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Evidence Brief: Sustaining a Content Literacy Program Across School Years Improves Reading Comprehension

The Model of Reading Engagement (MORE) is an approach to content literacy[1] developed by the Harvard READS Lab in collaboration with teachers in our partner districts. MORE has the following core components: (1) **whole-class lessons** to build students' knowledge of the topic, such as "Arctic animal survival"; (2) a **personalized literacy app** and texts to give students exposure to and opportunities to play with topic-related words, and (3) the **MORE formative assessment**, which indicates how well students are able to transfer their knowledge of the focus topic to new topics. In this brief we present evidence on how aligning and sustaining MORE across grades can improve reading comprehension.

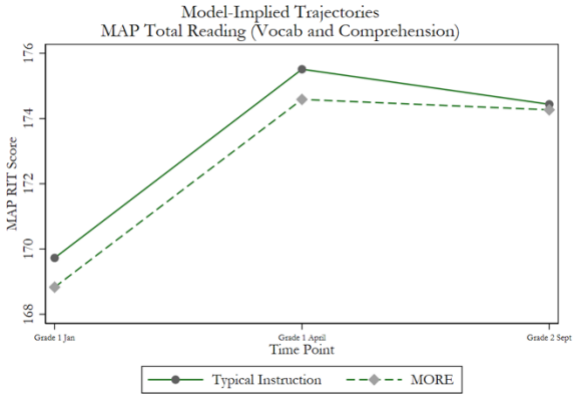
Our question: Can a content literacy program sustained over two school years improve students' reading comprehension?

In this study, we randomly assigned schools to teach either MORE lessons or continue with the district's science and social studies curriculum (i.e., typical instruction). Students in the 15 MORE schools participated in a MORE science unit in both first grade (topic: animal survival) and second grade (topic: dinosaurs). Additionally, over the summer between first and second grade, MORE students and their families were given access to a personalized literacy app and books related to the MORE unit topic.

We theorized that tightly connecting the MORE lessons, app, and books over a longer period would help students build richer, more connected ideas about animal survival, extinction, and how scientists (e.g., paleontologists) learn about the past. These networks of connected ideas (schema) might then make it easier for students to "transfer" knowledge from one topic to another – for example, to a passage on how archeologists study people who lived long ago.

What we found: Students who participated in MORE across first and second grade made larger improvements on both general and science reading comprehension

Evidence of improvement on general reading comprehension: We analyzed the Measure of Academic Progress (MAP) scores, an assessment given multiple times a year to understand how students' reading skills grew across three time points—before the study began in January, the end of first grade in April, and the beginning of second grade in September. As shown in the graph to the right, although MORE students started a little bit behind the "typical instruction" students in January, they were able to close the gap by the beginning of second grade. In other words, MORE students showed greater *growth* in reading comprehension.



[1] **Content literacy approaches** like MORE help students build "rich and connected ideas" about science, social studies, and other content areas, while also supporting students' development of the reading, writing, and speaking skills necessary to engage deeply with these ideas (Catts, H. W. (2022). Rethinking How to Promote Reading Comprehension. *American Educator*, *45*(4), 26).

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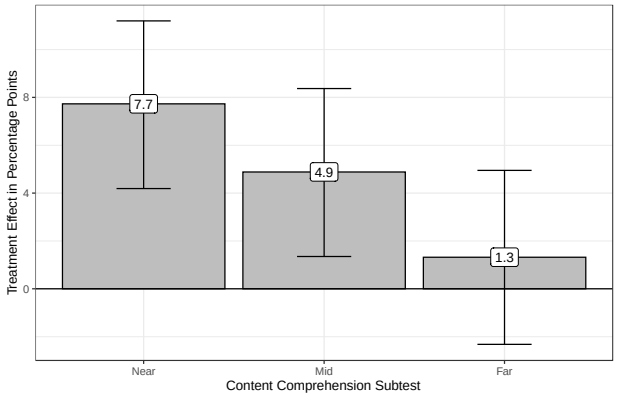
Evidence of improvement on science reading comprehension: In addition, we designed our own assessment of science content comprehension and administered it to students in March of their second-grade year. One advantage of developing our own assessment is that we can more precisely measure evidence of a student's ability to transfer vocabulary and knowledge into new areas of understanding. The ability to transfer knowledge across related topics is important, since teachers can't possibly cover every topic that students are expected to read about and understand.

Our science content comprehension test was organized into three reading passages, Passage 1, the "near transfer passage" was most closely related to what students studied during the MORE unit (e.g., paleontologist and the ammonites). The other two passages ("mid" and "far") were related to the MORE unit - but not as closely as Passage 1 (e.g., genealogists and our descendants). We hypothesized that we would see larger effects of MORE on the near transfer passage, with smaller effects on mid and far transfer passages. The graph shows how much more likely a MORE student is to answer a question correctly compared to a typical instruction student, in percentage points. As predicted, we found that MORE had the largest impact on the near transfer passage (Effect Size = 0.22), smaller on the mid passage (ES = 0.17), smallest on the far passage (ES = 0.04, not significantly different from traditional instruction students). Thus, MORE students were able to transfer what they learned into new passages, a skill they will need as they move through school. Because we randomized the schools implementing MORE, we can be confident that there is a causal relationship between MORE and the outcomes we observed.



Conclusion: Content literacy programs sustained across school years and summer can improve reading comprehension

To date, large-scale literacy interventions have demonstrated mixed success in improving elementary-grade students' reading comprehension outcomes. Our work shows that a sustained content literacy program may represent an innovative and replicable approach for improving all learners' ability to read challenging informational texts with greater understanding.

This brief describes work done for READS Lab at the Harvard Graduate School of Education based upon Kim, Burkhauser, Relyea, Gilbert, Scherer, Fitzgerald, Mosher & McIntyre (2022) *A Longitudinal Randomized Trial of a Sustained Content Literacy Intervention from First to Second Grade: Transfer Effects on Students' Reading Comprehension*. The research reported here was supported by the Chan Zuckerberg Initiative.