Age of Learning®

My Reading Academy™ | RESEARCH BRIEF
MAY 2023

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Students Using My Reading Academy™ Significantly Outperform Peers on State-Administered Literacy Assessments

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Key Findings

- In a large-scale study, kindergartners who used *My Reading Academy* significantly outperformed peers on end-of-year literacy assessments, with greater gains among students who used the program more.
  - Kindergarteners in one district (n= 369) outperformed their comparison group peers on literacy overall (effect size = .26, $p < .05$).
  - Across the study (n= 619, from two districts) kindergarteners outperformed their comparison group peers on Alphabet Knowledge (effect size = .29, $p < .05$).
- Using *My Reading Academy* was especially beneficial for kindergartners who started out with lower baseline literacy skills.
- Among prekindergarteners (n = 473, 4 districts) who mastered at least half of the Alphabet Knowledge content in *My Reading Academy*, 95% ended the school year "On Track" compared to only 81% of those who did not have access to the program.
- Teachers found that *My Reading Academy* had a positive impact on specific literacy skills, such as phonological awareness. They advocated for the continued use of the user-friendly, personalized learning program in their classrooms.

Overview

Early reading skills have significant implications for success in school and beyond, and according to the Nation's Report Card, just one third of 4th graders performed at or above the NAEP Proficient level in 2022. Children enter school with different early childhood experiences and skills, and with the incomplete learning that affected many children throughout the COVID-19 pandemic, teachers need—more than ever before—high-quality early reading instructional tools to support children with varying learning needs. Adaptive educational technology can help teachers seeking to provide tailored learning experiences for their students, and game-based digital curricula that involve play can promote motivation and learning.

One such program is Age of Learning, Inc.'s, *My Reading Academy*, which provides a personalized path to learning to read through instructional videos, interactive learning games, and books. To understand the impact of *My Reading Academy* on students' foundational reading skills, Age of Learning partnered with an independent, nonprofit research organization with nearly 80 years of history working in research and development for government and industry. A quasi-experimental study was conducted, in which the third-party researchers led the quantitative data collection and data analysis. Age of Learning researchers conducted teacher interviews and supplementary data analyses. Both parties collaborated on the study's design, instrumentation, and interpretation of results.

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This study builds on an earlier correlational study showing a significant positive relationship between *My Reading Academy* usage and literacy achievement which has been certified by LearnPlatform as meeting ESSA Tier III standards for "Promising Evidence",[1] the present study has been certified by LearnPlatform as meeting ESSA Tier II standards for "Moderate Evidence."

My Reading Academy Program

My Reading Academy is an adaptive, game-based curriculum designed to help young children in prekindergarten through 2nd grade develop strong foundational reading skills. It operates on a patented Personalized Mastery Learning System™ and aims to build essential skills in reading, including phonemic awareness, phonics, vocabulary, reading fluency, and reading comprehension. Grounded in the science of reading and cognitive development research, the program delivers explicit and systematic phonemic awareness and phonics instruction paired with rich reading and language experiences. *My Reading Academy* uses initial diagnostic assessments to measure each child's prior knowledge. It then determines where the child is placed within the program based on what they know and are ready to learn next. The program emphasizes phonological awareness and phonemic awareness. With playful characters, songs, rhythms, movement, and repetition, children learn to attend to small changes in sound. Learners can play by mixing up a phoneme in a word or by predicting the last words of a rhyming verse, and the games sustain engagement and motivation by providing interactivity, adaptive challenges, and ongoing feedback. Each learner is presented with a sequence of problems and receives just-in-time feedback that corresponds with their level, promoting perseverance and cultivating long-term engagement. Figures 1 and 2 show examples of child-facing games in *My Reading Academy*.

Participants

The study sample included 20 prekindergarten and 15 kindergarten classrooms (35 total teachers) across four school districts: two in Virginia (districts A and B) and two in Texas (districts C and D). One teacher in the treatment group (with 17 students) left their teaching position in February 2022 and did not complete the remaining data collection activities, representing an attrition rate of about 3% in the treatment group. The comparison group consisted of students in the same districts who did not use *My Reading Academy*. Across the four districts, a total of 570 students who used *My Reading Academy* and 890 students who did not use the program had matched pre- and post-test scores. Then, using key demographic and prior knowledge variables, propensity score weighting was used to match and

Figure 1. The Bumper Tiles game teaches learners how to recognize the letters of the alphabet by tapping the letter tiles driving the bumper cars.

