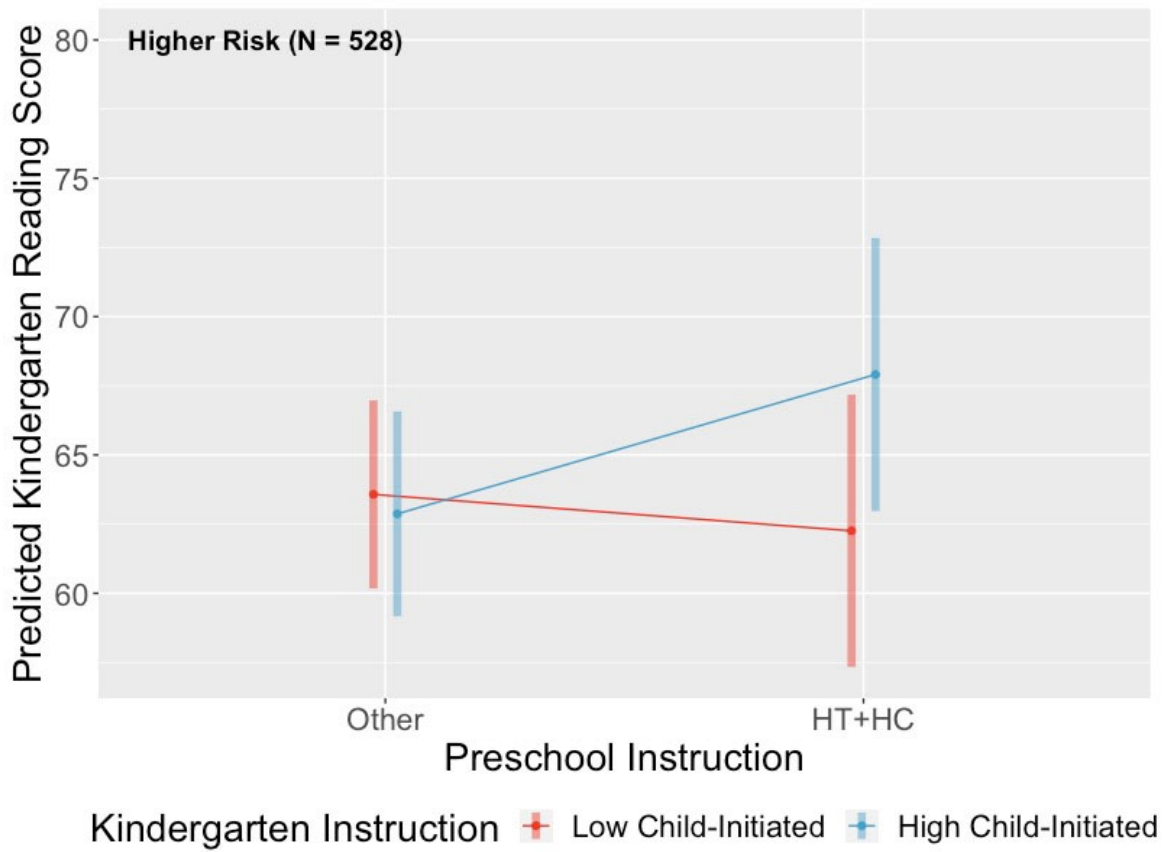
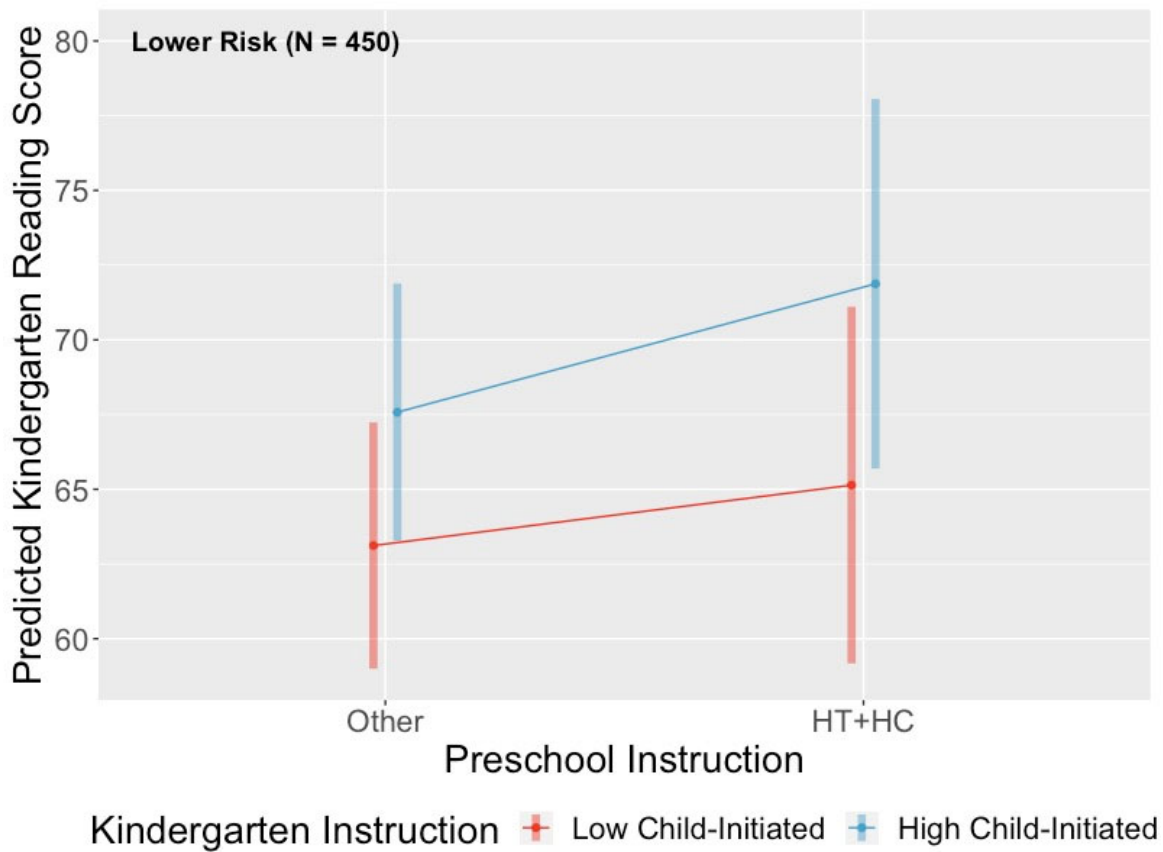
Figure 2. Graphical Representation Preschool HT+HC x Kindergarten Child-Initiated Interaction on Kindergarten Reading Scores



