

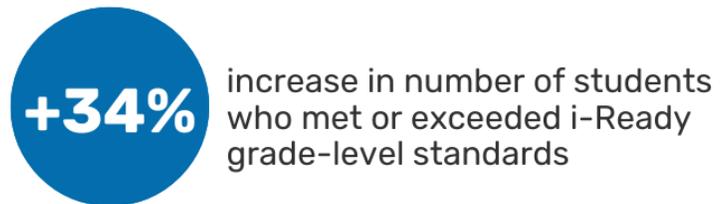
Boosting K-5 Math Achievement with PowerMyLearning's Early Math Program

2023-2024 Analysis

Summary

This study examines the impact of PowerMyLearning's math program, which integrates the Family Playlists® math practice tool with professional learning, on student math achievement. This program is designed to equip schools with the tools they need to drive equitable math achievement.

PowerMyLearning's math program was associated with significantly better math achievement for K-5 students. Students showed significant improvement across multiple metrics of success on i-Ready, including grade-relative placement, grade-level standards, and raw scores. These gains were equally strong among students in predominantly Black schools, demonstrating PowerMyLearning's ability to effectively support historically marginalized communities.

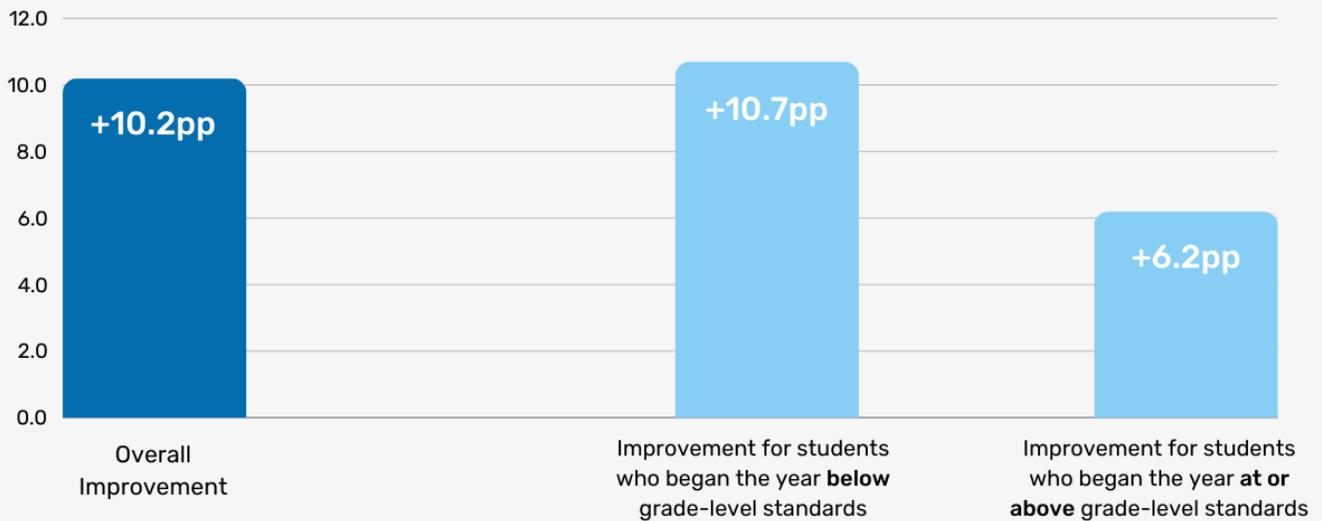


Students who were struggling in math showed the largest gains during PowerMyLearning's math program, underscoring its potential to close achievement gaps. Students who began the year below grade-level standards improved significantly more than their peers who were already meeting grade-level standards. This suggests that the program is particularly effective in accelerating growth for students most in need.

"[The program with Family Playlists] was a great way to incorporate families into the learning being done at school as well as support our i-Ready assessment goals."