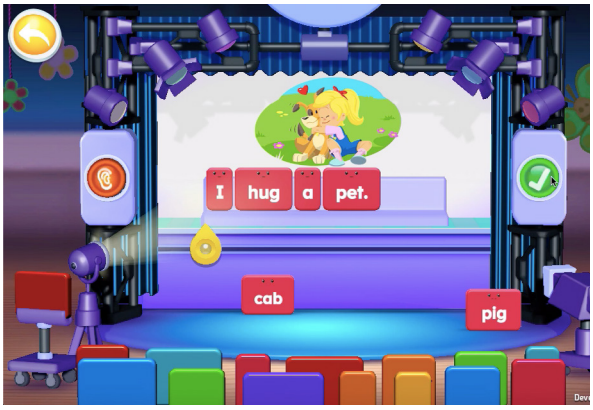

Figure 2. In The Sentence Show game, learners practice building sentences out of scrambled words shown on the tiles by dragging the tiles one by one up to the stage.

1 Bang, H.J. & Thai, K-P. (2022). My Reading Academy helps prekindergarten and kindergarten students strengthen early reading skills and become more interested in learning to read: A case study of implementation during the pandemic. Research Brief. Age of Learning, Inc. https://www.ageoflearning.com/case_studies/UPDATED_MRA_ResrchBrf_RGB_24_102122.pdf

2 The variables used for propensity score weighting included district, age, grade, race/ethnicity, gender, teacher ID, pretest phonemic awareness score, and pretest alphabet knowledge score. Students with missing information on one of these variables were excluded from the analytic sample.

select students for the comparison group to ensure the two groups were as comparable as possible.[2] A total of 1,092 students were included in the analytic sample, with 402 students (222 prekindergartner and 180 kindergarten) who used *My Reading Academy*, and 690 students (251 prekindergartner and 439 kindergarten) who used other reading programs in the comparison group. On average, the prekindergartner students were 4.37 years old (SD = 0.38) and kindergartners were 5.44 years old (SD = 0.35). Across this sample, there were 541 females and 551 males, of whom 37% were White, 32% African American, 26% Hispanic, 3% Asian, and 2% identified as Native American, mixed race, or other.

Procedures

Prior to the start of implementation, all teachers participated in a webinar and a self-paced training on *My Reading Academy*. They were asked to use *My Reading Academy* for at least 60 minutes per week. Each teacher received access to the Teacher Portal, containing information about their students' usage and progress in the program. Teachers also completed a pre-survey and an end-of-study survey. Seventeen teachers (about 50% of the sample) volunteered to participate in a 60-minute interview at the end of the study. The districts provided demographic and assessment data, which included the CIRCLE Progress Monitoring System for prekindergartner students from Texas and the Phonological Awareness Literacy Screening (PALS) for prekindergartner and kindergarten students from Virginia.

Baseline Equivalence & Analysis

To evaluate baseline equivalence, we tested the difference in pretest scores between comparison and treatment students, separated by domain and grade. All domains reported in the study met baseline equivalence requirements set by the What Works Clearinghouse (2022). Hierarchical linear models were conducted to account for the nested structure of the data (students within classrooms), and controls included pretest scores, student characteristics (age, gender, grade level, ethnicity), and classroom characteristics (teachers' years of teaching, graduate degrees, use of a literacy curriculum, number of devices, and weeks the class was unable to meet due to COVID-19).

Results

Finding 1. Kindergartners who used *My Reading Academy* significantly outperformed their comparison group peers on end-of-year literacy assessments, with greater gains demonstrated by students who used the program more.

- Kindergarteners in one district (n = 369) outperformed their comparison group peers on literacy overall (effect size = .26, $p < .05$).
- Kindergarteners in the study (n = 619, from two districts) outperformed their comparison group peers in Alphabet Knowledge (effect size = .29, $p < .05$).

