

Using Technology to Drive Innovative Teaching and Learning

The Evolution of Reading and Language Arts Resources

by Bob McCabe

Over the past 20 years, the array of reading and language arts resources and products has grown dramatically. The use of computer hardware and software in education has driven an unparalleled metamorphosis in the methods available to educators to deliver pedagogy and promote professional development and best practices. In a period of sensational growth, the mid-1990s saw thousands of new educational software titles released, most designed for home use and the education of younger children. Knowledge Adventure's JumpStart series, The Learning Company's Reader Rabbit series, and the Disney Interactive Studios programs were setting the course for commercializing children's learning software. These programs offered structured play, usually oriented toward literacy or numeracy skills, and their appeal to a new generation of computer-using households was virtually irresistible. As educational software became more widely used and the failings of many commercial programs became clear, the challenge of actually delivering educational outcomes emerged.

Today the most successful educational software programs are tied directly to the core instructional goals in the classroom. As software delivery methods have migrated from CD-ROMs to web-based delivery, software developers and educators have seen the impact of using data to support and enhance classroom lessons using technology-based activities. The transition of ed-

ucational technology from the home to the school is best exemplified by the efforts of educational publishers to meet the demand for reading skills improvement. To illustrate this point, it is essential that we first examine the basic strategies behind reading instruction.

READING WARS, RESOLVED

For nearly 2 decades the education community was embroiled in a debate widely described as the "Reading Wars," an argument that essentially pitted instructional methods that included phonics (the teaching of explicit rules for reading) against a "whole language" approach that featured an emphasis on reading aloud, the use of illustration as meaning cues, and a general fostering of creativity. Later, findings from the National Reading Panel outlined instructional best practices that essentially defined the best methods for teaching children how to read with an emphasis on phonics instruction for students at risk of reading failure. With an emerging consensus on the correct methods for reading instruction, the discussion has now actively shifted to a focus on identifying the right tools to deliver high-quality instruction.

ASSESSMENT THROUGH RTI

Today, the Response to Intervention (RTI) model has rendered moot the traditional debate between whole language and phonics. In concept, RTI asks educators

to carefully assess students' development and apply the appropriate resources to ensure each student develops the necessary skills. Coupled with best practices such as differentiating instruction, small group instruction, and, most importantly, systematic and explicit instruction, educators have an extensive array of methods to approach the task of teaching reading. Implementing the RTI model can be daunting and particularly difficult for educators who are not clinically skilled instructors. And while there are many specialists in our schools who have that level of professional training, their presence is hardly uniform in all classrooms.

School- or district-based accountability measures, as well as student progress monitoring in an RTI program, have created a ubiquitous role

now have a more sophisticated approach to the challenge of delivering literacy instruction, we do not have the luxury of time.

THE WINDOW OF OPPORTUNITY

In fact, we now know that not only is our instructional time in the classroom limited, but so too is the period in children's development when skills must be acquired. Much like a closing window, there is a finite amount of time in which children must accomplish the goal of developing foundational reading skills. It is essential to have core literacy skills in place in the early elementary years and certainly by the end of second grade. A body of research shows that reading remediation delivered in later grades is dramatically less successful; those students not reading on level in fourth grade are

supports for students to encourage them to work and reach their goals. How can teachers accomplish all of this? The answer is technology.

TECHNOLOGY AND STUDENT-CENTRIC INSTRUCTION

In their book *Disrupting Class*, authors Clayton Christensen, Michael Horn, and Curtis Johnson explore how educational technology can serve as a disruptive force—shaking up our approach to education with innovative approaches that yield better results than existing methods. They point to educational technology in most cases as a supplement, not a substitute, to the traditional teacher-student instructional dynamic. They also emphasize the importance of student-centric learning and the ability for

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for data in education. Although this may not have been a widely held belief 10 to 15 years ago, the use of student performance data informs every aspect of instruction in the RTI model, where the cycle of assessment, intervention, and reinstruction is driven by data-centric decisions. While the use of data plays a critical role in informing our instructional approach, it presents yet one more wrinkle for the classroom teacher to master in his or her instructional approach.

So how does this affect the development and use of reading and language arts materials today and in the future? While RTI and data-driven decisions are not new concepts for most educators, the challenge of applying these strategies in the classroom tests the capacities of virtually any school or district. Although we

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With that, we've taken the already daunting task of using a sophisticated set of instructional methods and assessment tools and imposed a very short-term, high-stakes deadline on accomplishing the single most fundamental educational goal, teaching a child to read. The challenge of supporting struggling students is compounded the longer they remain behind the class. Closing skill gaps for struggling students takes tremendous intensity in instruction with the right tools and methods for instruction, assessment, reinstruction, and the selection of the interventions that are successful with each individual student. Finally, amid this rigorous and intensive instruction we must also include the right motivational

technology to deliver instruction that is tailored to an individual student's needs.

Implicit in the argument made by the authors of *Disrupting Class* is the idea that technology allows us to maximize the time and resources available to address the skills that must be developed during a very small window in time. Consider the eager, well-intentioned teacher who lacks the highly specialized training necessary to implement the array of sophisticated techniques and tools available. Despite the teacher's best efforts to reach all children, he or she is fighting a losing battle against the clock, striving to deliver core instruction, assess individual needs, provide small-group instruction, and target specific interventions for every student. That is a tall task in a first-grade class with 25 students,

and the job gets harder still with students from low-income households and with English language learners.

Pam Howard, principal at El Paso Independent School District's Burlison Elementary, has embraced the concept of using educational technology to drive innovative teaching and learning in the classroom. The school uses programs from my company, Lexia Learning Systems, Inc.—Lexia Early Reading in pre-kindergarten and kindergarten classes, followed by Lexia Primary Reading in the later grades. This successful, customized intervention strategy is developing stronger readers who increasingly love to read as well as helping to improve test scores. The Burlison students scored at a barely “academically acceptable” level in 2007–2008 on the reading portion of the Texas Assessment

guage arts in terms of how schools select and implement curriculum and use technology as one of the key levers for helping teachers accomplish their goals. Technology is increasingly becoming an integral part of instruction, assessment, and the delivery of targeted interventions. Although technology-based programs will not replace basal curricula or the extraordinary role of the classroom teacher, schools across the country are abandoning the monolithic instructional methods and basal programs in favor of smaller, more diverse sets of curriculum resources.

Too often, schools and businesses alike rush to incorporate technology as the answer to their problems. However, as we've seen time and again, the incorporation of technology that is simply layered on top of existing instructional approaches has no dynamic impact. For schools,

the core instructional goals of the school, and the time and money have no impact on the performance and accountability standards all school are measured by.

For nearly 40 years the reading scores of America's elementary students have been stagnant, with approximately 40% of students failing to reading on grade level. This is a colossal failure that requires schools to continue to evaluate how the disruptive force of technology can help us accomplish our instructional goals. Educators have begun to shun the monolithic basal approach, opting for a more robust mix of specialized print and technology-based resources that provide intensive, dynamic, motivating methods that children embrace and enjoy. Furthermore, these print and technology tools must use student

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of Knowledge and Skills (TAKS). The following year they reached “Texas Education Agency Recognized,” as 95% of students passed the state reading test, also earning “gold performance” acknowledgements in Reading/ELA categories. In addition, their scores in writing, math, and science also received gold performance acknowledgments, because reading supports every subject.

TARGETED INTERVENTIONS, IMPROVED OUTCOMES

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