–DCPS School Leader

i-Ready Scale Score Improvement after One Year with PowerMyLearning



Research Context

This study examined the impact of PowerMyLearning’s math program on student math achievement at 22 Title I elementary schools in the District of Columbia Public Schools (DCPS) in Washington, D.C. Across the participating schools, 79% of students identified as Black, 14% as Hispanic/Latino, 21% received special education support, and 11% qualified for English language learning services. Additionally, 66% of students were classified as At Risk, including children experiencing homelessness, those in foster care, or from families receiving TANF or SNAP benefits. The program involved 192 educators and data was collected from 2309 K-5 students. The study design and results details are provided in the research methods section of this report.

PowerMyLearning’s Math Program

The program included teacher professional learning, focused on support for both math learning and family engagement, as well leadership programming designed to support vertical alignment among school leaders, teachers, and families around common learning goals. The K-2 program involved 16 schools and the 3-5 program included six schools.

K-2 Program

- ✓ Leadership Outreach and Data Coaching
- ✓ Two Educator Workshops designed to support academic instruction and family engagement. Workshop topics included: Team Up with Families to Accelerate Learning and Learning by Teaching.

- ✓ **Two Small Group Educator Coaching sessions** to extend learning from the Educator Workshops into daily practice.
- ✓ **Family Playlists** a math practice tool designed to bolster student math learning. During the 2023-24 school year, K-2 teachers assigned these standards-aligned math activities based on their instructional scope and sequence. Playlist assignments are sent to students' family partner who completes the assignment with them. Each playlist includes a learning game and a "explain what you learned" activity. The learning game is played offline with materials found at home. The family partner then records and uploads a video of the student explaining their learning. This feedback helps teachers tailor their instruction to better meet each student's needs.
- ✓ **Family Playlist Launch** designed to provide training and resources to support effective implementation.

3-5 Program

- ✓ **Three Leadership Meetings** at the beginning, middle and end of year designed to kick-off the partnership with alignment on school goals, check-in and report out on goals.
- ✓ **Four Educator Workshops** designed to support academic instruction and family engagement. Workshop topics included: Team Up with Families, Apply and Equity Lens to Instruction, Learning by Teaching at School and at Home, Actionable Feedback.
- ✓ **Four Small Group Educator Coaching Cycles (3 sessions in each cycle)** to extend learning from the Educator Workshops into daily practice.

"This program has provided opportunities for my students, parents, and me to work together and discover and have fun while learning math."

–DCPS Educator

Research Methods

Design

We used a pre-post design to examine growth in student math achievement, as measured by i-Ready, after 1 year of PowerMyLearning's program.

Math Assessment

The i-Ready math diagnostic assessment is an online, adaptive assessment for students in Grades K-8. Student performance is represented by a *scale score* from 100-800, with a set range of scores corresponding to each grade level. Students who score within (or above) the score

range for their grade are considered to have met grade-level standards.

The assessment also classifies student performance into five levels, relative to grade-level standards: 3+ Grade Levels Below, 2 Grade Levels Below, 1 Grade Level Below, On Level (Early), or On Level (Mid, Late, or Above). This Relative Placement metric provides a meaningful interpretation of student scale scores. It also captures categorical changes that signify important shifts in student learning trajectories. For example, a student could remain 2 Grade Levels Below standard over time, even if their scale score increases; however, a shift from 2 Grade Levels Below to 1 Grade Level Below standard would indicate that they are on track to catch up to grade-level standards. The i-Ready math assessment was administered by the schools at the beginning and end of the 2023-24 school year.

Data Collection and Analysis

i-Ready scores were collected from the schools for all K-5 students. Math outcomes were analyzed using BOY 23-24 (pre) and EOY 23-24 (post) scores from the 2309 students who received PowerMyLearning programming (in grades K-2 or 3-5). We also analyzed scores from the subset of 1034 students at the 12 schools that were predominantly Black (>90% Black).

To assess improvement in math performance relative to grade-level standards, we conducted a Wilcoxon Signed Rank test on the Relative Placement classifications of student scores at BOY and EOY. This test analyzed whether student classifications significantly changed over the school year, positively (to higher placement levels, i.e., increasing learning trajectories) or negatively (to lower placement levels, i.e., decreasing learning trajectories). We conducted a McNemar test to examine whether these shifts increased the percentage of students who met or exceeded grade-level standards at EOY compared to BOY.

