

Can MORE science and social studies help elementary students become better readers – and better mathematicians too?



MORE (Model of Reading Engagement) is THE elementary science and social studies program that builds schemas and improves academic achievement – including literacy and math.

The MORE lessons work as a **spiral curriculum**, where fundamental concepts are revisited with increasing complexity to build deep knowledge across grades. By using **schemas** – knowledge frameworks that help students organize and connect information – the lessons encourage students to “hang” new vocabulary and ideas onto existing knowledge to make connections and bigger patterns visible.

So how do we know that MORE works? An important test of MORE’s effectiveness is whether this approach can help students not only retain knowledge over time, but also *transfer* what they learn in class to different, untaught subjects.



How does MORE impact students’ academic achievement over time?

Our study randomly assigned 30 schools to either receive MORE from first through third grade (our “treatment” group) or in third grade only (the “control” group). This would help us understand the cumulative effect of the spiral curriculum across three years.

We were able to follow the students and collect their scores on end-of-year standardized tests throughout the years they received MORE lessons, as well as 14 months after MORE had ended. By comparing scores, we could assess if there was a difference in academic achievement at the end of the program, and whether any differences persisted over time.

Because we **randomized** which schools received three years of MORE, we can be confident that MORE *caused* the result rather than, for example, certain types of schools being more likely to choose to do MORE long-term.

Students who did MORE for 3 years had higher scores. And the results persisted.

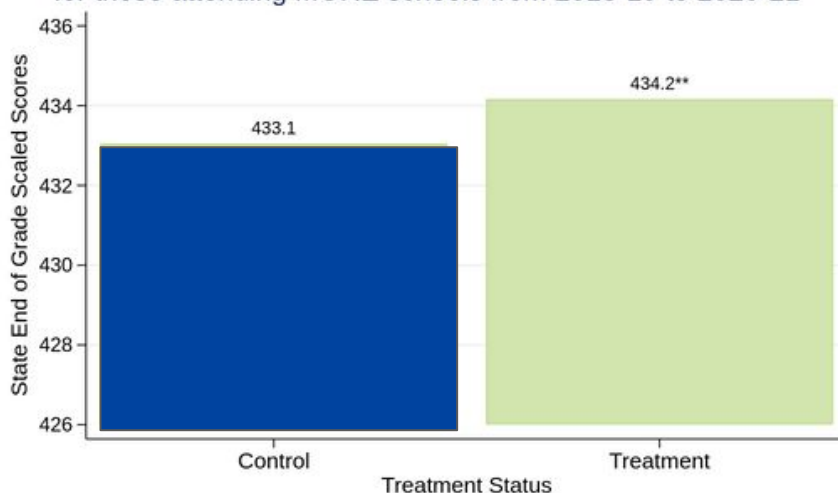
Treatment students who received MORE for three years outperformed **control** students on state end-of-grade tests in both reading comprehension and math.

In fact, the difference in reading for the long-term MORE students was equal to **more than two months' worth of literacy learning** by embedding MORE within science and social studies time for 6 weeks.

At the 14 month follow-up, these differences persisted in both 4th grade reading comprehension and math scores.

In other words, treatment students **performed better even 14 months later with no additional MORE lessons.**

Effect of MORE on 3rd grade End of Grade Reading Achievement for those attending MORE schools from 2018-19 to 2020-21



Note: Typical growth between Beginning of Grade and End of Grade exams in 2021 was 4.3 points. The estimated effect represents approx 9.5 weeks of learning. **p<.01



MORE teaches students to transfer what they learn to untaught subjects, improving achievement across multiple subject areas.

There is limited time in the school day. And the heavy emphasis on teaching reading and math to ensure that students are college and career ready means science and social studies lessons are often cut. But MORE can be a solution to this dilemma. Leveraging the science and social studies blocks to build schemas through a spiral curriculum can complement existing math and reading initiatives and improve academic achievement – in math, literacy, *and* science and social studies.

Kim, J. S., Gilbert, J. B., Relyea, J. E., Rich, P., Scherer, E., Burkhauser, M. A., & Tvedt, J. N. (2024). Time to transfer: Long-term effects of a sustained and spiraled content literacy intervention in the elementary grades. *Developmental Psychology*. <https://psycnet.apa.org/fulltext/2024-55174-001.html>.