SOLUTION SPOTLIGHT

PowerUp and the Science of Reading

Lexia POWERUP™ LITERACY

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ALL FOR LITERACY

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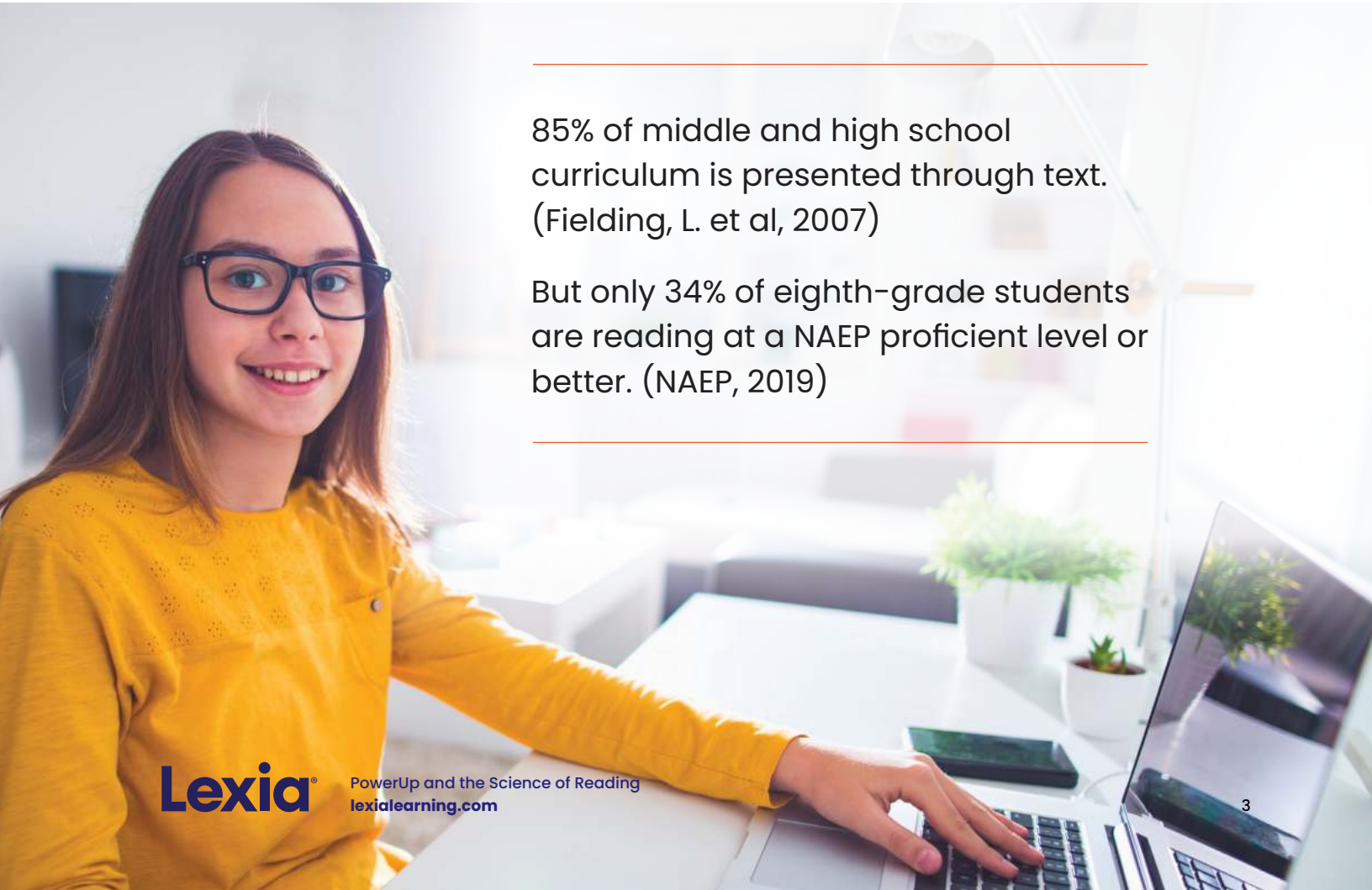
The Power of the Science of Reading

Strong literacy skills are essential to students' academic success across all areas of the middle school and high school curriculum, where 85% is presented through text (Fielding, L., Kerr, N., & Rosier, P. 2007). Yet, not all students enter middle school and high school with the fundamentals to read, write, and communicate proficiently which is a challenge to educational equity. This challenge has only been exacerbated by interrupted learning and students entering secondary grades at varying reading levels.

