

Reveal Mathematics and Math Performance in Florida

Executive Summary

The McGraw Hill Mathematics team requested an analysis of math performance as assessed by the Florida Algebra 1 and Geometry End of Course (EOC) assessments aligned to Florida's Benchmarks for Excellent Student Thinking (B.E.S.T) standards. . State test results were retrieved from the Florida state website for school years 2022-2023, 2023-2024, and 2024-2025 and were merged with McGraw Hill internal data to identify districts using *Reveal Mathematics* (RM). Those districts were compared with other Florida districts with other math curricula. Coarsened Exact Matching was used to match RM districts with similar non-RM districts based on percentage of students receiving Free or Reduced Lunch, students receiving Special Education Services, and Students with Disabilities. The percentage of students achieving a 3 ("On Grade Level") or higher on the Algebra and Geometry EOC assessments was compared between RM districts and districts that had no RM usage. We also compared whether the percentage of students at a 3 or above increased from 2022-2023 to 2024-2025.

Sample

Data were analyzed at the district level, with grades 9-12 included in the analyses. In total, we included 67 Florida districts. During the 2022-2023 school year, no districts used the Florida RM program. In 2023-2024 and 2024-2025, there were 20 districts with high school RM use. Districts without available scores were not included in the analyses.

Results

Statistically significant differences in percentage of students achieving a 3 or above emerged in 2023-2024 and 2024-2025, with RM districts exhibiting a higher percentage of students at a 3 or above in the Geometry EOC. Similar findings emerged for the Algebra 1 EOC, with more students in RM districts achieving a 3 or higher in 2024-2025. For all significant differences, the effect sizes were small to medium.

Conclusion and Limitations

After controlling for demographic variables, Florida high school districts who used the RM curriculum in 2023-2024 and 2024-2025 saw a higher rate of students achieving a 3 or higher on the Algebra 1 and Geometry End of Course exam compared with non-RM districts. RM districts also saw an increase over two years in students achieving a 3 or higher in the Geometry EOC exam. The extent of usage of RM in districts is unknown; therefore, we cannot rule out the influence of other factors that contributed to the differences reported.

Disclaimer

Mathematics assessment scores can improve due to a number of factors, including the innate ability and prior education of the students participating, as well as differences among teachers and their pedagogies. We believe that, even taking these factors into account, RM can contribute to improvements in student outcomes.

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Method

This report examined the high school mathematics performance of all Florida districts over three school years: 2022-2023, 2023-2024, and 2024-2025. The Efficacy Research Team classified all districts based on whether they had Florida *Reveal Mathematics* (RM) installed during the 2023-2024 and 2024-2025 school years. During the 2022-2023 school year, none of the districts were using the RM program.

The Florida Algebra 1 and Geometry EOC scores for high school students were downloaded from the Florida Department of Education website for all Florida districts for the selected school years. For these analyses, we used the percentage of students who had scores of 3 or higher in the Spring administration. Scores range from 1 (“Well Below Grade Level”) to 5, with a score of 3 corresponding to a student being “On Grade Level”.

The following demographic variables from the Florida Department of Education website from 2023-2024 for each district were included in the analyses as covariates and used for matching purposes: percentage of English Language Learners (ELL%), Students With Disabilities (SWD%), and students receiving Free or Reduced Lunch (FRL%).

All analyses were conducted in R Studio. Coarsened Exact Matching (CEM) was used, with the goal of matching on the covariates (ELL%, SWD%, and FRL%). To estimate treatment effect after matching, a linear regression model was fit to data to estimate the average treatment effect. District math performance (percentage of students with a 3 or above) was the outcome, and treatment (i.e., RM vs. non-rm districts) and covariates were included as predictors. For the analysis examining change in students at a 3 or higher over time, we calculated a growth variable (percentage of students with a 3 or above in 2024-2025 minus percentage of students with a 3 or above in 2022-2023). The `lm()` function was used to estimate the effects and standard errors. The matching weights were applied in the estimation. Additionally, Analyses of Covariance (ANCOVA) were employed to determine the magnitude of the difference in passing rates between the two groups using ELL%, SWD%, and FRL% as covariates. Cohen’s *d* was used as a measure of effect size.

Results

CEM analysis matched 21 control districts to 14 treatment districts. When examining the passing rates in grade 9-12 students on the Algebra 1 EOC, there was a significant difference between RM and non-RM districts in 2024-2025. RM districts had average passing rates of 35%, compared with non-RM districts with 28% passing rates (Cohen’s *d* = 0.65). While non-significant, results from 2023-2024 also showed a trend in the same direction, with RM districts seeing higher rates of students at grade level (30%) relative to matched districts (26%), Cohen’s *d*: 0.36.

On the 2023-2024 Geometry EOC exam, RM districts had higher average passing rates of 49% compared with non-RM districts who averaged 42%, a statistically significant difference, Cohen's d : 0.62. In 2024-2025, RM districts also had a higher percentage of students achieving a 3 compared with non-RM districts (49% and 43%, respectively); however, this difference was not statistically significant but showed a small effect size of 0.50.

Lastly, we examined the change in percentage of "On Grade Level" students from 2022-2023 to 2024-2025. The rate of students passing for those taking the Algebra 1 EOC did not differ between RM and non-RM districts. On the Geometry EOC exam, RM districts experienced a 10% increase in passing students from 2022-2023 to 2024-2025, while the remaining districts saw an increase of 3.5%, Cohen's d : 0.62.

Conclusion

This report examined the passing rates on the Algebra and Geometry EOC assessments in Florida districts from 2022-2023 to 2024-2025. With CEM analyses matching on demographic variables, districts using the McGraw Hill *Reveal Mathematics* (RM) curriculum were compared to non-Reveal Mathematics districts. Results from the first year, prior to implementation of the RM curriculum, showed no differences between districts.

In the high school grades, RM districts had significantly higher passing rates on the Algebra 1 EOC exam and the Geometry EOC exam in 2024-2025 and 2023-2024, respectively. This trend was also observed in the remaining school years though it was non-significant at that time.

Limitations and future directions

The extent of program usage in RM districts is unknown; therefore, we cannot rule out the influence of other factors that could have contributed to the improved performance in these districts. Similarly, the curricula and extent of its use in non-RM districts is also unknown. Also, while the influence of three demographic variables was controlled for, the impact of these factors on districts and student performance is not straightforward and its effects could have influenced our findings.

The Florida RM curriculum remains a newly developed curriculum, implemented for the first time in Florida in 2023-2024. It is expected that the first year may present challenges for teachers and students. For this reason, a follow-up study will be conducted including the 2025-2026 assessment data to explore the influence of a longer implementation.