The recommended weekly usage for *My Reading Academy* was 45–60 minutes over the course of the 2021–2022 school year. Kindergarten students used *My Reading Academy* for an average of 41 minutes per active week (*SD* = 17.5) over 22 active weeks (*SD* = 4.1). They spent, on average, 15 hours (*SD* = 7.0) using *My Reading Academy* and completed an average of 146 Learning Activities (*SD* = 65.8).

Kindergartners who used *My Reading Academy* made significantly greater gains from fall to spring on the state-administered end-of-year literacy assessment than the comparison group, especially on Alphabet Knowledge (see Figure 3). After controlling for student and classroom characteristics in a hierarchical linear model, those who used *My Reading Academy* made a 55% gain on average in Alphabet Knowledge scores while the comparison group children made a 47% gain on average in Alphabet Knowledge scores (effect size = 0.29, $p < .05$).

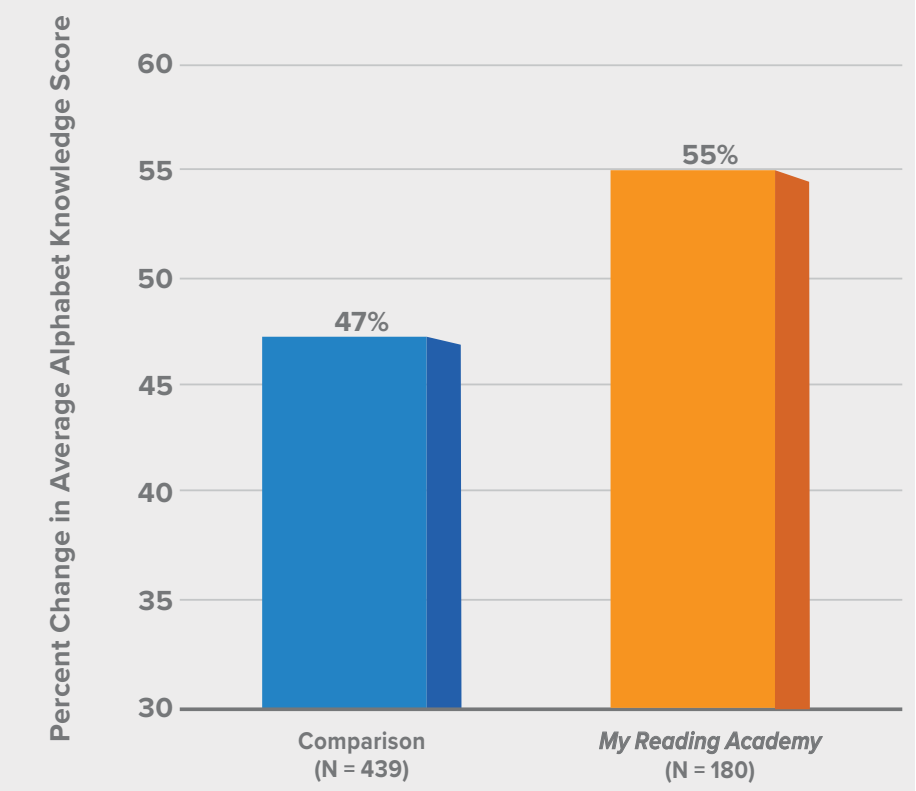

Figure 3. Percent change in average Alphabet Knowledge scores from fall to spring (comparison n = 439, *My Reading Academy* n = 180)

