istation Reading Curriculum
Supplemental Reading and Intervention Program

White Paper
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Overview

Students who start off reading poorly fall farther and farther behind because they have problems acquiring word reading skills. Poor word reading leads to leads to less reading; less reading leads to lower levels of vocabulary, fluency, and comprehension. Ultimately, poor reading spirals into poor academic performance. Difficulties learning to read lead to difficulties reading to learn. This is often referred to as the "Matthew Effect" in reading (Stanovich, 1986) - good readers become better readers and poor readers stay that way. Many educators agree with Torgeson (1998) that the role of early reading instruction is preventative, that is, to "catch students before they fall" through early identification and intervention.

Teaching students to read requires early identification of students at risk for experiencing reading difficulties and providing intensive interventions to meet their needs (Crawford & Torgeson, 2006). *istation Reading Curriculum* is an effective solution. It identifies students who are at risk for problems in learning to read, and it provides appropriate instruction to ensure their reading success. This supplemental reading and intervention program integrates research-based reading content and effective reading instruction in an effective program to provide an immediate resource for teachers and students.

Effective reading content. *istation Reading Curriculum* content includes the research-based components of reading - *phonemic awareness, phonics, fluency, vocabulary, and comprehension.* Instruction in these foundational skills is systematic and explicit, based on student instructional needs.

Effective reading instruction. *istation Reading Curriculum* includes the two powerful instructional tools most likely to yield high academic returns:

Data-informed instruction - Online benchmark screeners and continuous progress monitoring along with curriculum-embedded assessments provide data to inform instruction. Individualized lessons based on these data are matched with student needs.

Academic engagement - The delivery of multimedia, game-like instructional episodes combines with frequent opportunities for student interaction and response, maximizing student opportunity to learn during reading instruction.

Effective reading program. *istation Reading Curriculum* not only matches key features of effective interventions as determined by the Florida Center for Reading Research, but it also provides scientifically-based evidence of its effectiveness with students.

Effective Reading Content

Decades of research provide guidance for what skills students need to become fluent, comprehending readers (Adams, 1990, 1998). The most recent reviews of evidence supporting research-based reading instruction, the National Academy of Sciences (Snow, Burns, & Griffin, 1998) and National Reading Panel (2000), provide clear direction to educators on the need for explicit, systematic instruction in the key skill content areas:

1. Phonemic Awareness
2. Phonics
3. Fluency
4. Vocabulary
5. Comprehension

istation Reading Curriculum includes a detailed scope and sequence that is divided into layers of instruction, or cycles. Each cycle addresses these five components of reading.

Phonemic Awareness

Phonemic awareness, or knowing that spoken words are made from individual sounds, and the ability to put together phonemes to create different words, is one of the best predictors of reading success. Most students need explicit instruction in phonemic awareness.

istation Reading Curriculum provides instruction and practice in awareness of words and syllables leading into phonemic awareness activities that teach identification, segmentation, and blending of initial, medial and final sounds as well as phoneme substitution. Instruction begins with phonemes only; it gradually introduces phonemes with graphemes. Activities also include poetry, alliteration, and identification of onset and rime.

Phonics

Skillful readers identify individual words quickly and accurately. Students who recognize words are able to focus their attention or word meaning. Students who are better able to sound-out words have higher reading achievement and are better at reading comprehension. Early systematic and explicit instruction in letter to sound relationships is most effective, especially for students experiencing reading difficulties.

istation Reading Curriculum systematically and explicitly guides students through learning the alphabetic principle - letter names and the sound to letter relationships, including short and long vowels, consonant blends and digraphs, and r-controlled and variant vowels. Further instruction in decoding and word recognition skills includes sight word instruction in high frequency words (words that are not phonetically regular but are frequently used in English text) and structural analysis (compound and multi-syllabic words). Students learn these relationships through activities that use words in isolation and then apply them in sentences, short passages and books.

Fluency

Fluency is the ability to accurately read text, quickly and with proper expression and comprehension. Fluency is necessary for comprehension. Fluent readers do not have to concentrate on decoding words, so they can focus their attention on what the text means. Therefore, automaticity in word reading is critical. Practice in reading different texts is required for students to become fluent readers.

istation Reading Curriculum provides students with many ways to develop their fluency. Rapid naming activities (letters, sounds, and words) provide cumulative skill practice to help students develop automaticity while increasing accuracy and rate. Controlled reading passages provide students with fluency practice, while also measuring student accuracy and rate. Fluent reading is modeled and practiced in sentences, passages, and books. Guided oral reading practice for fluency is one of the key features of text reading in the program.

Vocabulary

Vocabulary, or word knowledge, is critically important for text comprehension. Students who know more words can comprehend text better than students with more limited vocabulary size. Because students' vocabulary size is developed based in large part on the amount of reading they do, students with limited exposure to text can also benefit from explicit vocabulary instruction.

istation Reading Curriculum has a carefully constructed vocabulary component intertwined with every decoding and reading activity. Students are taught a range of content words (nouns, verbs, adjectives and adverbs) through the use of expertly drawn illustrations and explanatory animations, coupled with direct and indirect instruction in word meanings.