Assessments such as the National Assessment of Educational Progress (NAEP) have shown that only about a third of eighth-grade students read at or above a proficient level. As schools tackle widening student opportunity gaps caused by interrupted learning, and look for solutions to accelerate learning, they are motivated to implement tools that are proven to work.

Tools specifically designed for literacy education at the secondary level are especially crucial. Formal training for secondary-grade teachers may include literacy education, but not necessarily the basics of teaching foundational reading skills. As such, these teachers may not be equipped to help students who need additional reading instruction. Through no fault of their own, teachers may need support, resources, and tools to help them support students at risk of not meeting College- and Career-Ready Standards These tools and resources should be based in the science of reading.



85% of middle and high school curriculum is presented through text. (Fielding, L. et al, 2007)

But only 34% of eighth-grade students are reading at a NAEP proficient level or better. (NAEP, 2019)

The term “science of reading” refers to a large body of gold-standard research collected by cognitive scientists and other reading experts throughout more than five decades. It tells us how we learn to read and the most effective way for reading to be taught. The science of reading provides the evidence of what works best in reading instruction, clarifies instruction for students who have difficulty learning to read, and the exact skills that need to be taught.

One of the foundational elements of the science of reading is known as The Simple View of Reading which posits that both the ability to decode words and comprehend language are required to master reading comprehension (Gough & Tunmer, 1986; Hoover & Gough, 1990).

Word Recognition x Language Comprehension = Reading Comprehension

Science of reading-based instruction enables students in grades 6–12 to make literacy gains quickly and develop the reading and critical thinking skills necessary to meet the demands of middle and high school curricula. Because ultimately, instruction that is informed by the science of reading is the only proven way to ensure students can become proficient readers and confident learners across the curriculum.

Why is the Science of Reading Important to Students in Grades 6–12?

Learning to read is not a natural act; rather, it requires explicit, systematic, and cumulative instruction that is also diagnostic and responsive. Without such instruction in reading skills early on, some students may enter middle school and high school unable to read at grade level.

Although instruction informed by the science of reading is necessary for all students, it is essential for students who are at risk for reading difficulties due to dyslexia, developmental language disorders, deficits in executive function, status as an Emergent Bilingual, or other factors.

The science of reading solidifies an understanding of how language and writing systems work by informing the why and what of effective instruction, both including and going beyond phonics. Science of reading-based instruction can address the diversity of learning needs of struggling adolescent readers and give them the help they need to master any weak skills.

How Can Schools Advance Literacy Learning for Secondary Students?

Students in grades 6–12 are expected to have already made the leap from learning to read to reading to learn. With the majority of secondary curriculum presented through reading, students not reading proficiently are at risk of not reaching their full academic potential.

Lexia® PowerUp Literacy® is a personalized, adaptive blended literacy program that applies the science of reading to help secondary-grade students become proficient readers and confident learners.

