Efficacy Analysis:

A Retrospective Investigation of 3rd Grade Year-Over-Year Performance From 2023 to 2024 Using Texas STAAR Math Data

Fall 2025

Prodigy

www.prodigygame.com

Executive Summary

This efficacy report presents a retrospective analysis of over 16,989 3rd-grade students across 119 schools and 89 districts that used Prodigy, compared to the state average performance on the State of Texas Assessment of Academic Readiness (STAAR) math test from 2023 to 2024. The analysis reveals that while Grade 3s in Texas experienced an overall decline in student performance during this period, schools with high and intentional Prodigy usage demonstrated consistently better outcomes than those that did not have high and intentional Prodigy usage.

Specifically, high-usage schools—defined as those where at least 50% of 3rd grade students answered 10+ questions monthly and averaged over 200 questions per student—outperformed the state in both mean scaled scores and the percentage of students meeting state standards.

The benefit was even more pronounced in schools with greater teacher-led intentionality, as measured by the number of Prodigy assignments created. Schools with 40+ teacher-created assignments saw a 13.8-point improvement in scaled score relative to the state and a 5.0 percentage point gain in students meeting standards.

These findings reinforce the value of Prodigy not only as an engaging math platform but as an effective instructional tool when intentionally implemented, offering measurable academic gains in foundational math achievement for elementary students.

Background

The publicly available State of Texas Assessments of Academic Readiness (STAAR) test scores aggregated at the grade level present a great opportunity for Prodigy to conduct an internal investigation of efficacy. This analysis compares the performance of Texas schools with high Prodigy usage to the average state-level performance on the 2023 and 2024 STAAR tests. The goal is to determine if Prodigy is an effective educational tool to improve mathematics outcomes.

Sample

The sample for this analysis is 3rd-grade classrooms in Texas that participated in the 2023 and 2024 STAAR Math tests. **The average year-over-year difference in the test performance between 2023 and 2024 among the high Prodigy usage schools is compared with the state average performance.** Selection criteria for the **high Prodigy usage schools** are:

- On average, 50% or more of the 3rd-grade students in a school answered at least 10 questions in Prodigy monthly between September 2023 and May 2024.
- The average monthly questions answered per student was 200 questions or more between September 2023 and May 2024.
- **The high usage schools were further segmented by intentional usage of Prodigy**, defined as teachers having created a certain number of Prodigy assignments, as delineated below, for their students between September 2023 and May 2024.
  - 0 or more assignments created
  - 10 or more assignments created
  - 20 or more assignments created
  - 30 or more assignments created
  - 40 or more assignments created

This sample of high Prodigy usage schools included 119 schools and 16,989 enrolled 3rd-grade students across 89 districts in Texas from 2023 and 2024. The sample did not exclude any classrooms or schools that met the above criteria.

The **state average** performance difference on STAAR Math tests from 2023 to 2024 was calculated by averaging across the scores of the schools that had test scores available in both 2023 and 2024.

Data

The year-over-year STAAR Math test score difference for 3rd grade was calculated by first subtracting each school's 3rd-grade test score from 2024 from its 3rd-grade test score from 2023, and then averaging across all schools. Two test performance indices were examined: **the mean scaled score and the percentage of students who met the state standard.**

The table below shows the Prodigy usage statistics of the high usage schools segmented by the number of assignments created. For context, assignments are a feature within the Prodigy teacher platform that allows a teacher to select specific math skills for their students to work on in Prodigy's game-based learning platform. Teachers can use this to align Prodigy practice to their lesson plan, conduct formative assessments, or do exit tickets.

Table 1. Prodigy usage statistics by high usage school segment.

	Schools with High Prodigy Usage (#)	Students Tested in 2023 and 2024	Mean % of Enrolled Students Who Answered 10+ Prodigy Math Questions Monthly	Average Math Questions Answered Monthly Per Student (#)	Free and Reduced Lunch Ratio (%)
0 or more assignments created	119	16,989	74.1%	272	66.6%
10 or more assignments created	78	11,777	74.4%	280	67.4%
20 or more assignments created	55	8,767	75.5%	284	64.2%
30 or more assignments created	37	6,288	76.8%	269	60.6%
40 or more assignments created	25	4,375	78.3%	267	58.9%

Results

At the state level, 3rd graders in Texas had a decline of 6.2 points in the mean scaled score from 2023 to 2024, as well as a 2.4% decrease in the percentage of students meeting the state standard for performing on grade level. In comparison, high Prodigy usage schools showed better test performance during the same time period. Furthermore, more intentional usage, as measured by the number of Prodigy assignments teachers created, increased Prodigy's efficacy. See Table 2 below for the year-over-year test performance differences.