The words used within *istation Reading Curriculum's* books and skill activities are purposefully selected based on their academic utility. For K-1 level materials, words used are those found most frequently in K-2 reading materials (Hiebert, 2005; Johnson, Moe, & Baumann, 1983; Zeno, Ivens, Millard & Duvvuri, 1995). Less common vocabulary is previewed in mini-lessons prior to reading. These vocabulary previews provide pictures that show word meaning with accompanying definitions and contextualized sentences. For Grade 2 and 3 materials, more rare words are used, with concept maps, word webs, and other graphic organizers as the focus of mini-lessons to teach vocabulary prior to reading.

Comprehension

In its broadest sense, reading comprehension is understanding the meaning of text. It is the ultimate goal of reading instruction and it is what will allow students to learn subject matter from texts as they proceed through schooling. While many students acquire comprehension strategies informally, explicit instruction in applying a variety of reading comprehension strategies helps students read for meaning.

istation Reading Curriculum has carefully leveled texts, with a range of difficulties, so that students read and comprehend text at their independent and instructional levels. When they recognize words quickly, they can focus attention on meaning Explicit instruction in comprehension strategies is provided through direct instruction as well as through the use of dialogic reading with animated, fanciful characters that point out information in text, provide additional clarification, and ask students questions during reading. Explicit comprehension instruction is provided for character, setting, story structure, details, compare and contrast, problem and solution, and cause and effect. Students are able to demonstrate their comprehension

across multiple genres (narrative,expository) and with a variety of formats (sentence, passage, and story comprehension).]

Effective Reading Instruction

Data-Informed Instruction

Research on effective reading instruction provides clear guidance to educators and curriculum developers. However, suggestions from research have not been implemented widely enough to make a difference (Chall, 200; Vaughn & Linan-Thompson, 2004)

Research tells us that most teachers use traditional whole-class instruction, aiming their instruction toward the average student, hoping for the best for students at the upper and lower ends. This type of instruction does not work, because it does not make adjustments based on student differences - some students may already know what is being taught, and others may not have the prerequisite skills (Walberg, Niemiec, & Frederick, 1994).

Research also tells us that individualized and small group instruction, based on each student's specific skill needs, can reduce the Matthew Effect and improve student reading achievement by tailoring instruction to each student's current knowledge and skills. As Torgesen (2005) states, "Leaving no child behind in reading... requires careful assessments and a relentless focus on the individual needs of every child."

Data-informed instruction improves reading achievement, because teachers match instruction to student needs, monitor learning, and modify instruction based on these student needs. Before teachers can differentiate their instruction, however, they must have information about the specific skills and needs of their students. A Snow, Burns, and Griffin (1998) report in *Preventing Reading Difficulties*, early identification of young school-aged students ensures that intervention is targeted to the students most in need. When teachers keep track of student progress, are able to identify students in need of additional instruction, and design stronger instructional programs, their students achieve better (Conte & Hintze, 2000; Fuchs, Fuchs, Hamlett, & Ferguson, 1992; Mathes, Fuchs, & Roberts, 1998).

istation Reading Curriculum addresses the needs of a wide variety of learners. **Screening assessments** provide early identification of students who need extra help in order to make adequate progress during the year. Reports at the individual, class, and district levels are available within minutes of when students first enter the program. These screeners allow schools to organize resources and target instruction to students who need it the most. **Continuous progress monitoring** and curriculum-embedded assessments provide student data that are analyzed for patterns of errors. Student strengths and weaknesses are identified, and each student's instructional path is created. Students receive instruction that is electronically selected according to their daily performance. Instruction is continuously updated, based on student demonstration of newly learned skills. This "systematic and sequential presentation of skills based on student performance" was cited as one of the strengths of *istation Reading Curriculum* by the Florida Center for Reading Research (2006).

istation Reading Curriculum manages student data and provides teachers with timely access to continuously revised data through skill and progress reports on individuals and groups of students. Reports are updated in real time, as students work through their activities and assessments. Teachers receive reports listing students who need extra support and are provided with direct links to supplemental teaching materials and lessons.

istation Reading Curriculum solves what Foorman and Moats (2004) see as the persistent problem of differentiated instruction - engaging in continuous progress monitoring and translating the results of these assessments into effective reading instruction.

Academic Engagement

Students at risk of failure (e.g., minority, low income, single parent) receive less reading instruction and practice than their higher-performing peers (Allington, 1984; Hall, Delquadri, Greenwood, & Thurston, 1982; Stanley & Greenwood, 1983). Teachers spend less time teaching reading with low performing students, and this trend continues each year, increasing the gap between high and low performers. These differences in early reading instruction result in the Matthew Effect.

