

Results in Brief:

Preschool Through Third Grade Alignment and Differentiated Instruction: A Literature Review

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Research shows that participation in a high-quality preschool can improve young children's readiness skills for elementary school, positively influencing behavioral, social-emotional, and cognitive outcomes. Specifically, for children who may be at risk for academic challenges in early elementary school, attending a high-quality preschool can improve test scores and attendance, and it can reduce placement in special education and grade-level retention. However, some preschool program evaluations document that initial benefits may not persist into early elementary school.

Some early childhood experts assert that the effects of preschool may diminish if curricula and instructional strategies from preschool through grade 3 are not well aligned. A second explanation for why initial benefits of preschool may not persist is that children who make early gains in preschool may not have the opportunity to maintain their growth rate or learning trajectory because early elementary instruction may focus on students who are less prepared and have low-level skills. This literature review aimed to better understand the research behind these two theories and focused on preschool and K–3 alignment and differentiated instruction in kindergarten and first grade. The review of differentiated instruction excluded studies that focused exclusively on low-achieving students because of the priority on differentiated instruction as a way to help sustain the gains children make in preschool.

STUDY QUESTIONS

1. What approaches does the research and theoretical literature suggest for aligning preschool through third grade (P–3) education, and what is the quality of the research studies?
2. What are the findings from studies of differentiated instruction on children in kindergarten and first grade, and what is the quality of these studies?

DESIGN

To gather literature, the review team conducted keyword searches related to P–3 alignment and differentiated instruction in nine widely used education and psychology electronic databases. Searches focused on articles published between January 2003 and July 2014. All studies that used quantitative designs—including randomized controlled trials (RCTs), quasi-experimental designs (QEDs), and pretest/post-test and correlational designs—were included if they focused on child-level developmental outcomes, such as academic outcomes, cognitive outcomes, and/or social and behavioral outcomes for students. Qualitative studies that focused on implementation were also included in the review. The review for the P–3 alignment topic also included theory and policy articles.

Because the review for the differentiated instruction topic included studies that employed a rigorous design (i.e., RCTs and QEDs), the research team appraised the research methods using systematic research standards designed by the What Works Clearinghouse; however, this review is not a product of the What Works Clearinghouse.

HIGHLIGHTS

- Nearly all qualitative studies and policy and theory articles on P–3 alignment suggest aligning standards, curriculum, instruction, assessments, and environments across preschool and grades K–3.
- P–3 alignment could be supported by establishing similar teacher education and training requirements and developing longitudinal data systems that integrate preschool and K–12 data.
- None of the three quantitative studies of P–3 alignment used experimental or quasi-experimental designs to examine impacts of preschool and K–3 alignment interventions.
- Common challenges to P–3 alignment include policies that inhibit the blending of funds and the instability of preschool funding.
- Of the 17 quantitative studies of differentiated instruction, one RCT of the *Individualized Student Instruction With Assessment to Instruction* intervention demonstrated positive results on reading outcomes and had the potential to meet the criteria for strong causal evidence.
- Less rigorous quantitative studies of differentiated instruction demonstrated mixed results on reading and writing outcomes.
- Qualitative studies of differentiated instruction indicate that opportunities for peer collaboration and guidance by mentors may be helpful to improve teacher practice related to differentiation.

PRESCHOOL AND K-3 ALIGNMENT

The P-3 alignment topic includes 49 policy or theory resources, nine qualitative studies, three quantitative studies, and one mixed-methods study.

Preschool and grades K-3 (P-3) alignment entails alignment of standards, curriculum, instruction, assessments, and environments across grade. Classroom environments should be similar across P-3: All classes should be small; preschool and kindergarten, in particular, should have similar classroom structures and environments.

Kindergarten readiness standards and kindergarten entry assessments can serve as mechanisms to facilitate alignment from preschool to kindergarten.

According to the theory and policy literature, the ultimate goal of alignment is to ease children's transitions into school and across grade levels. Examples of specific transition practices include (1) the transfer of records from prekindergarten to kindergarten, (2) kindergarten classroom visits for children prior to entering kindergarten, or (3) parent orientations prior to the beginning of kindergarten.

Establishing similar teacher education and training requirements, and equivalent compensation across preschool and elementary education job positions, would support P-3 alignment. The creation of P-3 teacher certification programs provides an opportunity to build a shared educational philosophy among early childhood educators and elementary school teachers of the K-3 grades, thus increasing alignment.

Longitudinal student data systems that integrate preschool with K-12 data, P-3 teacher professional development on data use, and cross-grade planning time would support the use of student assessment data in P-3 instruction planning. The theory and policy literature recommends development of longitudinal P-12 or P-20 data systems that link data from public and private early care and education programs to public school data.

District administrators and principals support the implementation of P-3 initiatives by involving teachers in the planning process, ensuring fidelity of implementation, measuring student achievement benchmarks, and holding administrators and teaching staff accountable.

Common challenges to P-3 alignment include policies that inhibit the blending of funds, instability of preschool funding, resistance among practitioners to integration of preschool and K-3 grades, and the organization of elementary education classrooms, buildings, and enrollment. K-3 administrators, teachers, and early childhood providers may resist the idea of combining or aligning preschool with grades K-3 because there is a perception of significant philosophical differences between early childhood and elementary grade teachers.

DIFFERENTIATED INSTRUCTION

The differentiated instruction topic includes 21 studies, including 17 quantitative studies and 4 qualitative studies focused on students in kindergarten or grade 1. Of the 17 quantitative studies, 7 were RCTs, 6 were QEDs, and 4 were other non-rigorous designs (i.e., descriptive and single-group pretest/post-test designs) to examine the effects of differentiated instruction on achievement.

Of the 17 quantitative studies of differentiated instruction, one RCT of the *Individualized Student Instruction With Assessment to Instruction* intervention demonstrated positive results on reading outcomes and had the potential to meet the criteria for strong causal evidence. Five RCTs of this specific intervention that did not meet the criteria for strong causal evidence also showed positive outcomes.

Less rigorous quantitative studies of differentiated instruction demonstrated mixed results on reading and writing outcomes. One RCT that did not meet the criteria for strong causal evidence did not find any effects when comparing the strategies of (1) grouping students by learning style preferences (i.e., visual, auditory, tactile, or kinesthetic), with (2) grouping students by pre-intervention reading achievement.

Seven quantitative studies (five QEDs, one pretest/post-test design, and one descriptive design) examined small-group differentiated instruction approaches for reading and showed mixed results.

Three quantitative studies (one QED and two single-group pretest/post-test designs) suggest that some students may benefit from collaborative, interactive writing sessions or from specific writing tools or prompts.

Qualitative studies of differentiated instruction indicate that opportunities for peer collaboration and guidance by mentors may be helpful to improve teacher practice related to differentiation. Four qualitative studies provided information about processes and strategies for implementing differentiated instruction for mathematics but do not provide evidence of effects. These small studies, which focused on perceptions of facilitators or barriers to implementation, suggest that differentiated instruction requires careful planning and reflection on the part of teachers.