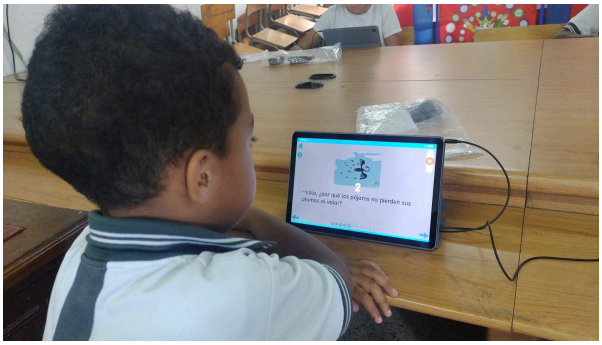
eKidz Reading Fluency Pilot: Narrative Research Report

Introduction

This report details the methodology, findings, and implications of a pilot study evaluating the eKidz digital reading platform's impact on student reading fluency. Conducted in partnership with the Luker Foundation, this study aimed to assess the efficacy of a structured, evidence-based digital intervention for improving literacy skills among vulnerable children in Colombia, including those in rural areas with limited connectivity.

Headline Results

- **Significant Overall Growth:** On average, students increased their reading speed by **12.1 words per minute (WPM)** from the first eKidz book to the last on the piloted reading level in the eKidz app. This improvement is statistically significant (t=3.305, p=0.0021).
- **Consistent Per-Book Gains:** A linear mixed-effects model shows that students gained an average of **2.13 WPM for each eKidz book they read** in the sequence.
- **Comprehension Maintained:** This growth in reading speed was achieved without any statistical difference in comprehension levels, ensuring that students continued to understand what they were reading.



Population Details

The study was conducted across four school sites in Colombia, encompassing both urban and rural contexts.

- **Total Sample Size:** 63 students participated in the pilot.
- **Grade Levels and Age Ranges:** The students were in the 2nd and 3rd grades, with ages ranging from 7 to 8 years old.
- **Geographic Context:** The pilot included two rural schools with low or no connectivity (La Cabaña) and two urban schools with some connectivity (Normal Las Caldas).
- **Demographics:** All participating students were part of the Luker Foundation's existing ATAL intervention program, receiving support from two dedicated tutors.

Intervention

The eKidz intervention was designed to provide a structured and engaging reading experience. The core components of the student experience included:

- **Fixed Reading Sequence:** Students progressed through a sequence of 6-7 books at eKidz Level 4, a complexity level typically mastered by the middle of 2nd grade.
- **Multi-Modal Learning:** For each book, students engaged in independent reading, listened to a narration of the text, and recorded themselves reading aloud.
- **AI-Powered Assessment:** AI-powered oral reading fluency tests were administered at the beginning (Level 3) and end (Level 4) of the pilot to measure progress.
- **Comprehension Checks:** Students completed comprehension questions after each book to ensure they were understanding the content. Due to connectivity challenges, these were sometimes answered with a delay.
- **Time-on-Task:** The program was implemented in two 45-minute sessions per week, with an average of 8.5 sessions completed per child over the course of the study. All sessions were guided by a tutor and conducted offline.

Study Design

The study was structured to provide a clear and transparent evaluation of the eKidz platform's impact.

- **Design Type:** Pre/post-test design.
- **Duration:** The pilot ran for 7 school weeks, from July 28th to September 12nd, 2025.
- **Analysis Approach:** An initial AI oral reading fluency test (Level 3) was used to establish a baseline and group students by entry-level reading ability. A final AI test (Level 4) was administered at the end. All student recordings were saved locally and

later uploaded to the eKidz cloud for AI analysis based on ASR (Automatic Speech Recognition) and pre- /post-processing algorithms. A statistical analysis was run on reading speed (WPM), and this was overlaid with comprehension scores. The performance of students across four reading-level quartiles was then compared.
- **Completion Rate:** A high completion rate was observed, with the average student completing 8.5 sessions.

