

# Florida Center for Reading Research

## Lexia Reading

### What is Lexia Reading v5?

*Lexia Reading version 5* is a supplementary software program designed to help students, age 4 through adult, acquire and improve basic reading skills. It is intended to complement a strong core curriculum that includes the five components of reading. This program is an enhanced version of the three Lexia programs: Lexia Early Reading, Lexia Primary Reading, and Strategies for Older Students (S.O.S), which have been incorporated into one program, *Lexia Reading v5*, with an integrated management and reporting system. The individual programs are still available separately, but *Lexia Reading v5* will be reviewed in this report.

*Lexia Reading v5* is intended to support teacher instruction by providing independent practice in phonological awareness, phonics, automatic word recognition, and comprehension. A detailed chart graphically represents how the program is also designed to support the Three Tier Response to Intervention Model of instruction. It is recommended that students use the program for at least three 20-30 minute sessions per week depending on the individual skill level of the student. After an initial introduction to the logistics of signing in and navigating through the program, minimal teacher involvement is required for the students to advance in the program.

The three programs in *Lexia Reading v5* provide a range of skill development beginning with Early Reading for ages 4-6, Primary Reading for ages 5-8, and S.O.S. for ages 9-adult. Each program is divided into two to five levels with approximately 50 to a 100 practice units (activities) in each level. The teacher's guide presents a detailed scope and sequence for the progression of skills in each activity and level. In addition, there is an index of words following a consonant/vowel pattern listed by level, so that the teacher has a resource of familiar words to use in other activities with the students. The activities at each level are presented on a screen that has a solid background, and include appropriate graphics that focus the students' attention on the instructional objective rather than distract them with extraneous visual stimuli. The auditory messages are spoken with a very clear voice that distinctly enunciates the sounds of letters and words.



Lexia Early Reading consists of two levels designed to increase phonological awareness and basic sound-symbol correspondence. Level 1 activities include rhyming, recognition of initial and final sounds, segmenting, and blending sounds. Level 2 activities were developed to reinforce letter/sound correspondence of consonants, short vowels, and consonant digraphs. A typical lesson for phoneme segmentation presents the name and picture of an object then asks the student to drag down one ball for each sound in the word. Pictures are used throughout other activities in all levels to reinforce meaning.

Lexia Primary Reading has five levels focusing on automatic recognition of pre-primer through third grade high-frequency irregular words in isolation, phrases, and sentences in addition to progressively more difficult phonemic awareness and phonics activities. Level 1 presents phonemic awareness activities involving CVC words, sound/symbol correspondence of initial and final consonants and initial short vowels. Level 2 consists of phonemic awareness and phonics activities involving beginning and ending consonant digraphs and blends in one-syllable words (CCVC and CVCC) and

sound-segmenting skills for CVC words. Level 3 reinforces word attack strategies for recognizing short vowel words with blends, digraphs, and long vowel (silent-e) words. Level 4 introduces activities to decode words with vowel combinations and vowel-r combinations, as well as to review concepts presented in Level 3. Cloze activities at this level require students to read sentences and select words presented in previous activities to complete the sentence; therefore, beginning comprehension skills are required as well. Level 5 adds suffixes and new activities to reinforce the word-attack strategies presented in Levels 1-4. In addition, an activity designed to promote reading for meaning asks students to categorize words and match the words to other affiliated words.

Lexia S.O.S consists of five levels that incorporate a more mature theme for the student activities. Level 1 introduces auditory discrimination of initial short vowels using age-appropriate vocabulary (e.g., astronaut, escalator, index, obstacle, uproar), medial short-vowel discrimination in a word or word part, matching short vowel sounds to key words and pictures to emphasize meaning, sound-symbol correspondence for consonants, consonant blends and digraphs, and visual and auditory discrimination of b, d, and p in initial and final sound segments. These activities are presented first in untimed, then in timed segments based on student performance. The first half of the activities uses real words and the second half offers nonsense words. When the student makes two or more errors, the program offers another activity using the two most frequently missed letters. Level 2 activities add 1<sup>st</sup> and 2<sup>nd</sup> grade sight words, and extensive practice on short and long vowel words to reinforce the concept of silent e. Students apply these skills to reading one- and two-syllable words from 2<sup>nd</sup> grade to above 5<sup>th</sup> grade level in isolation and then in context. Level 3 introduces vowel combinations, r-controlled vowels, and suffixes. Level 4 presents word attack strategies for two and three-syllable words containing six syllable types (Open, Closed, Silent e, Vowel Combination, Vowel-r, and Consonant-le) and hard and soft c and g. In Levels 3 and 4, paragraph reading of decodable text reinforces the concepts from previous levels. Students select and type in the missing word from a list of words to complete the paragraph. Level 5 introduces structural analysis of multi-syllabic words through word parts such as prefixes, roots, and suffixes. Every unit includes sentences to apply the concepts to contextual material.