- A significant Preschool HT+HC x Kindergarten Child-Initiated interaction emerged for kindergarten reading; effects of kindergarten child-initiated instruction were only present for children exposed to HT+HC preschool instruction
- Children exposed to Preschool HT+HC and high child-initiated kindergarten instruction ($M = 69.1$) had higher reading scores on average than those exposed to preschool HT+HC and kindergarten low child-initiated instruction ($M = 64.8$; $ES = .22$).
- Similar patterns emerged for reading and math in third and eighth grade.

Subgroup Analyses

Figure 3. Illustration of Subgroup Effects for Lower and Higher Early Child Risk Status on Kindergarten Reading Scores



Note. Regarding risk status, we dichotomized the sample by lower (≤ 4) and higher risk (≥ 5) using the Risk Index from age 0-3. The Preschool Instruction “Other” category refers to HT+LC, LT+HC, or LT+LC preschool instruction. Bars indicate 95% confidence intervals.

Early Risk

- In the lower-risk sample a main effect of Kindergarten Child-Initiated emerged regardless of preschool instruction.
- In the high-risk sample, a Preschool HT+HC x Kindergarten Child-Initiated interaction emerged that was similar to the full sample (Figure 3).

Gender

- Different patterns emerged for males and females.
- The Preschool HT+HC x Kindergarten Child-Initiated interaction pattern described for the full sample was present for females, but not males.