Technical and Implementation Challenges Overcome

The success of the pilot is particularly noteworthy given the significant technical and logistical hurdles that were addressed:

- **Extreme Low-Bandwidth Environments:** The platform was required to function in areas with practically no internet, with connectivity speeds as low as 1.1 Mbps.

- **Reliable Offline Data Synchronization:** A system was developed to save all student oral reading recordings locally on devices and later upload them reliably to the cloud for analysis, ensuring no data was lost despite poor connectivity.
- **Shared Device Progression:** The offline practice mode was engineered to integrate periodical progress updates for each individual student, with no reliance on one-to-one device allocation.
- **Accessible Reporting:** The platform ensured that tutors could access reports on formative and summative assessments from any available device, both within and outside the school environment.

- **Stakeholder Data Provision:** The platform successfully gathered and provided nuanced student data for scientific evaluation by eKidz, Luker Foundation and government partners.
- **Instructional Efficiency:** The program was designed to deliver a comprehensive teaching and independent learning experience within a limited schedule of only two lessons per week, often in noisy classroom environments.

Context & Confounding Factors

The pilot was conducted within the students' existing educational environment, and several factors could have influenced the results.

- **Existing Interventions:** All students were part of the Luker Foundation's ATAL tutoring program and continued with their regular classroom instruction.
- **Controlled Digital Environment:** No other digital reading programs were used by the students during the pilot. All eKidz use was confined to the tutored sessions, with no access from home.
- **Developmental Progression:** The study took place during the second half of the academic year, a period when natural developmental progression in reading skills is expected.

Findings

The pilot yielded statistically significant and highly encouraging results, demonstrating the effectiveness of the eKidz platform.

Significant Gains in Reading Fluency Without Compromising Comprehension

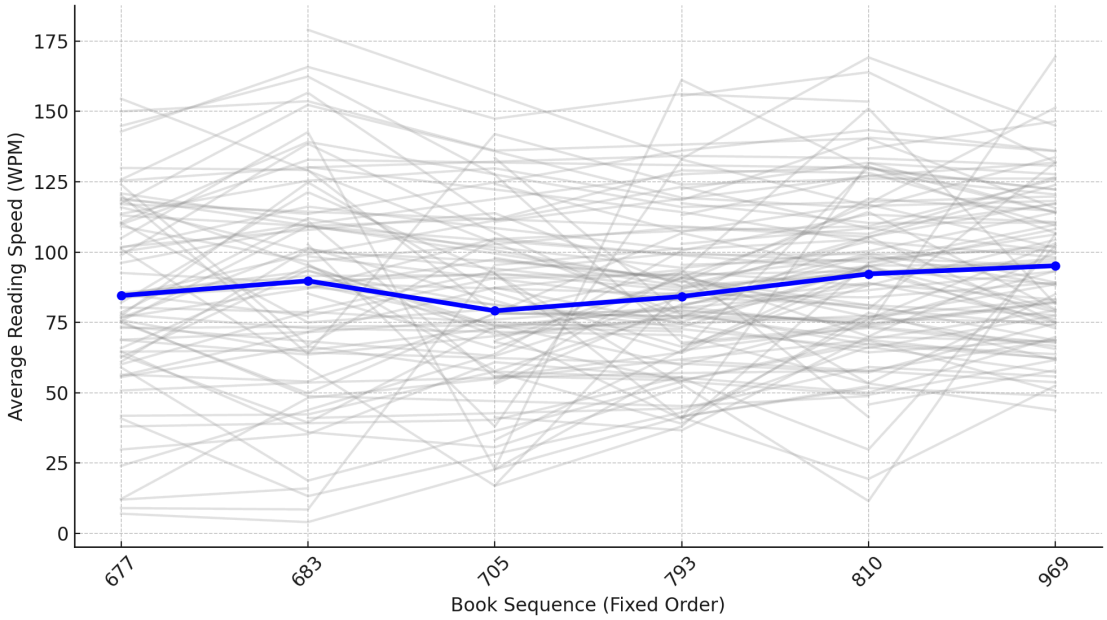
On average, students increased their reading speed by **12.1 words per minute (WPM)** from the first book to the last. This improvement was achieved without any statistical difference in comprehension levels, indicating that students were reading faster while still understanding the material. A linear mixed-effects model further revealed a consistent gain of **2.13 WPM for each eKidz book** read.

