Accelerating Reading Skills among EL and non-EL Middle Schoolers: An Evaluation of the Lexia® PowerUp Literacy® Program

AN ESSA STRONG RESEARCH BRIEF

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Study Highlights

ESSA STRONG LEVEL

This cluster randomized control study meets standards of STRONG evidence – the highest level of effectiveness defined by ESSA.

NEARLY 30 POINTS

PowerUp users outgained non-users by nearly 30 points on a fluency test measuring word identification, syntactic processing and basic reading comprehension. This corresponds to a large effect size of .69

35%

English Learners using PowerUp showed a 35% gain on the fluency test over the course of the study, indicating that PowerUp was as effective for EL students as it was for non-EL students.

Results from this study prove that PowerUp users closed the gap in mastery of foundational literacy skills compared to non-users.
Background

Achieving proficiency in reading is an essential goal for students in middle school. Unfortunately, far too many middle school students in the United States are not proficient readers. According to standards set by the US Department of Education and Institute of Education Sciences (NAEP, 2019):¹

66% OF EIGHTH GRADERS OVERALL FAIL TO MEET READING STANDARDS

96% OF ENGLISH LEARNERS (ELS) FAIL TO MEET PROFICIENT READING STANDARDS

PowerUp

In this study, we studied the Lexia® PowerUp Literacy® program (PowerUp) as a probable solution for strengthening the reading skills of all struggling and non-proficient middle school students, including ELs.

Over 300,000 students globally are using PowerUp. As a blended learning program, PowerUp features online content that students work on independently in a sequential fashion, as well as offline, teacher-led activities that promote generalization of skills. Built on established reading science and pedagogy, PowerUp delivers instruction in three complementary strands:

- **Word Study**: focuses on enhancing decoding strategies to build stronger word identification skills
- **Grammar**: addresses syntactic processing and related skills
- **Comprehension**: works to advance background knowledge and teach verbal reasoning and comprehension strategies

ESSA Strong Research

This study was designed to meet the criteria for strong research outlined by the Every Student Succeeds Act (ESSA). Under ESSA, only evidence-based interventions can be purchased with certain federal funds, including Title I and Comprehensive Support and Improvement grants. Strong research is the highest level of evidence in this framework. Programs backed by strong evidence are supported by well-designed and implemented experimental research studies, with students randomly assigned to use either a treatment program or receive alternative instruction.

About this study

In this strong study, we extended findings from previous research on PowerUp. The effectiveness of PowerUp has been shown on tests of general reading ability, but what remains unclear is the specific skills that students are developing that contribute to positive outcomes on the broad assessments and whether effects generalize to English Learners. Here we asked:

• How well does PowerUp contribute to gains on tests that pose different demands on reading skills (word identification, syntactic processing, basic reading comprehension) compared to an alternative program?

• Do the gains hold up equally for English Learners and native English speakers?

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Method

Sample
Lexia partnered with a mid-sized school district located in the Boston metropolitan area. All schools in the district receive school-wide Title I support. In the year prior to the study, only 42% of sixth grade students in the district met or exceeded state English Language Arts (ELA) proficiency standards. This study focused on 122 sixth grade students enrolled in six supplemental reading classes at two district middle schools. Two of the classes were in one school and four in the other. All supplemental reading classes within each school were taught by the same teacher. These classes met 2-3 days per week and provided students with extra time to work on literacy skills.⁶

Design
We conducted a cluster randomized control trial that took place over a full school year. Half of the supplemental classes in each school were randomly assigned to a treatment group using PowerUp and the other half to a control group. Control classes in both schools used an alternate blended learning reading program.⁷

### STUDENT CHARACTERISTICS

<table>
<thead>
<tr>
<th>Low-Income</th>
<th>Female</th>
<th>Current ELs</th>
<th>Former ELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>56%</td>
<td>55%</td>
<td>10%</td>
<td>33%</td>
</tr>
</tbody>
</table>

**Race**
- 69% Hispanic
- 25% White
- 4% Asian
- 2% Black
- 1% Mixed Race

**Native Language**
- 53% Spanish
- 27% English
- 8% Portuguese
- 6% Arabic
- 5% Other Languages
- 2% Khmer

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⁶ In addition to these supplemental classes, all students in this study were enrolled in general ELA classes following a curriculum aligned to Common Core State Standards.

