

Evidence Brief: 10-Day Content Literacy Unit Improves the Rigor, Quality, and Effectiveness of Literacy Instruction in First Grade

Reading comprehension scores remain difficult to improve nationwide. This is true despite significant investments in evidence-based literacy curricula in the early elementary grades, including programs targeting foundational word reading skills. **Content literacy programs**¹ may be part of the solution. In this brief, we define what we mean by a “content literacy program,” describe a content literacy program we’ve developed called Model of Reading Engagement (MORE), and present evidence on the effectiveness of a brief (10-day) MORE first-grade science unit.



MORE is an approach to content literacy developed by the [Harvard READS Lab](https://www.readslab.org) in collaboration with teachers in our partner districts. The core components of MORE are (1) **whole-class lessons** to build students’ knowledge of a particular topic; (2) a **personalized literacy app and texts** to give students additional 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 that MORE lessons (Core Component #1) can improve students’ reading comprehension, as measured by a standardized reading test.

Our question: Can a 10-day content literacy unit improve first-grade students’ reading comprehension when compared to balanced literacy instruction?

In this study, we randomly assigned first-grade teachers to either a 10-day MORE science unit on the topic of “arctic animal adaptation” or the district’s balanced literacy unit (typical instruction). In the MORE content literacy unit, students engaged with grade-level books and participated in reading, writing, and speaking activities to build their knowledge of key concepts related to animal adaptation (e.g.,

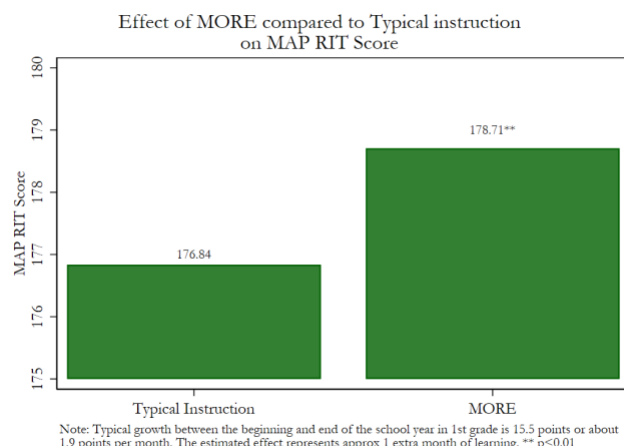
survive, characteristic, habitat). Students in the balanced literacy unit received a “balance” of phonics, reading and writing strategy instruction, and small-group guided reading where they read books on their reading level. Because we randomized which teachers taught the different units, we can be confident there is a causal relationship between the type of lesson students received and the outcomes observed.

Content Literacy (MORE)	Balanced Literacy (Typical Instruction)
Instruction builds topic knowledge through reading, writing, and discussion	Instruction balances phonics, reading and writing strategy instruction, and small-group guided reading
Students primarily engage with books on grade level	Students primarily engage with books on their reading level

This brief describes work done for READS Lab at the Harvard Graduate School of Education based upon James S. Kim, Mary A. Burkhauser, Laura M. Mesite, Catherine A. Asher, Jackie Eunjung Relyea, Jill Fitzgerald, and Jeff Elmore “Improving Reading Comprehension, Science Domain Knowledge, and Reading Engagement Through a First-Grade Content Literacy Intervention.” (*Journal of Educational Psychology* (2021): 113, 1, 3-26). The research reported here was supported by the Cheng Yu Tung Research Innovation Fund.

¹ **Content literacy programs** help students build “rich and connected ideas” about science, social studies, and other content areas at the same time that they help students develop the literacy skills necessary to read, write, and engage in rich discussion about these ideas (H. Catts, *American Educator*, 2022).

What we found: First graders who received MORE content literacy lessons performed significantly better on a standardized measure of reading comprehension



First-grade students who participated in the MORE content literacy lessons, on average, enjoyed greater gains on a popular standardized reading assessment than first-grade students who participated in the balanced literacy lessons.² Specifically, as seen in the graph on the left, students in MORE classrooms gained an average of almost 2 points more. To put this difference in perspective, students typically gain about 15.5 points over the course of an entire school year, meaning that the difference between MORE and balanced literacy instruction is about one month of a student's learning. This is a large difference for a 10-day intervention (60-minutes per day).

We also analyzed data on students' reading motivation and basic reading skills. We wondered if students would be frustrated by the challenging texts in the MORE lessons and/or miss out on foundational literacy lessons. We found, however, that the rigorous MORE text had no effect on students' reading motivation nor basic literacy skills, like phonics. Finally, there was no evidence that the reading gains were lower for academically struggling students who received MORE compared to those who received balanced literacy instruction.³

Why would a 10-day content literacy unit help students on a standardized reading test?

Students in the MORE science unit learned a lot about how animals survive in the arctic - the particular topic under study. They also learned about *physical* and *behavioral adaptations* and *survival* more broadly. Knowledge of the more general schema of animal adaptation and survival can help students in other contexts, for example when they come across an informational passage about how camels survive in the desert.

The bottom line: MORE lessons can improve the rigor, quality, and effectiveness of first-grade whole-class literacy instruction with no adverse effects on reading engagement or basic literacy skills

These findings build upon emerging literature that content literacy lessons can be an effective tool to improve children's literacy. We show that this approach is effective for early elementary students. In addition, we find no evidence that the increased rigor for first-grade students had unintended negative consequences on students' motivation or basic literacy skills. Finally, regular classroom teachers taught MORE with minimal additional professional development for the teachers or school staff. This provides some initial promising evidence that MORE could be scaled to new schools and settings.

² The Northeast Education Associates' Measure of Academic Progress (MAP) test is scored on a RIT scale, which can be compared across time periods and grade-levels to accurately measure growth throughout the school year and over time. The chart displays the reading increase from the Winter to the Spring assessment periods.

³ Some interventions impact students unequally, for instance helping strong readers more than struggling readers.