CONCLUSIONS

Key Takeaways

- A blend of high frequency child-initiated and teacher-directed instruction in preschool and continuation of child-initiated instruction in kindergarten is a viable pathway to sustaining academic gains
- These findings indicate preschool to kindergarten child-initiated instructional continuity might be particularly valuable for females and children of higher early life risk.
- These results are particularly important for early childhood education given Bassok et al.'s (2016) finding that kindergarten classrooms are shifting away from child-initiated instruction and toward more teacher-directed instruction.

Future Research

- Assess continuity from preschool to third grade
- Examine other elements of school programs that might contribute to sustaining gains
- Examine outcomes beyond academic achievement.

CONTACT

Acknowledgments

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Jasmine R. Ernst is a third year developmental psychology PhD student at the University of Minnesota Institute of Child Development. Her research primarily focuses on the interrelations between executive function, academic skills, and learning in the preschool years. Additionally, she examines the links between early educational experiences and later academic and well-being outcomes.

ABSTRACT

Introduction: Early educational experiences have the potential to yield sustained effects into adulthood. One component of early education which might shape child outcomes is instructional approach. Instructional approach is commonly examined on two dimensions: teacher-directedness and child-initiation. Teacher-directed instruction emphasizes teacher-led structured lessons. Child-initiated instruction emphasizes allowing children to choose which activities they engage in. A blend of teacher-directed and child-initiated instruction as well as exclusively child-initiated instruction in preschool are associated with positive academic outcomes (Graue et al., 2004). We extended this research by examining the added value of continuing child-initiated instruction into kindergarten on child reading achievement.

Methods: Participants included 978 low-income children (93% Black) in the Chicago Longitudinal Study who attended Child-Parent Centers from 1983-1985. Preschool and kindergarten instructional information was obtained from retrospective teacher-reports and validated by program evaluators. Preschool instructional type was categorized as: high teacher-directed + child-initiated (HT+HC), low teacher-directed + child-initiated (LT+LC), low teacher-directed + high child-initiated (LT+HC), or high teacher-directed + low child-initiated (HT+LC). No distinct teaching philosophy was categorized LT+LC. Kindergarten instructional type was coded as high child-initiated or low child-initiated. We opted to focus on kindergarten child-initiation because this dimension was previously associated with positive long-term outcomes (Schweinhart & Weikart, 1997).

Results: Hierarchical linear regressions were conducted to examine the Preschool HT+HC x Kindergarten Child-Initiated interaction on kindergarten, third, and eighth grade reading achievement as measured by the Iowa Test of Basic Skills, while controlling for covariates (Step 4). A significant Preschool HT+HC x Kindergarten Child-Initiated interaction emerged for kindergarten reading, $F(9, 968)=8.51, p<.001$; effects of kindergarten child-initiated instruction were only present for children exposed to HT+HC preschool instruction. Children exposed to Preschool HT+HC and high child-initiated kindergarten instruction had higher reading scores on average than those exposed to preschool HT+HC and kindergarten low child-initiated instruction (effect size=.22). There was no effect of kindergarten instruction for children exposed to preschool HT+LC, LT+HC, or LT+LC. Similar patterns emerged for reading achievement in third grade, $F(9, 968)=15.57, p<.001$, and eighth grade, $F(9, 968)=10.7, p<.001$ (Figure 1).

Next, we examined subgroup effects by gender and early childhood risk on kindergarten reading. Different patterns emerged for males and females. The Preschool HT+HC x Kindergarten Child-Initiated interaction pattern described for the full sample was present for females, but not males. Regarding risk status, we dichotomized the sample by lower (≤ 4) and higher risk (≥ 5) using the Risk Index from age 0-3 (description in Figure 1 note). In the lower-risk sample a main effect of Kindergarten Child-Initiated emerged regardless of preschool instruction. In the high-risk sample, a Preschool HT+HC x Kindergarten Child-Initiated interaction emerged that was similar to the full sample (Figure 2). Final results will also examine math outcomes.

Discussion: These results indicate the combination of Preschool HT+HC and Kindergarten Child-Initiated instruction is a viable pathway to sustaining academic gains, particularly for females and children of higher early life risk. Our results are particularly informative given Bassok et al.'s (2016) evidence indicating kindergarten classrooms are shifting away from child-initiated instruction and toward more teacher-directed instruction.