The chart below details the one-to-one alignments between the key components of skilled reading, as found by the science of reading, and how those components are applied within PowerUp through a Structured Literacy approach:

	Evidence | The Why	**Application** | The What
	The Science of Reading Says	**How Lexia PowerUp Does It**
Phonology The sound system of language is known as phonology	Phonological and phonemic awareness are necessary components in learning to read and are predictive of reading success (Blachman, 1995; Liberman & Liberman, 1990; NICHD, 2000).	Students build phonological and phonemic awareness through activities focused on blending, segmenting, and sound manipulation.
Phonics Phonics is a method for teaching word reading by correlating sounds with letters or groups of letters	Proficient reading comprehension relies on automatic associations of sounds and letters. Well supported by research, instruction that matches sounds to letters or groups of letters—phonics— develops accurate decoding and spelling skills (Ehri, 2014; Hoover & Gough, 1990; NICHD, 2000; Tremain, 2018).	Students in PowerUp engage in activities that increase their awareness of the orthography of English, such as matching sounds to letters, and building knowledge of reliable spelling patterns.
Syllable Knowledge An understanding of six syllable types and rules for syllable division is a necessary component of reading	Instruction that aids students in determining where long words divide into syllables and how vowels in syllables are pronounced is beneficial to fluent reading. When reading is effortless, cognitive resources are available for the reader to focus on meaning (Perfetti, 1985).	Students are taught the six orthographic syllable types–closed, open, silent-e, vowel pairs, r-controlled, and consonant-le–that facilitate the accurate recognition of monosyllabic and multisyllabic words.

	Evidence | The Why	**Application** | The What
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Morphology The study of morphemes, or meaningful units of words, is known as morphology	Knowledge of morphemes facilitates decoding and provides a springboard for vocabulary development. Morphology bridges the gap between alphabetic reading (i.e., word-level reading) and comprehension (Adams, 1990).	Students learn meaningful word parts to support decoding and vocabulary development through activities that teach common prefixes, roots, suffixes, and Greek combining forms.
Syntax Syntax refers to the order and relationships of words in sentences as well as the structure of sentences in oral and written language	Success with complex texts is dependent on a reader's understanding of sentences with one or multiple clauses (Foorman, Herrera, et al., 2015; Foorman, Koon, et al., 2015).	Students develop an understanding of syntax through activities that teach them about parts of speech, parts of sentences, and sentence structure and how this structure impacts meaning.
Semantics Vocabulary knowledge and word relationships are referred to as semantics	As the primary goals of reading and writing are determining and communicating meaning, it is important for students to understand the meanings or shades of meanings of words (NICHD, 2000).	Students build vocabulary knowledge through Word Study activities that connect decoding and word meaning. Comprehension activities explicitly teach and review key academic vocabulary words to support a deep understanding of texts.

The Structured Literacy Approach to Instruction

The science of reading confirms that how reading is taught is just as important as what is taught. With a Structured Literacy approach, skills are sequenced to follow the logical structure of language, building from basic to increasingly complex. It integrates listening, speaking, reading, and writing while emphasizing multisensory instruction. Students' instructional needs and strengths are identified using diagnostic information, and instruction is designed accordingly.

This approach to teaching reading is beneficial for all students and essential for students who struggle to learn to decode words, such as students with dyslexia and related reading difficulties. The principles of Structured Literacy instruction are:

Systematic and cumulative:

Concepts taught are sequenced to follow the logical order of how language is structured. The instructional plan progresses from easier to more difficult concepts, building from one to the next. The systematic review of previously taught material strengthens learning.

Multisensory (multimodal):

Instruction uses multiple senses and modalities simultaneously, or in rapid succession, to support learning. Specifically, teaching integrates visual, auditory, and/or kinesthetic-motor pathways.

Explicit:

Concepts are taught directly and clearly, including demonstration, guided practice, and corrective feedback. Then, opportunities for independent practice are offered.

Diagnostic:

Students' instructional needs and strengths are identified, instruction is designed accordingly, and progress is monitored, with adjustments or supplements to instruction as needed.

The Science of Reading, Structured Literacy, and Lexia PowerUp Literacy

Despite apparent similarities in their level of academic achievement, students' overall reading proficiency, strengths, and weaknesses are often different. Although many students read below grade level, the reasons for their lack of proficiency will vary and can include inefficient word-recognition skills, insufficient syntactic knowledge, a lack of adequate reading skills and strategies, or, most likely, a combination of these reasons.

