



Closing the Reading Achievement Gap

Research Report

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Summary of Research

Background

Results of three research studies are reported in this summary. The first two studies were conducted in Revere, Massachusetts, one during the 2001–2002 school year and the second during the 2003–2004 school year. The third study was conducted in Fossil Ridge Intermediate School in St. George, Utah during the 2005–2006 school year.

In all cases, students received instruction consistent with the research-based teaching methods identified by the National Reading Panel and the “*No Child Left Behind*” Act of 2001, which included systematic instruction in phonological awareness, phonics, fluency, vocabulary and comprehension. The aim of the research was to assess the effectiveness of Lexia reading software as a supplement to classroom instruction.

For all studies, classes were randomly assigned to either a Lexia group or a control group. While sharing a common core curriculum, Lexia groups used age-appropriate reading software while the control groups did not. Unless otherwise indicated, only students with adequate use of the software were included in the Lexia groups (i.e., at least 40 sessions of 15 minutes or more over a six month period).

Academic consultants worked with Lexia Learning Systems to ensure that the studies met rigorous scientific standards, including the use of control groups, pre-testing/post-testing, and standardized norm-referenced measures. All scores are reported using normal curve equivalents (NCEs) or standard scores (SSs). Data analyses were conducted in accordance with commonly accepted statistical measures. A conventional .05 level was used to identify significant findings.

KEY FINDINGS

- **Lexia Improved Reading Scores in K–3 and Middle School**
- **Lowest Performing Students Benefited the Most From Using Lexia**
- **Title 1 Students Using Lexia Closed the Reading Gap**
- **Benefits of Lexia Tied to Strong Use Patterns**
- **Teachers Strongly Endorsed the Programs**

Kindergarten Findings

Lexia Intervention

The kindergarten study was conducted in Revere, Massachusetts in 2001–2002. Students in the Lexia group used *Lexia Early Reading*[®], which provides individualized practice on building and enhancing phonological awareness and letter-sound knowledge. Phonological awareness is a critical pre-reading skill associated with reading success.

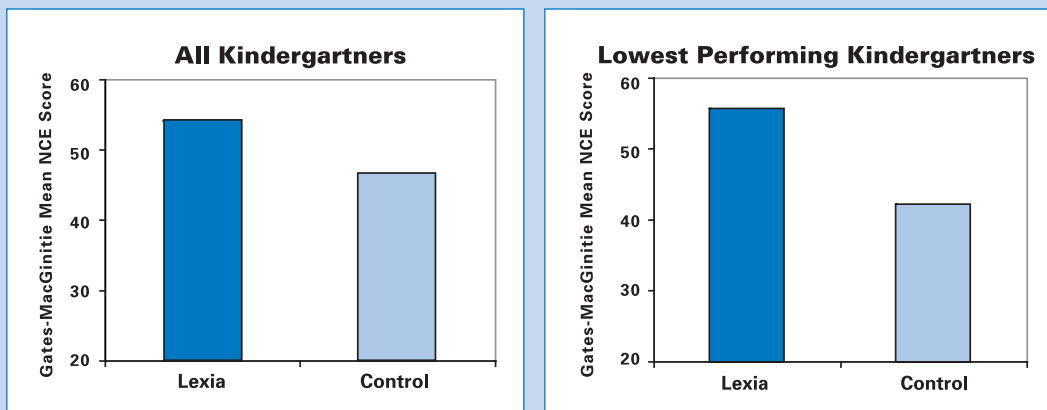
Study Details

- Kindergarten classes using *Lexia Early Reading* were compared to matched control classes taught by the same teachers.
- At pre-test, there were no significant differences between students in the Lexia group and students in the control group on *DIBELS*[®] (*Dynamic Indicator of Basic Early Literacy Skills*).
- The *Gates-MacGinitie Reading Test*[®] Level PR (Pre-Reading) was used as a post-test measure. The test measures phonological awareness, letter-sound correspondence, and listening comprehension.