Table 2. Average year-over-year test performance differences by intentional use segment.

	0 or more assignments created	10 or more assignments created	20 or more assignments created	30 or more assignments created	40 or more assignments created	State Average
Year-Over-Year Difference in Mean Scaled Score (Improvement Over State Average)	-4.1 (+2.1)	-1.1 (+5.1)	0.9 (+7.1)	4.0 (+10.2)	7.6 (+13.8)	-6.2
Year-Over-Year Difference in % of Students Who Met State Standard (Improvement Over State Average)	-1.9% (+0.5%)	-0.6% (+1.8%)	0.2% (+2.6%)	1.2% (+3.6%)	2.6% (+5.0%)	-2.4%

The figures below visually present the comparisons between high Prodigy usage schools and the state average performance.

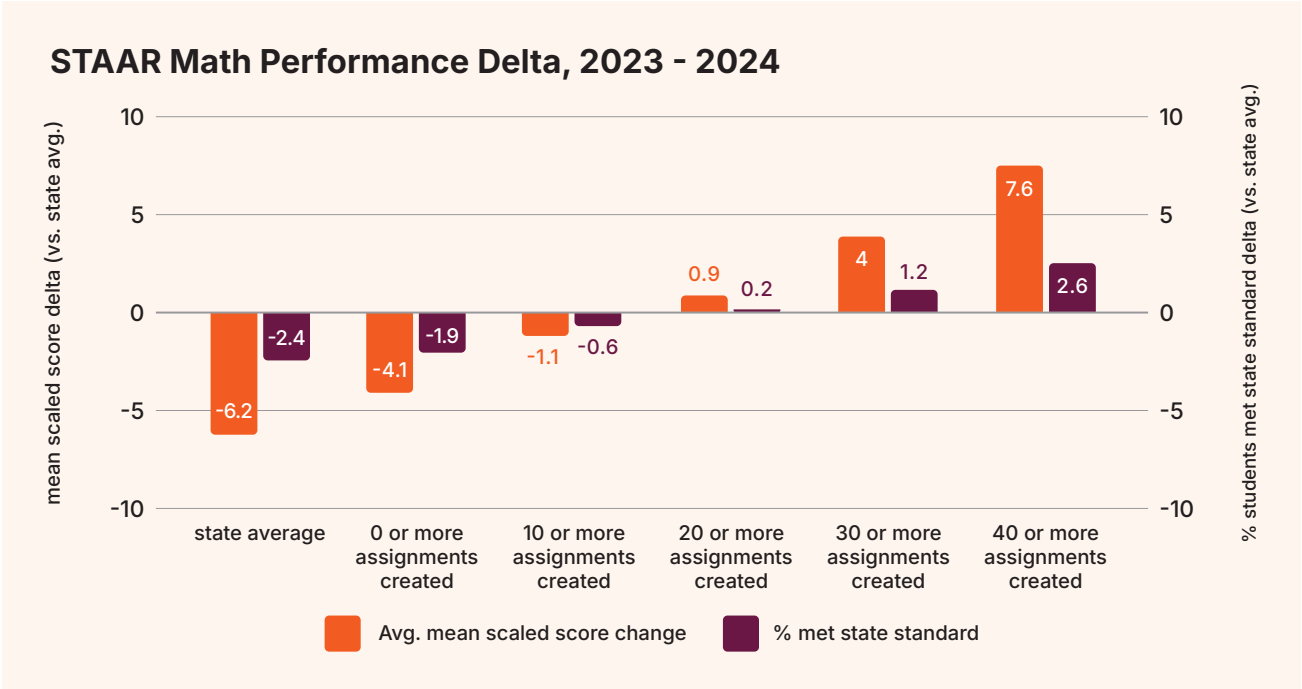


Figure 1. Average year-over-year test performance differences by intentional use segment. The orange bars indicate the year-over-year differences in the mean scaled score. The red bars indicate the year-over-year differences in the percentage of students who met the state standard.