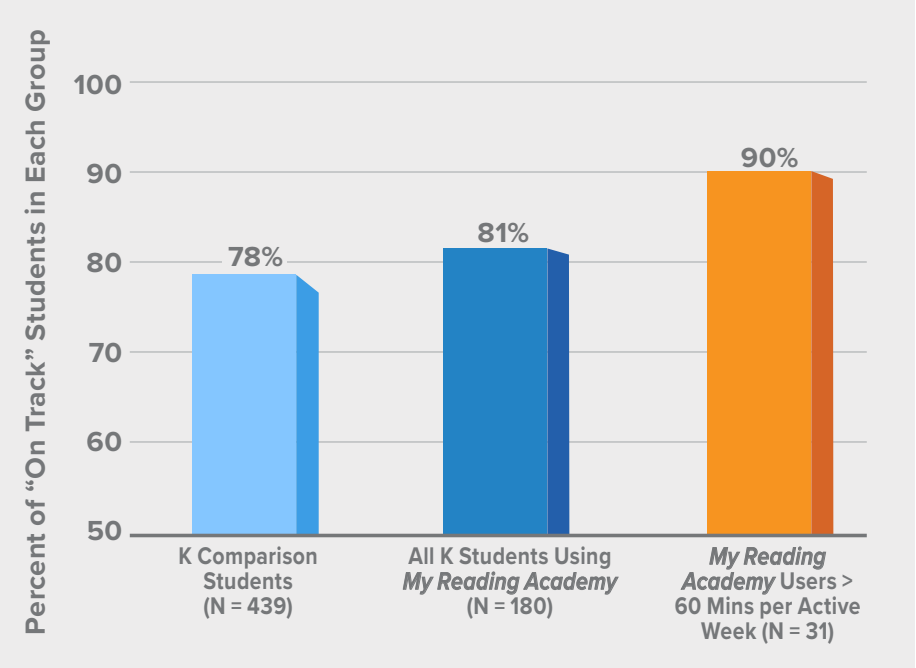

Figure 4. Proportions of students who ended the school year "On Track" in Alphabet Knowledge across the comparison group, all students using *My Reading Academy,* and those who used *My Reading Academy* for at least 60 minutes per active week

A total of 31 kindergartners who used *My Reading Academy* averaged 60 minutes per week (24 hours total [*SD* = 3.0] over 23 active weeks [*SD* = 1.8]) and completed an average of 209 Learning Activities (*SD* = 54.4). These students had even greater gains and were more likely to end the school year "On Track" in Alphabet Knowledge relative to their comparison group peers (effect size = .47, $p < .05$).

Finding 2. Using *My Reading Academy* was especially beneficial for kindergartners who started out with lower baseline literacy skills.

Among those who used *My Reading Academy*, 97 kindergartners scored below the median (46) on the baseline literacy assessment. These students spent, on average, 37 minutes per week (*SD* = 17.3) over 21 active weeks (*SD* = 4.1), completing an average of 127 Learning Activities (*SD* = 57.3). These students who started out the school year with lower literacy skills made significantly greater gains on the end-of-year literacy assessments relative to those who started out the school year with a higher level of literacy skills (effect size = 1.8, $p < .001$).