RESULTS

Outcomes on the *Gates-MacGinitie Reading Test*

Students in the Lexia group significantly outperformed students in the control group. The greatest discrepancy between groups was found for students identified as the lowest performers at pre-test.



A manuscript based on this study entitled “The Efficacy of Computer Assisted Instruction for Advancing Literacy Skills in Kindergarten Children” has been accepted for publication in the 2008 edition of *Reading Psychology*.

First Grade Findings

Lexia Intervention

The first grade study was conducted in Revere, Massachusetts in 2001–2002. Students in the Lexia group used *Lexia Phonics Based Reading*[®], (now called *Lexia Primary Reading*[®]) which provides individualized instruction and practice on the systematic phonics and word recognition skills necessary for enhancing reading fluency and comprehension.

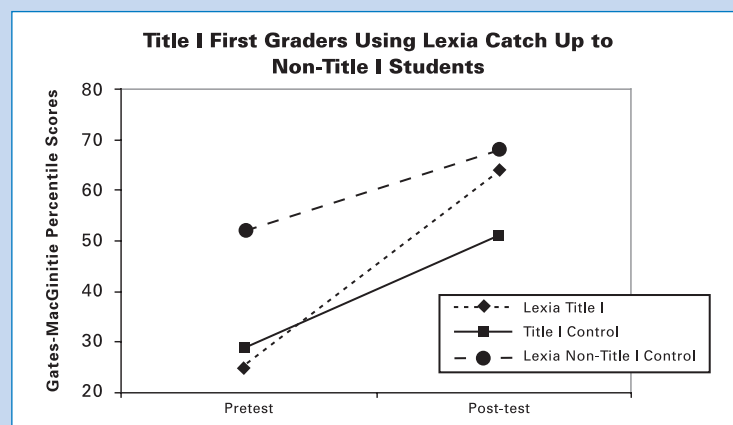
Study Details

- Title I is a federal program designed to improve the academic achievement of disadvantaged and at-risk students, including those in need of reading assistance.
- Title I first graders in the Lexia group were compared to Title I first graders in the control group and to non-Title I first graders in the Lexia group.
- Students were pre- and post-tested using the *Gates-MacGinitie Reading Test Level BR* (Beginning Reading), which measured the ability to recognize initial and final consonants, consonant clusters, vowels, and basic story words.

RESULTS

Outcomes on the *Gates-MacGinitie Reading Test*

Title I students in the Lexia group made significantly greater gains on the *Gates-MacGinitie Reading Test* than Title I students in the control group. Title I students in the Lexia group closed the performance gap when compared to non-Title I students in the Lexia group.



The first grade study entitled “The Efficacy of Computer-Based Supplementary Phonics Programs for Advancing Reading Skills in At-Risk Elementary Students” has been published in *The Journal of Research in Reading*, May 2006, Vol. 29 (2), pp. 162-172

Second Grade Findings

Lexia Intervention

The second grade study was conducted in Revere, Massachusetts in 2003–2004. Second graders in the Lexia group used *Lexia Phonics Based Reading*® (now called *Lexia Primary Reading*®) and *Lexia Reading SOS* (*Strategies for Older Students*®), both of which provide individualized instruction and practice on the systematic phonics and word recognition skills necessary for enhancing reading fluency and comprehension.

