RESEARCH BRIEF ✕ PEER-REVIEWED PUBLICATION

Bolstering Middle School Students' Component Reading Skills: An Evaluation of Lexia PowerUp Blended Learning Program

Key Findings

- PowerUp users outgained control students by approximately 25 points on a standardized test of word identification, syntactic processing, and basic reading comprehension skills.
- The estimated effect size of using PowerUp was 0.69. This is considered a large effect and is more than 2.5 larger than the average effect size for middle school reading interventions.

Introduction

Achieving proficiency in reading is an essential goal for middle school students. To understand and learn from secondary-level texts, adolescents must demonstrate efficient word identification and solid language processing skills (Torgesen, Houston, Rissman, & Kosanovich, 2007). Unfortunately, far too many U.S. middle school students are at risk for reading difficulties. According to standards set by the U.S. Department of Education and Institute of Education Sciences, 69% of middle school students fail to meet proficient reading standards (NAEP, 2022).

According to the Simple View of Reading (Hoover & Gough, 1990), proficient readers must draw on solid *word identification skills* coupled with *language processing skills* (used in understanding spoken language). Building strengths in these areas sets the foundation for proficient reading comprehension. Yet most reading interventions for middle school students primarily focus on comprehension strategies without explicitly addressing component reading skills like word identification or grammatical/syntactic processing (Herrera, Truckenmiller, & Foorman, 2016).

Lexia PowerUp Literacy (PowerUp) provides explicit instruction in both word identification and language processing skills. As a blended learning program, PowerUp provides a series of self-paced online activities as well as scripted lessons and resources for teachers to promote generalization of skills. Based in the Simple View of Reading, PowerUp delivers instruction across three complementary strands: Word Study, Grammar, and Comprehension.

This study examined the following research question: How effective is PowerUp in promoting efficient and fluent word identification, syntactic processing, and basic reading comprehension skills for at-risk students compared to a more conventional program that primarily provides comprehension practice?

Study Design

Lexia partnered with a mid-sized school district for this research study. All schools in the district received school-wide Title I support. In the year prior to this research 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 students enrolled in six supplemental literacy classes at two district middle schools. Two classes were in one middle school (School A) and four were in a second middle school (School B). Female students made up 55% of the sample. Most students identified as Hispanic (69%) or White (25%). Ten percent (10%) received English Learner services, 33% were former English Learners, and 56% were classified as economically disadvantaged.

122 Students	6 Classes	2 Schools

Classes within each school were randomly assigned to either a treatment group that used PowerUp or a control group that used an alternate curriculum. There was one treatment and one control class in School A, and two treatment and two control classes in School B. All supplemental reading classes within each school were taught by the same teacher. Supplemental literacy classes were intended to provide students extra time to work on reading skills. The classes met 2-3 days per week. In addition, all students were enrolled in general ELA classes with curricula aligned to Common Core State Standards. Students in the treatment group used PowerUp for approximately 24 weeks over the course of the school year. On average, they used the program 2 days per week for 28 minutes per day.

Students' reading skills were assessed with three standardized tests. These tests were designed to assess the word identification and language processing skills needed to support reading comprehension. Students completed Form A of each test in the fall (pretest) and Form C in the spring (posttest).

TOSWRF2. The Test of Silent Word Reading Fluency, Second Edition (Mather, Hammill, Allen, & Roberts, 2014) was used to assess word identification skills. This test presents a string of unrelated words without spaces (e.g., strictdepthmuzzlefudgefickle) and students mark off as many distinct words as possible in 3 minutes (e.g., strict/depth/muzzle/fudge/fickle).

TOSREC. The 6th grade version of the Test of Silent Reading Efficiency and Comprehension (Hammill, Wiederholt, & Allen, 2014) was used to assess basic reading comprehension and word identification skills. This test consists of a series of sentences to be marked true or false (e.g. "If you cannot hear you may need to wear goggles on your forehead") over the course of 3 minutes.

TOSCRF2. The Test of Silent Contextual Reading Fluency, Second Edition (Wagner, Torgesen, Rashotte, & Pearson, 2010) was the most complex test in this study, used to assess multiple reading skills: efficient and fluent word identification, syntactic processing, and basic reading comprehension. The TOSCRF2 includes 17 passages, each containing a series of words presented without spaces. For example:

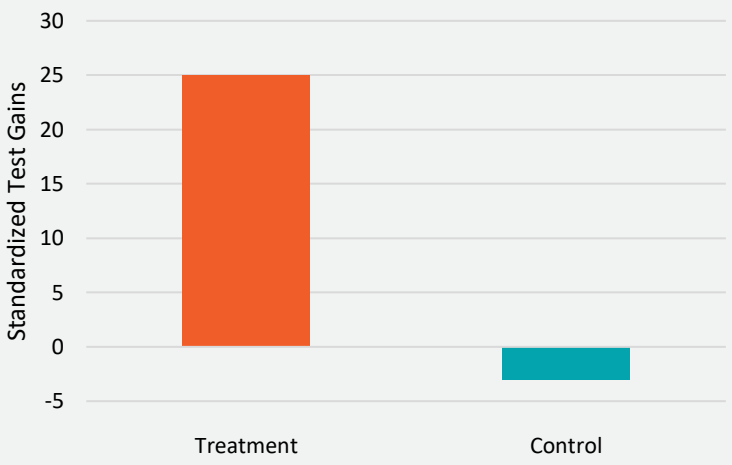
Students separate the string into distinct words that render a coherent meaning of the passage. They use slashes to mark off as many words as possible in 3 minutes. For example:

Gain scores on the three reading tests were analyzed using Analysis of Covariance (ANCOVA) models.

Results

PowerUp users outgained control students by approximately 25 points on a standardized test of word identification, syntactic processing, and basic reading comprehension skills.

After using PowerUp over the course of one school year, the treatment group significantly outgained the control group on the TOSCRF2. The treatment group gained 24.9 points from pretest to posttest while the control group declined 3.4 points. For the less complex tests – TOSWRF2 and TOSREC – gain score differences between treatment and control groups were not significant.



After using PowerUp, students earned higher scores than control students on a test of silent contextual reading fluency.

The estimated effect size of using PowerUp was 0.69. This is considered a large effect and is more than 2.5 times larger than the average effect size for middle school reading interventions.

The difference in TOSCRF2 gain scores between students who used PowerUp and control students translates to an effect size of 0.69. Effect size describes the magnitude of the difference between treatment and control groups and allows educators to compare outcomes more easily across studies. An effect size of 0.69 is considered large for an educational intervention (Kraft, 2020). For reference, a report from the Institute of Education Sciences found that typical middle school interventions yield effect sizes of approximately 0.26 on skill-based measures like the TOSCRF2 (Lipsey et al., 2012). The obtained effect size in this study was more than 2.5 times larger than this estimated average effect.

Discussion

To achieve academic success, middle school students must be able to effectively read complex materials, and deficiencies in word identification and/or language processing skills that impede proficient reading need to be addressed (Nippold, 2017). This study shows that PowerUp – which provides multi-component instruction – effectively supports reading skills development in middle school students. Students who used PowerUp showed significantly greater gains on an assessment of word identification, syntactic processing, and basic reading comprehension skills compared to students using an alternative program that emphasized comprehension strategies in the absence of explicit and skills-based instruction. Results demonstrate the value of instruction extending beyond comprehension strategies to incorporate the full complement of skills necessary for reading proficiency.

Want to Learn More?

If you would like more information about this study, please see the full article published in the peer-reviewed journal *Computers in the Schools*. For additional information or updates on research related to PowerUp, please contact research@lexialearning.com.

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