MAKING THE RIGHT CONNECTIONS:
IMPROVING THE COMPREHENSION OF STRUGGLING READERS

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Executive Summary

Project Goals
The major goals of this project are to produce one or more fully developed questioning intervention(s) aimed at improving the reading comprehension of students at risk or identified as having disabilities. Intended products include: (a) one or more prototypes that are feasible and promising, with manuals; (b) one or more observational checklists to be used to document fidelity; and (c) training materials to prepare school-based personnel for implementation. We also aim to identify for whom (subgroups of struggling readers) and under what conditions (type and timing of questions, intensity of intervention) the intervention is most promising.

Extent to Which Goals have been Met
In Year 1, we completed or are in the process of completing the following objectives to meet the above project goals, as described below:

(1) **Develop core intervention questions, materials, and procedures.** We have met this objective by developing a complete intervention package called “Making the Right Connections.” The intervention package includes:
   a. Twenty narrative and six informational passages, each with 5 to 8 questions designed to help students make important connections while they read.
   b. Tutor and student materials to implement the intervention, including tutor scripts, vocabulary cards, question cards with feedback, bookmarks, teacher and student versions of the passages in folders, score cards, and incentives.
   c. A fully developed set of procedures and fidelity tools for implementing the intervention.

(2) **Identify struggling readers to participate in pilot studies.** We have met this objective by conducting a systematic screening process to identify 62 struggling readers to participate in the intervention. Specifically, consented fourth-grade students \( (n = 465) \) were screened in two phases. In Screening Phase I, students whose average scores from two Curriculum-Based Measurement (CBM) Maze probes were at or below the 25th percentile were identified as eligible for Screening Phase II using a combination of Maze, district test data, and teacher judgment.

Those students identified as eligible for Screening Phase II were individually administered CBM oral reading probes to eliminate students whose primary reading difficulties were decoding/fluency. Those who scored greater than 90 wrc in one min were identified as eligible for the intervention \( (n = 62; 13\%) \).
Conduct pilot studies to examine feasibility and student outcomes. We have met this objective by conducting a series of trial runs and pilot studies to determine fit and feasibility of the intervention, and to compare the relative promise of different questioning types (Causal and General) and timings (Online and Offline) to improve students’ comprehension of texts.

Analyze and interpret data from pilot studies. Preliminary analyses are complete. General findings indicate that:

a. Tutors implemented the intervention with high levels of fidelity.
b. Tutors rated the intervention as feasible to implement.
c. Reading specialists observed and rated the intervention as fitting well with their schools’ instructional programs, and as being feasible to implement.
d. Students rated the intervention positively in terms of how well they liked it and how helpful it was for understanding texts.
e. Thus far, there are no statistically significant differences among the four different combinations of question type and timing (we have analyzed our primary dependent variables, including posttest recall and oral reading of near- and far-transfer passages). Further, we have not observed significant interactions between type/timing of questioning and subgroups of struggling comprehenders. Patterns in the data suggest an overall relative benefit of Causal Online questioning, and that General Offline questioning may be the least helpful questioning approach. Further analyses (including additional dependent variables from questioning and prompting measures) are in process. We will also continue to examine the role of possible moderators to students’ response to intervention (e.g., demographic variables, vocabulary and background knowledge, motivation).

Refine interventions based on results of pilot studies. Revisions based on pilot studies are in process.

Contributions
Whereas we are still in process of addressing the primary goals of the project, Year 1 findings have some potentially important contributions to research. We have replicated previous research that indicates there may be subtypes of struggling readers, and the subtypes are robust to different text structures (narrative and informational). We have developed an intervention prototype that tutors, practitioners, and students view as feasible and acceptable. We have preliminary evidence that type and timing of questioning yield similar response in terms of students’ recall of text, although further analyses are required to better understand the extent to which type and timing of questioning is important.