A one-size-fits-all learning approach may not benefit every reader (Haiken, 2021), and that is especially true in classrooms with diverse needs. With more than 30 years' experience delivering effective Structured Literacy programs, Lexia's literacy experts designed PowerUp Literacy to maximize student learning through a truly personalized and differentiated experience that addresses individual skill gaps and impacts reading proficiency and academic success.

PowerUp has an auto-placement component that assesses students' strengths and weaknesses to provide 180 unique placement profiles across the three strands of the program and students progress through each strand at their own pace:

PowerUp Empowers Teachers

The science of reading incorporates decades of research into how students learn and a growing body of research shows positive results for full implementation of differentiated instruction in mixed-ability classrooms (Rock, Gregg, Ellis, & Gable, 2008). But differentiated instruction can be time consuming for secondary educators who may not be trained to teach reading and don't have unlimited hours in the day.

PowerUp covers a wide range of skills, from foundational reading skills typically covered in early elementary school to more advanced comprehension and analytical skills taught in middle school and early high school, enabling educators to support the range and diverse needs of readers at all skill levels in one program.

PowerUp is designed to be used alongside the core curriculum to flexibly fit into a teacher's existing schedule, whether students use the program in an intervention block, ELA class, resource room, at home, or anywhere in between.

Lexia's patented embedded Assessment Without Testing® technology provides educators with ongoing progress-monitoring data and visibility for each student—where they are doing well and where they might need additional support—that is essential to differentiate instruction. Lexia® empowers teachers to focus on what matters most: Delivering the right instruction at the right time.

If a student is stuck on a skill, the teacher is notified and provided with scripted Lexia Lessons® that are designed for one-on-one or small-group instruction by the teacher or a paraprofessional. Once students demonstrate mastery, they can quickly move through units and onto more advanced skills, allowing them to make multiple years' worth of growth in a single year.

Recommended action plans for each student help time-strapped teachers simplify instruction planning, making them more effective and efficient, regardless of their area of expertise.

PowerUp Meets Rigorous Standards of Evidence and Equity

Lexia's PowerUp Literacy is an evidenced-based instructional literacy program built on the science of reading. Originally founded through a research grant, Lexia stands as one of the most rigorously researched and independently evaluated reading programs in the world, and our commitment to evidence-based, scientific research demonstrates the efficacy of our programs while guiding development of our products.

As schools seek to address learning gaps caused by interrupted learning, any literacy programs they implement must meet the highest levels of evidence criteria to qualify for federal funds, including Title I and Comprehensive Support and Improvement grants. Section 2001(e)(1) of the ARP Act requires a local educational agency to reserve not less than 20% of its ARP ESSER III allocation to address the academic impact of lost instructional time through the implementation of evidence-based interventions.

PowerUp is well positioned to qualify for these types of funds.

In addition to meeting ESSA's standards for Strong Evidence across multiple studies, PowerUp also meets ESSER's equity provision and has been proven to help all students learn, regardless of their race/ethnicity and Emergent Bilingual or special education status. PowerUp has also received a Strong rating from the nonprofit organization Evidence for ESSA.

Conclusion

Literacy is integral to academic and lifelong success. Ninety-five percent of students have the cognitive ability to learn to read when instruction is based on the science of reading. PowerUp gives middle and high school teachers the support, resources, and tools to deliver science of reading-based instruction in their classrooms and give their students this essential skill.

In one program, PowerUp empowers teachers with research-proven instruction, an adaptive data-driven blended learning model and embedded assessment. Educators should feel confident in PowerUp's capability to help deliver equitable and effective literacy instruction that accelerates literacy gains for students in secondary grades who are at risk of not meeting College- and Career-Ready Standards.

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Lexia is the Structured Literacy expert. For more than 30 years, the company has focused solely on literacy, and today provides a full spectrum of solutions for both students and teachers. With robust offerings for differentiated instruction, personalized learning, assessment, and professional learning, Lexia helps more learners read, write, and speak with confidence.

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