The teacher's guide includes a rationale for the program, installation instructions, detailed descriptions of all activities, and instructions for assigning students. The scope and sequence of the Early Reading and Primary Reading programs allow for a seamless transition as students gain basic reading skills. Once a student is placed at the appropriate level and activity based on the teacher's assessment of the student's needs, a recursive branching system that is built into the Lexia software automatically directs a student to the needed level of activity difficulty, depending on the student's responses. Students are given support throughout the activities with cues offered when needed and additional lessons provided when they experience difficulty. If a student commits a given number of errors, the program automatically provides support of some kind in the student's next engagement of that activity. As fewer errors are made, scaffolding is removed and the student completes the activity without it, and progresses to the next level of difficulty. This is done without overt messages to the student, so that the student continues without discouragement. The teacher can turn off the branching system to have a student or an entire class practice a specific activity repeatedly. Teacher alert icons and roll-over features have been integrated into the student interface to inform the teacher when students are struggling with a specific skill.

An electronic reporting system identifies and groups students for appropriate instruction and practice and monitors student performance at the individual, group, class, school, and district levels. *Lexia Reading v5* provides teachers with four types of reports: 1) Skills Report (profiles a student's performance on the activities successfully completed, the ones currently working on, skill areas in need of additional instruction and a detailed report at the unit level), 2) Progress Report (line graphs that illustrate the number of units a student has completed in each level), 3) Usage Report (average weekly minutes of use over a selected range of weeks or months), and 4) Combined Report (summary information from the Skills, Progress and Usage Reports).

### How is Lexia Reading v5 aligned with Current Research?

*Lexia Reading v5* supports the development of the five components of reading through student practice of previously taught reading skills. However, its practice activities for phonological awareness, phonics, and fluency figure more prominently than vocabulary and comprehension.

In phonics, the focus is on helping students to increase the accuracy and fluency of their word attack and word identification skills through focused practice and application to sentences and paragraphs. Phonics activities are organized in a logical way and progress in difficulty within each level, with easier skills introduced before more difficult skills. Once students can automatically identify and manipulate phonemes and later, affixes within words, they begin to work on meaning to build vocabulary. Fluency and comprehension are supported through activities intended to help students master word-attack strategies in order to advance automatic word recognition skills.

Scaffolding is provided as needed. At Level 3 in Primary Reading, an activity that reinforces the silent "e" delivers feedback in the form of a basketball game. The computer presents the consonants in what will be either a c-v-c or silent -e word, pronounces the desired word, and the student fills in the vowels, deciding whether or not the word requires a silent -e. If he is correct, the ball goes through the hoop and he scores points for his team on the basketball scoreboard. If he is not correct, the ball misses the hoop and a voice says "that's not quite right". After two errors, the word is presented for the student. In other activities, the correct response may be highlighted or fewer choices presented.

Professional development is an important part of the Reading First Initiative. Lexia provides on-site professional development in a two hour session that includes an overview of the Lexia system and its research base, model lessons with the actual software, and hands-on time with the program for the trainees. Reports that are created for individual students and classes are generated by the program, and teachers are taught to interpret these reports and to make data-based decisions for further instruction. Training is also provided using interactive web training tools and access to training materials via the Lexia web site. Ongoing technical support is available for Lexia users.

### Research Support for Lexia Reading v5

Some evidence indicates that the Lexia Reading Programs may have a positive effect on the development of phonological awareness and word identification skills in beginning readers and students who struggle with reading. *Lexia Reading V5* has not been evaluated as an integrated program combining all three Lexia skill programs (Early Reading, Primary Reading, and Strategies for Older Students); however, studies

have been conducted on all three programs independently. Research on Lexia Early Reading and Lexia Strategies for Older Students (S.O.S.) was conducted on the identical program content as it exists in *Lexia Reading V5*. The two studies that met the FCRR standards for research designed to examine program effectiveness (see [http://www.fcrr.org/FCRRReports/PDF/Research\\_Criteries.pdf](http://www.fcrr.org/FCRRReports/PDF/Research_Criteries.pdf)) are summarized below.