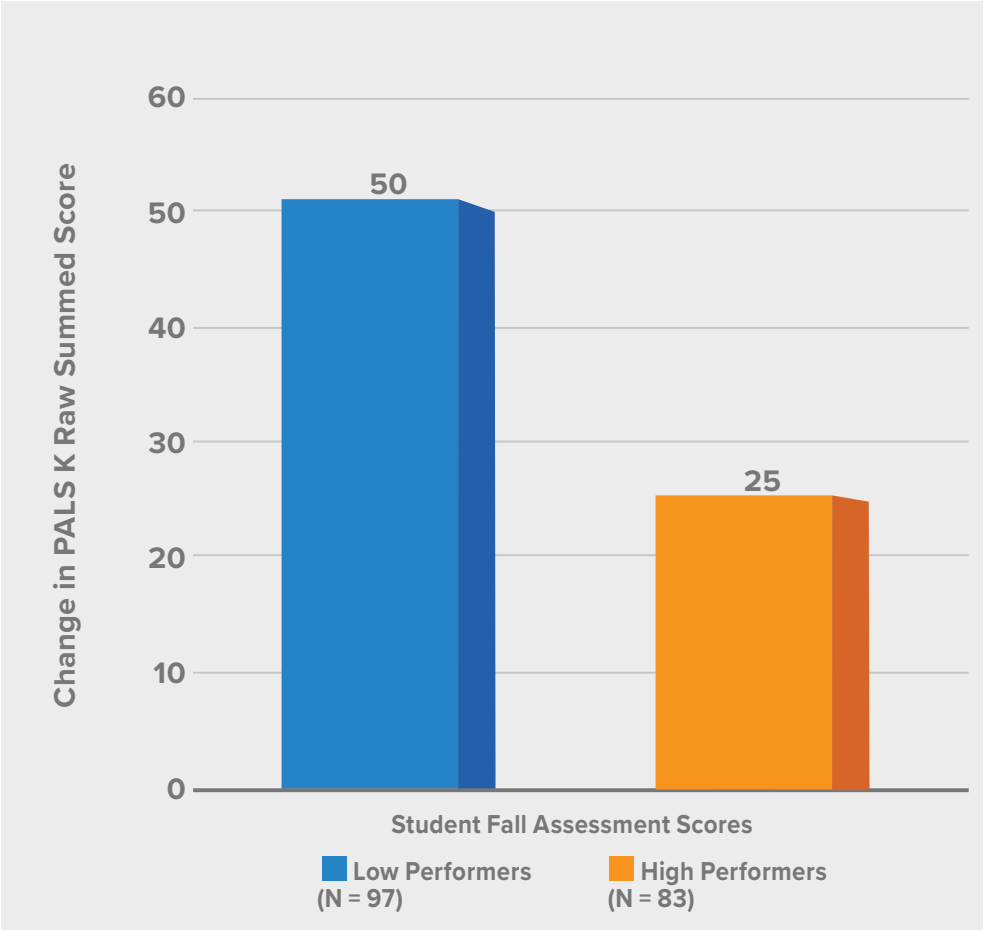

Figure 5. Comparison of the change score from fall to spring between treatment group kindergartners who started the school year with lower overall literacy skills versus those who started with higher overall literacy skills

Finding 3. Among prekindergartners (n = 473, 4 districts) who mastered at least half of the Alphabet Knowledge content in *My Reading Academy, 95%* ended the school year "On Track," in comparison to only 81 % of those who did not have access to the program.

Prekindergartner students used *My Reading Academy* for an average of 44 minutes per active week (SD = 15.9) over 17 active weeks (SD = 6.4). On average, they spent 13 hours (SD = 8.2) using *My Reading Academy*, completing an average of 98 Learning Activities (SD = 52.8). No statistically significant differences were observed between treatment and comparison group prekindergartners. However, among prekindergartners who used *My Reading Academy*, those who mastered at least 16 Alphabet Knowledge skills in the program (about half of the Alphabet Knowledge content in the program) were significantly more likely to end the school year "On Track" on this skill than their peers in the comparison group (effect size = .40, $p < .01$). These students used the program for 55 minutes per week on average (total 18 hours, *SD* = 8.4) across 19 active weeks (*SD* = 5.9). Ninety-five percent of students who used *My Reading Academy* consistently (~1 hour per week) ended the school year "On Track," relative to 81% of comparison group students who did not use the program.

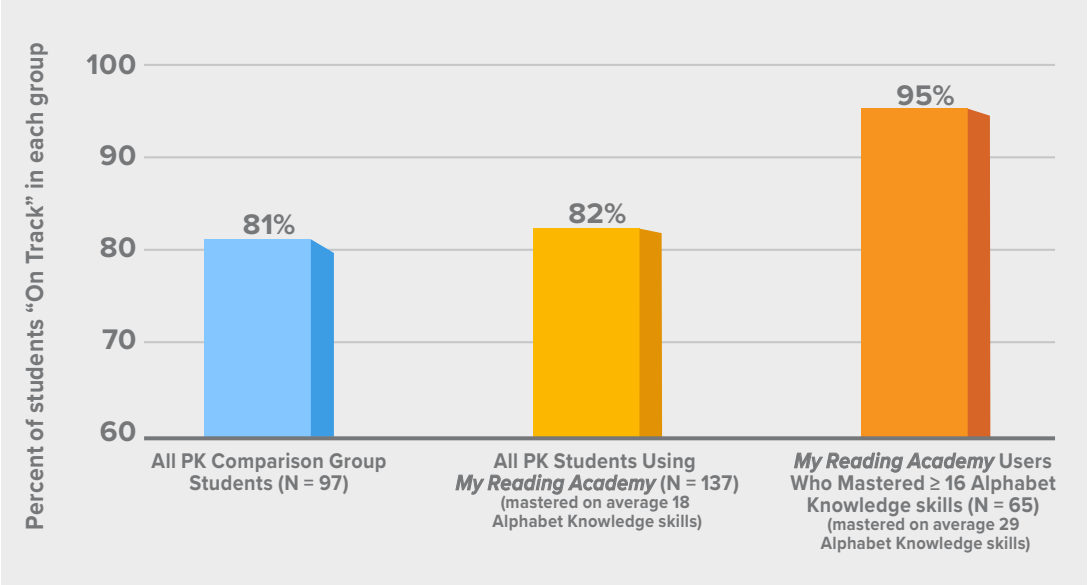

Figure 6. Comparison of prekindergartners who ended the school year on track in Alphabet Knowledge across the comparison group and subgroups of students who mastered different numbers of skills in *My Reading Academy*