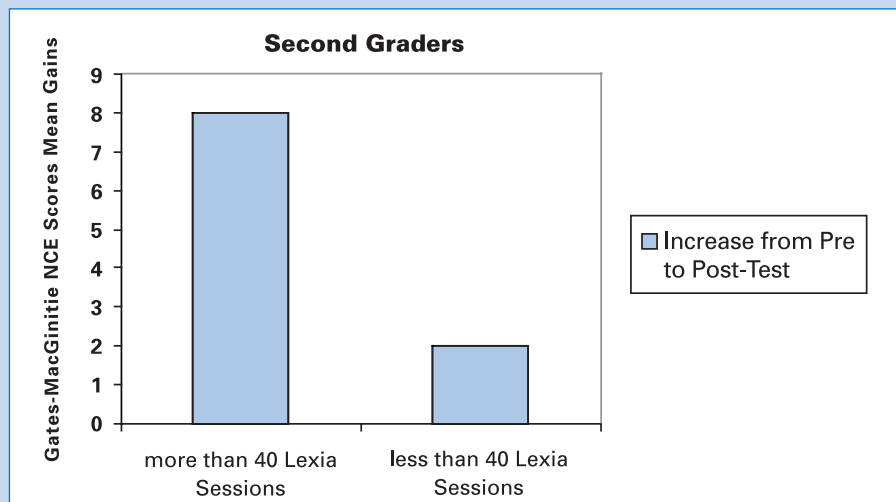
Study Details

- Second graders in the Lexia group were compared to second graders in the control group.
- Students were pre- and post-tested using the *Gates-MacGinitie Reading Test Level 2*, which measured word decoding, reading vocabulary, and reading comprehension.

RESULTS

Outcomes on the *Gates-MacGinitie Reading Test*

Students in the Lexia group who showed sufficient use (more than 40 sessions over a 6-month period) made significantly greater gains in *word decoding* than students in the Lexia group who showed low use. Sufficient users of Lexia also made significantly higher gains than the control group.



The second grade findings are reported in an article entitled “Computer Assisted Instruction: Useless without Proper Implementation” published in the Summer 2007 issue of *Perspectives*.

Third Grade Findings

Lexia Intervention

The third grade study was conducted in Revere, Massachusetts in 2001–2002. Third graders in the Lexia group used *Lexia Phonics Based Reading*® (now called *Lexia Primary Reading*®) and *Lexia Reading SOS* (*Strategies for Older Students*®), both of which provide individualized instruction and practice on the systematic phonics and word recognition skills necessary for enhancing reading fluency and comprehension.

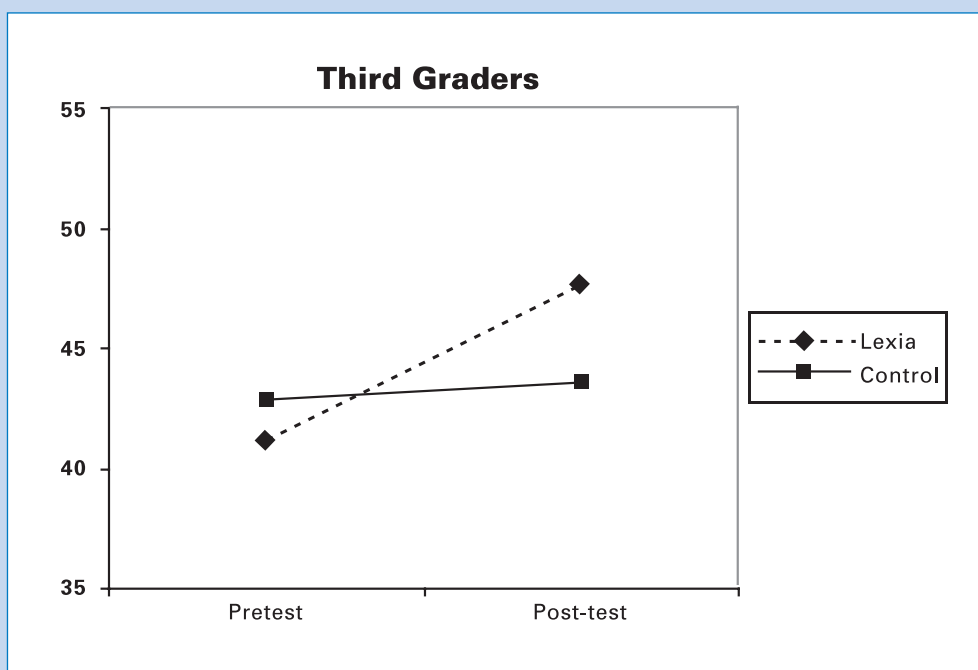
Study Details

- Third graders in the Lexia group were compared to third graders in a matched control group.
- Students were pre- and post-tested using the *Gates-MacGinitie Reading Test Level 3*, which measured reading vocabulary and reading comprehension.