During reading instruction, the odds are that poor readers will not spend very much time engaged in reading. Poor readers spend approximately two-thirds of their reading instructional time engaged in non-reading and indirect reading activities (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986). Even if teachers are provided with intensive professional development on how to increase student engagement, their students till spend over 40% of their learning time NOT academically engaged (Greenwood, Horton, & Utely, 2002).

Academic engagement, as indicated by academic responding, correlates highly with achievement (Greenwood, Hart, Walker, & Risley, 1994). However, when students are instructed directly in reading, they spend about 70% of their time passively watching and listening to the teacher, with little opportunity to respond (O'Sullivan, Ysseldyke, Christense, &Thrulow, 1990; Mathes, 1992).

There are effective strategies for increasing academic engagement (Dorsey & Shulte, 1997). Most promising are the findings that independent work, individualized, one-on-one instruction (Greenwood, et al., 2002), and computer-assisted instruction (Marston et al., 1995) lead to higher levels of academic engagement.

istation Reading Curriculum provides independent, on-on-one, computer-assisted instruction that promotes student academic engagement. Animated instruction and practice activities provide numerous opportunities for student interaction measured by "click streams: and "response time." *istation Reading Curriculum's* systems analysts regularly look for student patterns of response to understand which activities need to be more engaging, or where student interest lags. This continuous monitoring and improvement ensures that students are actively engaged in reading, a necessary link to higher achievement.

istation Reading Curriculum also makes instruction engaging by taking the best form research on what makes video games appealing. As Druin, et al. (1999) reported, "Kids want a multi-sensory experience. Not only do they find it more entertaining, but they also find it a more engaging environment." *istation Reading Curriculum's* cutting edge technology uses multiple forms of media (audio, graphics, texts, and animation) to maintain student attention and promote learning in print-rich and language-enriched lessons.

Effective Reading Programs

Preventing reading failure and providing reading intervention are top priorities for education. Federal legislation has created funding streams (e.g., Reading First) for schools to improve student reading achievement. One of the requirements for schools to receive this money is that they use scientifically-based reading interventions (No Child Left Behind Act, 2001). The government introduced this requirement based not only on poor performance of approximately 40% of the nation's students on national assessments, but also on the fact that many teachers are unprepared to teach reading (Wals, Glaser & Wilcox, 2006). Teacher

preparation programs vary tremendously in the quantity and quality of the reading content that teachers receive (Levine, 2006; Moats, 1999). Beginning teachers may have as few as three or as many as 24 semester hours in teaching reading (Hoffman & Roller, 2001).

Teachers also need help differentiating quality research from promotional claims. As Walberg (1998) stated, "Educators are deluged by a huge amount of opinion and advocacy... Little is based on the findings of rigorous inquiry."

What is an effective reading intervention?

The Florida Center for Reading Research (FCRR) assist school districts and their teachers to improve instruction through basic research on reading and instruction. Reports on this research are available online at www.fcrr.org/FCRRReports/reportslist.htm.

In a recent review of reading interventions in Florida, Crawford & Torgeson (2006) report the following features of effective scientifically-based reading intervention programs:

- Differentiated materials;
- A set scope and sequence
- Different components of reading; and
- Technology-based reinforcement.

As noted by the FCRR, *istation Reading Curriculum* includes all of these features. For a review of the program and its match to this research, visit http://www.fcrr.org/FCRRReports/PDF/Imagination%20Station%20 Report.pdf.

Program Effectiveness

During the 2003-2004 school year, nine kindergarten classrooms in the Chambersburg Areas School District in Pennsylvania participated in a research project with Shippensburg University to examine program effectiveness of *istation Reading Curriculum* as a supplemental intervention. Using beginning and end-of-year pre and post tests results of the Dynamic Indicators of Basic Early Literacy Skills (DIBLES; Good & Kaminski, 2002), students in the experimental group made significant improvements (p<.05) relative to the control group in letter naming, phoneme segmentation and nonsense word fluency. During the same year, the Forth Worth Independent School District in Texas used *istation Reading Curriculum* in 14 high-poverty schools. In an experimental design that compared test scores of two matched, randomly-assigned groups of students, *istation Reading Curriculum* students showed a positive impact on basic student reading skills for students who used *istation Reading Curriculum* (Sonnenberg & Fowler Etters, 2005). Additional studies from school-reported data confirm *istation Reading Curriculum's* success in narrowing the achievement gap for low income, minority, and English language learning http://www.istation.com/en/corpsite/documents/Reading_Improvement.ppt.

Summary

istation Reading Curriculum is an effective, scientifically-based supplemental reading and intervention program with demonstrated success.

istation Reading Curriculum:

- Teaches the five key components of reading.
- Uses effective research-based tools for instruction.
- Includes all features found by FCRR to make a difference.
- Provides evidence of effectiveness.

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