In a study of Lexia Early Reading during the 2003-2004 school year (Macaruso & Walker, 2008), six kindergarten classes in an urban public school district near Boston, MA with high numbers of low SES families participated in a treatment/control study using matched classes. The district used a kindergarten model in which the teacher taught both a daily morning and afternoon kindergarten class. For the purposes of the study, three teachers each teaching two classes (one in the morning and the other in the afternoon) had one of their classes randomly assigned to the treatment group using Lexia Early Reading to supplement their regular core instruction while their other class received the core instruction without Lexia Early Reading. Students in the treatment group used the Lexia program two to three times per week for approximately 15 minutes per session over a six month period. There were no significant differences between groups on pre-test skills of Initial Sound Fluency (ISF) or Letter Naming Fluency (LNF) as measured by the Dynamic Indicators of Basic Early Literacy Skills test (DIBELS). Similarly, at post-test, there was no significant difference between groups on the Letter Naming Fluency and Phoneme Segmentation Fluency subtests on DIBELS. However, the treatment group demonstrated significantly higher mean NCE scores than the control group on the phonological awareness subtest of the Gates-MacGinitie Reading Test, ( $p=.03$ ). No differences were found on the other Gates-MacGinitie subsets: literacy concepts, letters and letter-sound correspondences, and listening comprehension. An additional analysis revealed that the effect was particularly large for low-performing students: effect sizes were 1.56 for overall scores and 1.24 for the phonological awareness subtest. Specifically, 8 of the 12 low performers in the treatment group scored above the normed average (50) compared to only 1 of the 12 low performers in the control group. This result suggests that the Lexia program would be particularly beneficial to the students identified as "at-risk" for developing phonological awareness skills.

During the 2005-06 school year, a study examined the benefits of Lexia Strategies for Older Students (S.O.S.) for 42 middle school students in St. George, Utah (Macaruso & Rodman, 2008). Students were placed in the remedial classes on the basis of low scores on the Developmental Reading Assessment (DRA), coupled with teacher referrals. Students who met the criteria for remedial instruction were randomly placed in one of the three classes taught by the same teacher. The teacher then selected at random two classes to be treatment classes, and designated the third class as a control class. All students received 80 minutes per day of instruction with the core curriculum, Language! During this time, the treatment students also used S.O.S. for 20 to 30 minutes averaging 50 sessions over the school year. In this study, comparisons were made between treatment classes receiving Language! plus the Lexia program and control classes receiving Language! without the Lexia instruction. All students also received fluency instruction using Read Right.

An assessment battery consisting of reading, spelling, and oral language measures was administered to students in treatment and control classes at pretest and post-test. The battery contained the following subtests from the Woodcock-Johnson III Tests of Achievement: Word Attack, Letter-Word Identification, Reading Fluency, Reading Vocabulary, Passage Comprehension, Oral Comprehension, and

Spelling. There were no significant mean differences between treatment and control groups on the pretest measures. From pretest to post-test, the treatment group made significant gains on Word Attack, Letter-Word Identification and Passage Comprehension, whereas the control group made significant gains on only one subtest, Passage Comprehension ( $p < .01$  for all tests). Using an analysis of covariance that compared group means while holding pretest scores constant showed no significant group differences on the Woodcock-Johnson subtests with the exception for Word Attack which was significant at  $p = .03$  for the treatment group. After the intervention, both the treatment and control groups performed similarly except for measures of nonsense word reading.

## Conclusion

In sum, the *Lexia Reading v5* program provides practice in the five components of reading, and the design of these materials is consistent with current research suggesting that students who struggle with reading benefit from systematic and explicit practice opportunities. An initial level of research on the use of Lexia's Early Reading and S.O.S. Programs demonstrates increased performance on phonemic and phonological awareness for kindergarten students and decoding skills for middle school students. However, because *Lexia Reading v5* was published in the fall of 2007, there were no research studies meeting the FCRR research standards that evaluated the impact of the *Lexia Reading v5* version of the program on reading growth. Thus, empirical evidence of the effectiveness of *Lexia Reading v5's* specific program components is not yet available.

## Strengths & Weaknesses

### Strengths of *Lexia Reading v5*:

- Web-enabled to allow for school-to-home connection.
- Intensive, structured and systematic practice is aligned with research.
- Quick, immediate feedback follows the student's response.
- For the older students, phonological awareness is developed in conjunction with phonic word attack strategies.

### Weaknesses of *Lexia Reading v5*:

- None were noted.

## Which Florida districts have schools that implement Lexia Reading v5?

Brevard

321-631-1911

## For More Information

<http://www.lexialearning.com/mylexia/index.html>

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Important Note: FCRR Reports are prepared in response to requests from Florida school districts for review of specific reading programs. The reports are intended to be a source of information about programs that will help teachers, principals, and district personnel in their choice of materials that can be used by skilled teachers to provide effective instruction. Whether or not a program has been reviewed does **not** constitute endorsement or lack of endorsement by the FCRR.

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