RESULTS

Outcomes on the *Gates-MacGinitie Reading Test*

Students in the Lexia group made significantly greater gains in *reading comprehension* than students in the control group.



Middle School Findings

Lexia Intervention

The middle school study was conducted in St. George, Utah in 2005–2006. Students in the Lexia group used *Lexia Reading SOS (Strategies for Older Students)*, which provides individualized instruction and practice on the systematic phonics and word recognition skills necessary for enhancing reading fluency and comprehension.

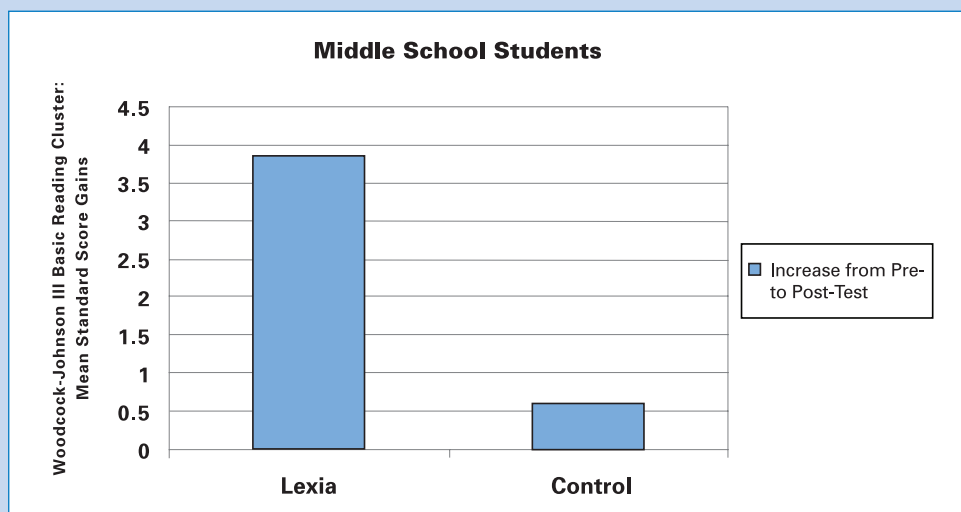
Study Details

- Middle school students in remedial reading classes were receiving intense phonics-based reading instruction. Two of the classes participated in the Lexia programs (Lexia group) and one class did not (control group).
- Students were pre- and post-tested using subtests from the *Woodcock-Johnson® III Tests of Achievement*, including measures of basic decoding skills (word attack and letter-word identification), reading fluency, reading vocabulary, reading comprehension and spelling.

RESULTS

Outcomes on the *Woodcock-Johnson III Tests of Achievement*

Students in the Lexia group made significant gains on the *Word Attack* subtest (a measure of phonic word attack and decoding skills) of the *WJIII Tests of Achievement*. Students in the control group did not make gains.



A manuscript based on these findings is in preparation.

Teacher Evaluations

“ I love it! And so do my students. The design of the program keeps their attention and focus. They are motivated to move up a level.”

Cheryl Connors, Teacher
Lincoln Elementary School, Revere, Massachusetts

“ My students are always eager to go to Lexia. They are highly motivated and engaged by the program. All children are successful because of the independent nature of the Lexia program.”

Donna M. Felzani, Teacher
McKinley Elementary School, Revere, Massachusetts

“ Lexia is a great-phonics based program. My students look forward to Lexia and are challenged each time they use the program. I am very impressed by the levels in the program. I find them age-appropriate and engaging.”

Danielle Johnson, Teacher
Lincoln Elementary School, Revere, Massachusetts

“ Lexia was like having another teacher in the room to provide individualized instruction. The quality of the program and the ease of student management made it a perfect companion to my instruction and played a big part in my students’ increase in reading skills.”

Beverlee Thomas
Fossil Ridge Intermediate School, St. George, Utah

About the Researchers:

Paul Macaruso, Ph.D. is an Assistant Professor in the Psychology Department at the Community College of Rhode Island.

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