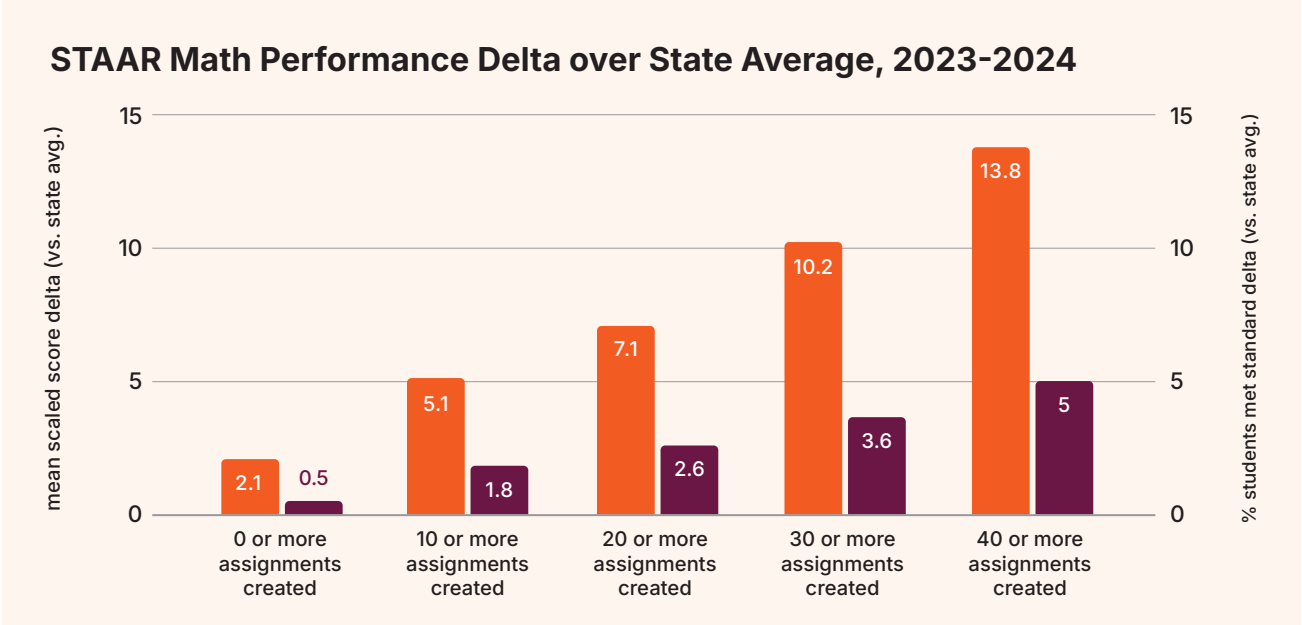
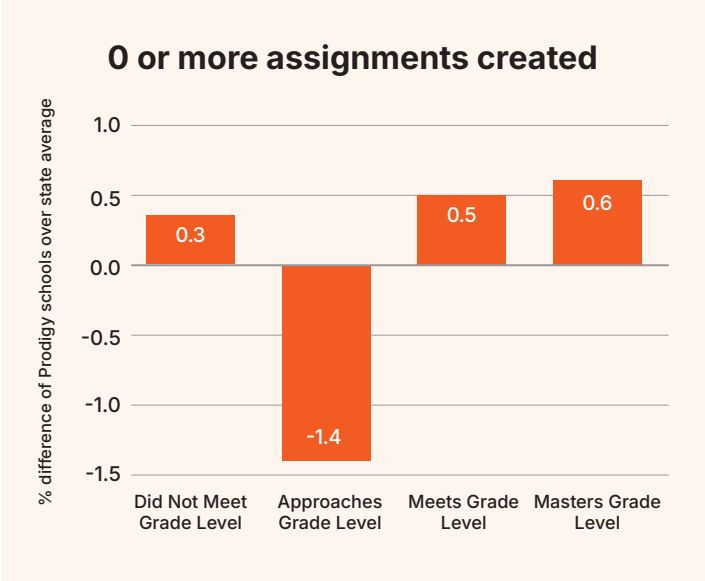


