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Asset-Based Implementation of Structured Adaptations in an Online Third-Grade Content Literacy Intervention

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Scaling evidence-based programs often faces a tension: how can teachers adapt materials to their local context without losing the effectiveness that made the program work in the first place?

In education, strict fidelity to a program and local adaptation to meet student needs are not mutually exclusive; both happen in real classrooms, whether intended or not. Past reforms like Reading First show that prioritizing fidelity alone often fails to produce sustained improvement, as teachers inevitably adapt to fit their students, contexts, and professional judgment. These adaptations can either dilute or strengthen instruction depending on whether systems support teachers in making evidence-based adjustments.

To ensure programs are effective in real-world conditions, implementation designs need to build in *structured adaptation*—a type of guided flexibility that keeps the instructional goals the same but empowers teachers to adjust lessons to fit their students and school. Structured adaptations combine the strengths of experimental science, which emphasizes staying true to the original program design, with improvement science, which focuses on adapting to local needs. This approach offers a new way to ensure research-based practices are implemented equitably.

STUDY AND METHODS

In this study, researchers tested whether structured adaptations to a Tier 1 content literacy program could improve outcomes for almost 2,000 Grade 3 students during COVID-19 school closures. The study measured (1) student engagement in both asynchronous digital and print-based reading activities, the quality of live teacher–student interactions during Zoom lessons, and (2) student learning outcomes. Using a multisite cluster randomized trial, 95 teachers in 26 elementary schools were

assigned either to implement the program exactly as designed (the Core Treatment group) or to use a structured adaptation model that allowed for guided, context-sensitive changes (the Adaptive Treatment group).

Group 1: Core Treatment (high-fidelity implementation, no adaptations): Teachers implemented the standard online content literacy intervention, named Model of Reading Engagement (MORE), with high fidelity, following established procedures without scope for modification. The MORE intervention had been validated in previous research.

Group 2: Adaptive Treatment (structured adaptations): Teachers implemented the content literacy intervention (MORE), but were also given the freedom to adapt lessons within boundaries. They could adjust pacing, change interaction formats, and add scaffolds to better meet student needs, especially in remote learning (see Table 3 on page 48 for more details on the type and nature of adaptations completed by Adaptive Treatment teachers).

To support this, teachers participated in a Team-Based Learning (TBL) structure. They first built a shared understanding of the program's concepts and design logic through activities like individual and team Readiness Assurance Tests. Then, in structured collaborative routines, they worked together to analyze how the intervention fit their local context, identify where adaptations were needed, and design those changes in ways consistent with the program's principles.

This process positioned teachers not as passive implementers but as instructional partners. They held each other accountable, shared ownership of improvements, and drew on their professional and contextual knowledge to make the intervention work for their students. The structure ensured adaptations were thoughtful, principled, and grounded in a shared vision.

What the results of this RCT would mean for practice: If students in the Adaptive Treatment group outperformed the Core Treatment (high-fidelity implementation) group, it would mean that giving teachers guided flexibility can lead to better student engagement and outcomes. That would suggest districts can trust well-supported teachers to tailor lessons to their students and context without losing the benefits of the evidence-based program. If, however, structured adaptation was no more effective (or less effective) than strict fidelity, leaders would need to put greater emphasis on maintaining consistency or rethinking how to approach adaptation so it doesn't dilute the program's impact.

KEY FINDINGS

1. **When teachers had flexibility to tailor instruction while preserving the core curriculum, third-graders saw higher scores in science reading comprehension (effect size ≈ 0.07) and science background knowledge (effect size ≈ 0.09) than students whose teachers did not have this flexibility.** This suggests that when teachers can thoughtfully adjust pacing, interaction structures, or add scaffolded supports, they can boost students' understanding of complex science concepts, not just deliver them.

2 **The structured adaptations model was more effective in both higher-need schools and those with more resources, as well as in schools serving diverse racial, linguistic, and socioeconomic populations.** The consistent gains signal that guided teacher flexibility can work reliably even amid differences in student needs, staffing, and instructional infrastructure.

3 **Classrooms using these structured adaptations also demonstrated stronger student engagement, better-quality student-teacher interactions, and more effective dialogic questioning, suggesting improvements in learning dynamics and instructional interaction.**

- Students in the Adaptive Treatment group **were more consistently on-task** in both digital and print-based activities. This likely reflects that teachers could adjust pacing, scaffolds, and interaction formats to keep lessons accessible and interesting, rather than following a rigid script that might lose relevance for some students.
- Classroom observations showed that teacher–student exchanges in the Adaptive Treatment group **were more responsive and interactive**. Teachers were better able to build on student responses, ask follow-up questions, and connect ideas back to core concepts—moves that research links to deeper comprehension and retention.
- **Dialogic questioning (open-ended prompts that invite students to reason, explain, and connect ideas) was notably stronger** in Adaptive Treatment classrooms. This indicates that structured flexibility gave teachers room to shift more towards discussion-based learning, which is linked to increasing critical thinking and collaborative problem-solving skills.

IMPLICATIONS FOR POLICY AND PRACTICE

1 **When teachers can adapt instruction within clear boundaries, they can create richer, more engaging learning dynamics without straying from core goals.** Professional learning structures, such as TBL, which enable teachers to adapt materials thoughtfully while preserving core components of proven programs, can lead to stronger student engagement and comprehension.

2 **Because structured adaptations produced consistently positive effects across a wide variety of schools, district and state leaders can be more confident that this model can scale without losing effectiveness.** This reduces one of the biggest risks in program expansion, the uneven results that often occur when an intervention is rolled out to schools with different demographics, resources, and instructional cultures. The adaptability built into the professional learning process likely helped teachers in very different contexts arrive at context-appropriate solutions without compromising the core goals of the program. This suggests that structured adaptation is not only effective but also resilient to the "real-world variability" that often derails well-designed programs when they leave the pilot phase.

FULL WORKING PAPER

This report is based on the EdWorkingPaper "*Asset-Based Implementation of Structured Adaptations in an Online Third-Grade Content Literacy Intervention*" published in August 2025. The full research paper can be found here: https://edworkingpapers.com/ai24-1001.

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