Equity Impact: Accelerated Growth for Developing Readers

A deeper analysis of the data revealed a powerful equity outcome: the students who started with the lowest reading fluency (the weakest quartile) demonstrated the most significant gains, improving at a rate more than 40% faster than students in the two stronger quartiles. This highlights the program's effectiveness as an accelerator for at-risk learners.

Average Reading Speed: Acceleration during the Intervention

WPM on 4 best pages of each book in a 6-book sequence



This chart displays the reading fluency trajectories for each student (grey lines) through the fixed 6-book sequence. The bold blue line represents the average reading speed of the cohort, which shows a clear upward trend from approximately 87 WPM to 96 WPM. This visualization highlights both individual variability and the consistent positive effect of the program on the group as a whole.

A deeper analysis reveals one of the eKidz pilot's most powerful outcomes: the digital program was most effective for the students who needed the most support. By examining growth rates across different reader quartiles, it's clear that the intervention helps close fluency gaps.

- **Targeted Impact:** The program is a powerful accelerator for developing readers. The **weakest students (Q1) and the next sub-group of students (Q2) showed the fastest rate of improvement**, and their overall gain was statistically significant. This demonstrates the program's ability to effectively address the needs of at-risk learners.
- **Supports All Levels:** Stronger readers (Q4) successfully **maintained their high fluency levels**, indicating the program is sufficiently engaging and does not hinder advanced students.
- **Evidence-Based Success:** The data provides strong evidence that this structured digital reading sequence is a scalable and effective tool. It successfully **increases**

reading speed without sacrificing comprehension and, most importantly, **accelerates growth for students who are furthest behind**.

Qualitative Data

The quantitative findings were strongly supported by positive feedback from the tutors involved in the pilot.

- **Enhanced Motivation & Concentration:** Tutors reported a notable improvement in student motivation and in-class concentration, observing that students genuinely loved the eKidz intervention sessions.
- **Rapid & Easy Adoption:** The eKidz platform demonstrated high usability. Both students and tutors became proficient users within the first two weeks of the rollout, even in challenging offline environments.

Limitations and Next Steps

While the results of this pilot are highly promising, it is important to acknowledge its limitations and outline a path for future research.

Limitations

- **Sample Size and Scope:** The study was conducted with a relatively small sample of 63 students at four project sites.
- **Duration:** The 7-week duration of the study provides a snapshot of short-term gains.
- **Standardized Measures:** The pilot relied on the eKidz platform's internal comprehension measures. While a standardized, calibrated assessment was conducted pre- and post intervention. The results have not yet been scientifically evaluated. We are expecting an integrated report within several months from the partner researcher.

Next Steps

- **Larger and More Diverse Samples:** Future research should involve larger and more diverse student populations across multiple school sites and geographic regions.
- **Longer Study Duration:** A longer study would allow for the evaluation of long-term fluency gains and knowledge retention.
- **Correlation of Usage Logs with Outcomes:** A more detailed analysis correlating specific usage patterns within the eKidz platform (e.g., time spent on different activities) with learning outcomes could provide deeper insights into the most effective components of the intervention. In the current pilot the focus was on reaching a sustainable performance of the offline/online modules.

Conclusion & Implications

The combination of strong quantitative data and positive qualitative feedback provides compelling evidence for the pilot's success. eKidz not only **raises the average fluency for the entire cohort** but also acts as a powerful **accelerator for students who are furthest behind**. This evidence-based approach successfully increases reading speed without sacrificing comprehension, supporting a scalable, engaging, and impactful solution for widespread implementation.