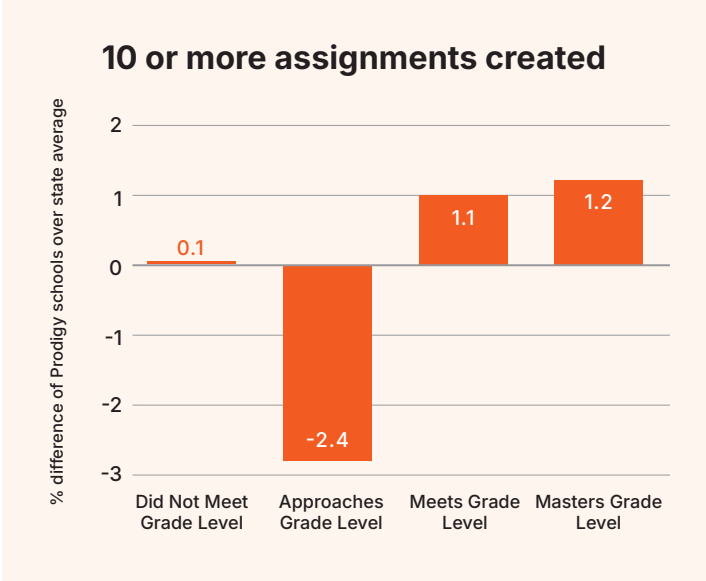
Figure 2. Improvement over the state average from high Prodigy usage schools by intentional use segment.

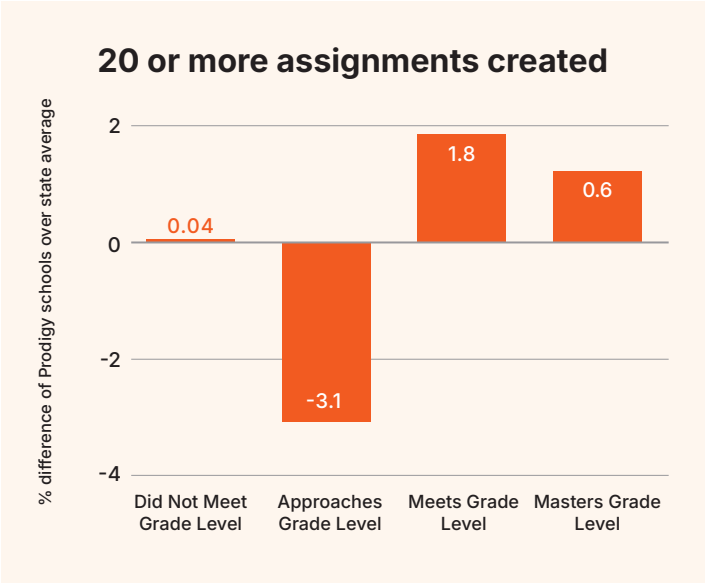
The following set of charts separated the differences in year-over-year STAAR performance difference between the Prodigy schools and the state average by performance categories - *Master Grade Level, Meets Grade Level, Approaches Grade Level,* and *Did Not Meet Grade Level*. Students who achieved *Approaches Grade Level* or higher passed the STAAR test.