Finding 4. Teachers found that *My Reading Academy* had a positive impact on specific literacy skills such as phonological awareness, and they advocated for continued use of the user-friendly, personalized learning program in their classrooms.

On end-of-study surveys, teachers provided their feedback on how *My Reading Academy* affected their students' literacy skills and their perceptions about the program overall. Of the 33 teachers (94% of the participants) who completed the end-of-study surveys

- Eighty-five percent indicated that *My Reading Academy* had a positive impact on students' phonological awareness skills.
- Eighty-five percent wanted to continue using *My Reading Academy*.
- Eighty-five percent found *My Reading Academy* easy to use.

Teachers also shared their perceptions of *My Reading Academy* as a valuable learning resource that is effective, engaging, empowering, and equitable.

Effective

> *"I think it's been very effective. We can tell from their fall PALS and then using My Reading Academy to work on those skills that needed a little bit more love. All but one kid passed the PALS."*
>
> —Prekindergartner teacher, district A

Engaging

> *"They love the robot, and when the robot danced, they stood up and just started dancing and you can see them focus on the stories or they come up and tell me, 'I got a new book,' or if it was something that was really was interesting, they would come to let me know. I thought it was pretty exciting when they would come to show me something that they were excited about."*
>
> —Prekindergartner teacher, district C

Empowering

> *"I can use the information [on the Dashboard], especially if it seems to coincide with what I'm seeing in small groups. I can see . . . this one is struggling with rhyme in small group also, and this confirms that. So it helps when it confirms . . . what is a struggle across the board. I move kids depending on what the needs are, so it's helpful to use that as a grouping tool along with my own data."*
>
> —Kindergarten teacher, district B

> *"My lower [level] kids, they really benefited from it because it pushed them to be independent and not rely on their peers. For my higher [level] kids, I definitely saw that it was a nice push for them because they were able to get through the beginning stages really quickly and move on further from there. It was really nice that it catered to their individual needs."*
>
> —Prekindergartner teacher, district D

Equitable

> *"That differentiation piece, the way it levels, that's the most helpful piece. . . . when I know they're working at a program that is not moving them into an area that they don't need to be or aren't ready to be."*
>
> —Kindergarten teacher, district B

> *"I think it's equitable. If you had exposure to letters and reading, then it puts you where you need to be. If you've never seen anything, then it puts you exactly where you needed to be. If you were ready to move on and start that reading and rhyming and stuff, then it put you there. Everybody had choices no matter what level they were on."*
>
> —Prekindergartner teacher, district A

Conclusion

This study is the first study to evaluate the impact of Age of Learning's *My Reading Academy* program on students' development of reading skills in prekindergarten and kindergarten classrooms. The study showed that kindergarten students who used *My Reading Academy* made significantly greater growth in literacy skills than their peers who did not use the program, especially in Alphabet Knowledge skills. The impact of *My Reading Academy* is greater for those students who started with a lower level of literacy skills. More usage of *My Reading Academy* was associated with higher performance on the end-of-study assessments, building on the findings of an earlier correlational study examining the implementation of the program.[3] Finally, teachers who used *My Reading Academy* recognized it as an effective, user-friendly program that offered personalized learning experiences for their students, and they confirmed it to be a valuable learning resource they want to continue using. This study has been reviewed by a third party educational research company, LearnPlatform, as meeting ESSA Level II standards for "Moderate Evidence."

3 Bang, H.J. & Thai, K-P. (2022). My Reading Academy helps prekindergarten and kindergarten students strengthen early reading skills and become more interested in learning to read: A case study of implementation during the pandemic. Research Brief. Age of Learning, Inc. https://www.ageoflearning.com/case_studies/UPDATED_MRA_ResrchBrf_RGB_24_102122.pdf