We also assessed the degree of improvement in students' scores with a paired-samples t-tests on the pre/post scale scores. To determine whether scale score improvement depended on initial math competence, we conducted a repeated measures ANOVA analyzing scale scores at BOY and EOY for students who began the year meeting and not meeting grade-level standards.

We repeated all analyses for the subset of students from predominantly Black schools.

Results

The PowerMyLearning program was associated with **significant positive changes** in Relative Placement ($p<.001$, $r=.81$). Students were significantly more likely to be classified in a higher grade-relative Placement level at EOY than BOY; **70% of students showed upward movement in their grade-relative classification.**

This upward movement corresponded with a **significant 34% increase in the percentage of students meeting or exceeding grade-level standards** over the course of the PowerMyLearning program ($p<.001$, Cohen's $g=0.5$).

This was also true for the subset of students from the predominantly Black schools ($p < .001$, $r = .54$), with 69% of students showing upward movement in their grade-relative classification, including a significant increase of 44% of students meeting or exceeding grade-level standards ($p < .001$) over the course of the PowerMyLearning program.

The grade-relative improvements arose from increases in i-Ready scale scores, which were significantly higher at post-test compared to pre-test (+10.2pp, $p < .001$, $d = 1.56$). This was also true for the subset of students from the predominantly Black schools (+11.3pp, $p < .001$, $d = 1.65$).

Moreover, annual gains were significantly dependent on whether or not students began the year meeting grade-level standards ($p < .001$, $d = 0.26$). Students who did not meet grade-level standards at BOY (+10.7pp, $p < .001$, $d = 3.08$) made larger gains than students who did (+6.2pp, $p < .001$, $d = 0.65$). Likewise, scale score improvement for the subset of students from the predominantly Black schools significantly depended on whether or not students met grade-level standards at the beginning of the year ($p < .017$, $d = 0.13$). Students from predominantly Black schools who did not meet grade-level expectations at BOY (+11.4pp, $p < .001$, $d = 3.27$) made larger gains than students who did (+7.2 pp, $p < .001$, $d = 0.41$).

Discussion

PowerMyLearning is committed to building evidence around the impact of our work. This study found statistically significant effects on math achievement related to PowerMyLearning's math program, which included Family Playlists and professional learning, for K-2 students. The same patterns of improvement were seen for students in grades 3-5 and students from predominantly Black schools. This study demonstrates that PowerMyLearning partner schools can see math achievement gains that place students on improved learning trajectories. This work also highlights PowerMyLearning's impact on students with the highest needs, including students who are struggling in math and students from historically marginalized communities.

One limitation of this work is that these findings reflect the impact of all learning experiences during the 2023-24 school year and cannot be directly attributed to our intervention. We are currently conducting a randomized control trial, funded by the US Department of Education through an Education Innovation and Research (EIR) grant, to examine the impact of PowerMyLearning's programming and Family Playlists, which will enable us to more precisely determine the extent to which our programs are having causal effects.

About PowerMyLearning

PowerMyLearning is a national nonprofit that works hand-in-hand with educators and leaders to foster equitable learning environments that empower each student to thrive academically, socially, and emotionally.

As a professional learning organization, PowerMyLearning equips K-12 teachers and leaders with the expertise they need to ensure students master grade-level math content while developing critical skills for lifelong success. Programs include professional development, instructional coaching, and innovative tools like Family Playlists[®], which foster meaningful math discourse, support multilingual learners, and actively engage families in the learning process.

With over 25 years of experience serving historically marginalized communities, PowerMyLearning's work is backed by strong evidence. PowerMyLearning's research has shown statistically significant improvements in math achievement, including a +13% increase in i-Ready scores over two years, along with statistically significant gains in Social Emotional Learning (SEL), such as self-efficacy and growth mindset. Findings also indicate statistically significant improvements in teacher practice, including enhancing instructional design, data-driven instruction, and SEL-aligned teaching strategies. To learn more, visit PowerMyLearning.org/Impact.