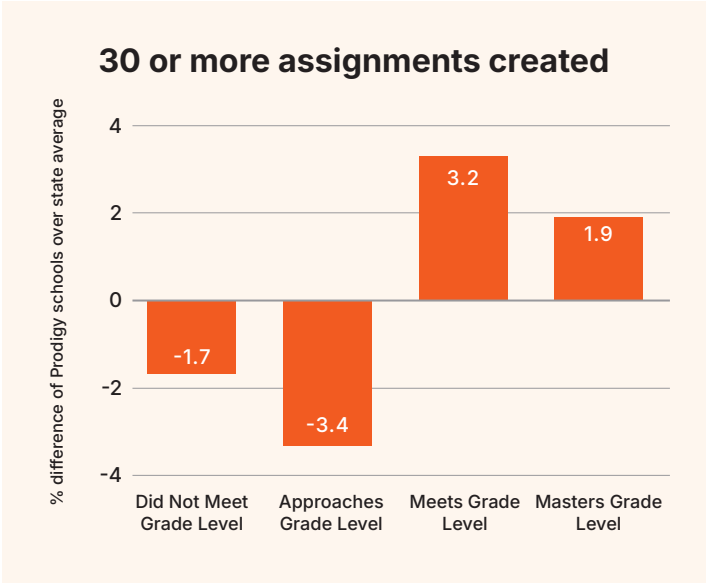
The Prodigy schools with 0, 10, and 20 or more assignments created showed a similar pattern: compared to the state average year-over-year percentage difference in each performance category, the Prodigy schools did not differ in the percentage of students not meeting grade level, while having a decrease in the percentage of students approaching grade level and showing increases in meets grade level and masters grade level.

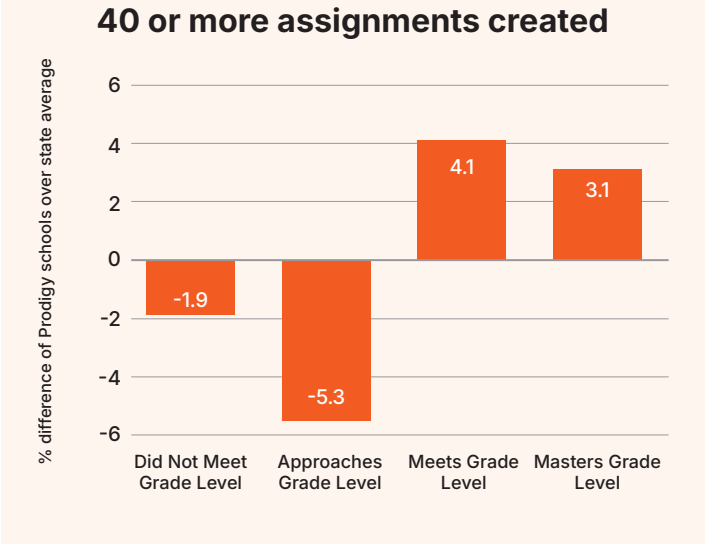
For the Prodigy schools with 30 and 40 or more assignments created, there were decreases in the percentage of students not meeting grade level and the percentage of students approaching grade level while demonstrating increases in the percentage of students meeting and mastering grade level when compared to the state average year-over-year differences.






20 or more assignments created
% difference of Prodigy schools over state average
2
0
-2
-4
0.04
-3.1
1.8
0.6
Did Not Meet Grade Level
Approaches Grade Level
Meets Grade Level
Masters Grade Level


30 or more assignments created
% difference of Prodigy schools over state average
4
2
0
-2
-4
-1.7
-3.4
3.2
1.9
Did Not Meet Grade Level
Approaches Grade Level
Meets Grade Level
Masters Grade Level


40 or more assignments created
% difference of Prodigy schools over state average
6
4
2
0
-2
-4
-6
-1.9
-5.3
4.1
3.1
Did Not Meet Grade Level
Approaches Grade Level
Meets Grade Level
Masters Grade Level

Summary

This efficacy analysis examined the year-over-year performance difference of 3rd grades on the State of Texas Assessments of Academic Readiness (STAAR) tests from 2023 to 2024. Schools with high Prodigy usage, defined as 1) having 50% or more of the 3rd-grade students in a school who answered at least 10 questions in Prodigy monthly, and 2) having over 200 average monthly questions answered per student between September 2023 and May 2024, were compared with the state average performance. The results showed that high Prodigy usage schools had better year-over-year performance than the state average, in terms of both the mean scaled score and the percentage of students who met the state standard (n=119 schools across 89 districts; 16,989 enrolled students). In addition, with more intentional use, as indicated by the number of Prodigy assignments that teachers created during the school year, Prodigy's educational impact was further amplified. With 40 or more assignments created, we saw a 13.8-point improvement in the year-over-year scaled score delta relative to the state average and a 5% improvement in students meeting the state standard. These results, along with prior efficacy evidence, continue to advocate for Prodigy's positive impact as an educational product to help boost math achievement.