⁷ The alternative program focused on reading comprehension skills.
Reading Tests

Students were given three standardized reading fluency tests. Each was designed to address different reading skills. Students had a 3-minute time limit to complete each test. Classes were administered the tests in the fall (pretest) and the spring (posttest).

**TOSWRF2.** The Test of Silent Word Fluency, Second Edition\(^8\) was used to assess word identification skills. This test presents strings of unrelated words without spaces (e.g., strictdepthmuzzlefudgefickle), and students are asked to mark off as many distinct words as possible (e.g., strict/depth/muzzle/fudge/fickle).

**TOSREC.** The 6th grade version of the Test of Silent Reading Efficiency and Comprehension\(^9\) was used to assess basic reading comprehension and word identification skills. This test consists of a series of sentences that are true or false (e.g., “If you cannot hear you may need to wear goggles on your forehead.”). Students marked “Yes” for a true sentence or “No” for a false sentence.

**TOSCRF2.** The Test of Silent Contextual Reading Fluency, Second Edition\(^10\) was the most complex test in this study, used to assess multiple skills (word identification, syntactic processing, basic reading comprehension). The TOSCRF2 includes 17 passages, each containing a series of words presented without spaces. For example:

```
THEBOYSWENTINTOASTOREANDLOOKEDATBOOKSABOUT
ANIMALSONEBOYSAWABOOKABOUTHORSES
```

Students separate the string into distinct words that render a coherent reading of the passage. For example:

```
THE/BOYS/WENT/INTO/A/STORE/AND/LOOKED/AT/BOOKS/ABOUT
ANIMALS/ONE/BOY/SAW/A/BOOK/ABOUT/HORSES
```

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Results

PowerUp Implementation
PowerUp students averaged 24 weeks of online program use over the school year. On average, they used the program two days per week for 28 minutes per day.

Reading Outcomes
PowerUp users demonstrated considerable learning over the course of the school year. In the fall, the control group scored significantly higher than the PowerUp treatment group on the TOSCRF2. Following use of PowerUp, the treatment group gained 24.9 points while the control group declined 3.4 points. Thus, PowerUp users closed the gap with control students on this complex reading fluency test.

Effect size is a standardized, scale-free measure of the impact of an educational intervention that can help us interpret the practical meaning of these results. As a benchmark, the Institute of Education Sciences (IES) reports that typical middle school interventions yield effect sizes on measures like the TOSCRF2 of approximately .26. In this study, we found that PowerUp’s effect size was .69 – a large effect. This suggests that PowerUp was 2.5x more effective than typical interventions.

Both English Learners and native speakers benefited equally from PowerUp. English Learners who used PowerUp gained 29.4 points on the TOSCRF2, which reflects a 35% improvement over the course of the study.

For the less complex tests – TOSWRF2 and TOSREC – differences between treatment and control groups were not significant.

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11 t(103) = 5.13, p < .001.
12 After controlling for gender and school, the discrepancy in gain scores was significant (F(1,101) = 12.311, p = .001, partial η² = .109, Cohen’s d = 0.69).
14 Treatment * EL Status (where 0=native English speaker, 1 = current or former English Learner) interaction term was not significant, p > .05, indicating that EL status did not moderate the treatment effect.
Conclusion

This cluster randomized control trial met the highest standards under ESSA – achieving a strong level of evidence. PowerUp users showed large gains on a reading test that assesses multiple skills, including fluency, word identification, syntactic processing, and basic reading comprehension. Both ELs and non-ELs experienced similar benefits. This proves that PowerUp is successful in promoting all of these important, foundational literacy skills for a wide range of learners.

To achieve academic success, students in middle school must have established foundational reading skills. A comprehensive program like PowerUp built on established reading science and pedagogy has the potential to help students achieve this goal and become proficient, well-rounded readers.