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Title: Technology-based Implementation Supports: Approach Used in the TeacherRead Study

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Abstract

Background

Implementation fidelity in the context of randomized experiments is critical to ascertain the true relationship between the intervention and intended outcomes (Murnane & Willett, 2010). However, ensuring implementation fidelity is a common challenge—especially in experiments with complex, multi-faceted interventions (Carroll et al., 2007). In this poster, we present some novel approaches to implementation supports—guided by the principles of program improvement science—that may help to address implementation challenges, both in the context of intervention research and in taking effective interventions to scale.

Objective

The purpose of this “work in progress” poster submission is to present the implementation supports being used in the ongoing TeacherRead study. The TeacherRead Study is a three-cohort cluster randomized trial funded by the Institute of Education Sciences that is evaluating the efficacy of a targeted shared book reading intervention for improving the language and literacy skills of pre-k children in the New York City (NYC) Pre-K for All program. We use a number of innovative implementation technologies in TeacherRead, which include: (1) professional learning webinars, (2) lesson logs and performance feedback on dosage, and (3) virtual coaching and performance feedback on adherence.

Setting/Population

The TeacherRead study takes place in 150 pre-k classrooms in the NYC Pre-K for All program, which offers free, full-day, universal pre-k for over 70,000 4-year-old children across all five boroughs in New York City. The pre-k enrollment generally mirrors enrollment data of public-school kindergarten demographically.

TeacherRead Implementation Approach

TeacherRead is designed to complement foundational book reading practices by embedding instructional targets addressing oral language, print knowledge, and phonological awareness in shared book reading. In addition to providing high-quality professional learning, implementation supports focus on providing performance feedback on dosage and adherence to

all treatment teachers and more intensive support for low-fidelity participants. Below we detail the key aspects of our implementation approach and demonstrate their feasibility when compared to traditional in-person coaching.

Professional Learning Webinars. Prior to implementation, teachers individually engage in three recorded professional learning webinars. Each webinar is approximately 30 minutes long and self-paced. The webinars cover the general features of high-quality shared book reading, as well as specific procedures for implementing the TeacherRead lesson guides and completing the lesson logs. To promote completion and reinforce concepts learned in the webinars, teachers complete quizzes to test their knowledge of presented material at the end of each webinar.

Lesson Logs and Performance Feedback on Dosage. Online lesson logs serve as an efficient way to measure and provide feedback on implementation dosage. Each instructional day during the implementation period, treatment teachers complete a one-minute online lesson log which they receive daily either through a text message or email. The lesson log asks teachers to report whether they delivered the TeacherRead lesson for the day, whether they delivered all of the prompts for the lesson, how many study children were absent, and whether they provided a make-up lesson.

Personalized performance feedback is provided to teachers via text or email throughout each study week. By mid-week, teachers that have not submitted any lesson logs are sent a friendly reminder to complete their logs. At the end of the week, each teacher receives a customized text/email summarizing the data they have provided that week and thanking them for their high participation rate or encouraging them to complete missing lessons.

Virtual Coaching and Performance Feedback on Adherence. Teachers receive individualized virtual coaching and performance feedback from researchers via the online submission of recorded lessons to share their adherence to implementing all components of the lessons and instructional targets. At set times during the beginning, middle, and end of the study window, teachers self-record a video of their delivery of a TeacherRead lesson. Once teachers upload their recorded lesson using the [Torsh Talent](#) secure website, the video is instantly securely shared with TeacherRead researchers.

TeacherRead researchers have developed a standardized approach for providing implementation feedback to teachers that is easy to read and interpret. Teachers receive a *Glow*, *Grow*, and *Next Step* statement to structure their performance feedback. A *Glow* communicates a positive statement about the teacher's use of the TeacherRead lesson (e.g., utilizing all the prompts and/or using sticky notes to support implementation). A *Grow* communicates corrective feedback about the use of the TeacherRead lesson (e.g., utilizing only a few of the prompts). A *Next Step* communicates actions to take to maintain or improve the teacher's fidelity score.

When implementation feedback is ready for teachers to review, teachers receive an email or text from the TeacherRead team directing them to their Torsh Talent account where they are able to view the feedback on their submitted lesson. In addition to online feedback, teachers who exhibit low adherence receive an individual call to provide additional coaching on the specific areas of the lesson the teacher struggled to deliver.

Preliminary Findings

Initial findings suggest that our methods to ensure high levels of implementation fidelity are efficient and useful to teachers. For example, we achieved a high average response rate on the daily lesson log survey in cohort one (average of four days per week completed). The timely individualized virtual coaching and performance feedback on teachers recorded lessons has also been linked to improved fidelity. From the first video submission to the last video submission we saw a nine-percentage point decrease in the number of teachers who had a low implementation fidelity score and a 14 percentage point increase in the number of teachers who had a high implementation fidelity score. Overall, 63 percent of teachers maintained a high implementation fidelity score throughout the three video submissions, and 21 percent of teachers increased their implementation fidelity score from a lower category to a higher category.

References

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- Murnane, R. J., & Willett, J. B. (2010). *Methods matter: Improving causal inference in educational and social science research*. Oxford University Press.