

i-Ready Diagnostic& Instruction:Reading Research Base



Reading Research Base

Overview	2
Integrating Assessment with Instruction	3
Adaptive Diagnostic Assessment: i-Ready Diagnostic	
Online Instructional Modules: i-Ready Instruction	
Real-World Scenarios	
Explicit Instruction	
Immediate Feedback	
Frequent Interactivity	5
Gradual Release of Responsibility	6
Reading Skills Assessed and Taught	7
Foundational Skills	
Phonological Awareness	7
Phonics	
High-Frequency Words	
Vocabulary	
Comprehension	11
Summary	13
References	1.4

Overview

i-Ready Diagnostic and Instruction, published by Curriculum Associates, is a comprehensive web-based assessment and instruction program that includes a powerful adaptive diagnostic assessment, instantaneous reporting, and engaging online instructional modules. The assessment, the reporting, and the instruction all work together to give students the one-on-one attention they need to accelerate their learning and progress toward or beyond grade level. *i-Ready Diagnostic and Instruction* also allows teachers and administrators to quickly determine why students are struggling, to measure gains, and to monitor progress. The design basis for assessing and building students' reading foundation is supported by research as described on the following pages.

Integrating Assessment with Instruction

Adaptive Diagnostic Assessment: i-Ready Diagnostic

i-Ready Diagnostic allows for regular assessments of students' reading progress. Assessments can be administered up to three times throughout the year to measure gains and to monitor all students.

i-Ready Diagnostic is an adaptive assessment. Adaptivity provides a much more comprehensive analysis of progress in critical reading skills than an on-level benchmark assessment. *i-Ready Diagnostic* measures strengths and weaknesses in five domains of reading. It also drills down to the level of individual skills to help teachers understand the reason behind students' difficulties.

Finally, *i-Ready Diagnostic* supports educators in collecting and analyzing student data. It lays the foundation for sound instructional decision-making by

- providing data to monitor growth.
- delivering an individualized online instruction plan for every student.
- recommending next steps for classroom instruction as well as priorities for instructional grouping.

The Research

Assessment is an integral part of instruction, providing educators with the information they need to understand students' strengths and weaknesses and to adjust instruction accordingly.

- Regular assessments of students' reading progress have been proven effective in numerous scientifically based research studies (e.g., Fuchs & Fuchs, 1999; Shinn, 1998).
- "Timely, reliable assessments indicate which children are falling behind in critical reading skills so teachers can help them make better progress in learning to read" (Torgesen, 2006).
- Student achievement increases when teachers track their progress, identify those in need of additional instruction, and design stronger instructional programs (Conte & Hintze, 2000; Fuchs, Fuchs, Hamlett, & Ferguson, 1992; Mathes, Fuchs, & Roberts, 1998).
- A comprehensive assessment system integrates assessment and instruction, so that educators can continually use data to ensure they are meeting the needs of all students (National Center on Response to Intervention, 2010; Smith, 2010).
- Regular progress-monitoring is vital to track student growth and determine which students need additional help or intervention (National Joint Committee on Learning Disabilities, 2008; Fisher & Ivey, 2006; Stecker, Fuchs, & Fuchs, 2005).
- Technology is an important tool for assessment. For teachers, technology can minimize loss of instructional time by providing an efficient method of collecting and analyzing student data (Bransford, Brown, & Cocking, 2003).

Online Instructional Modules: i-Ready Instruction

As Carol Anne Tomlinson (1995) describes, teaching begins where students are, not at the front of a curriculum guide. Today's students need individual support to meet grade-level requirements.

The online instructional modules in *i-Ready Instruction* provide explicit instruction in skills, based on the results of students' assessments. The instructional modules appeal to different learning styles as well as to different learning abilities. Instruction comes to life and is presented in a fun, exciting environment.

The Research

- Learning is best achieved by adjusting the curriculum and presentation of information to learners rather than expecting learners to adjust themselves to the curriculum (Hall, 2002; Tomlinson, 1995; Tomlinson, 1999).
- "By allowing options that accommodate different thinking patterns, teachers help all students not only
 achieve planned learning goals but also own these goals in a way that's all theirs" (Carolan & Guinn, 2007).
- Progress monitoring should produce a clear profile of students' strengths, weaknesses, and needs, and be linked to targeted follow-up instruction and intervention (Carnegie Council on Advancing Adolescent Literacy, 2010; National Joint Committee on Learning Disabilities, 2008).
- Assessment data should track student growth, identify students who are not demonstrating adequate
 progress and need more intensive intervention, and determine the efficacy of instructional programs
 (National Center on Response to Intervention, 2010).
- Effective differentiated instruction engages in continuous progress monitoring and translates the results generated from these assessments into effective reading instruction (Foorman & Moats, 2004).

Real-World Scenarios

The instructional modules in *i-Ready Instruction* are centered on "out of school" interdisciplinary topics that immediately draw students in and keep them engaged. Relevant, real-world scenarios, examples, and themes help students build connections between the skills they are learning and their personal experiences both inside and outside the classroom.

Learning activities stimulate background knowledge that comes from previous lessons or from earlier experiences. Before reading a selection, students have opportunities to link new information in the selection with what they already know.

The Research

- Integrating students' interests and related skills when teaching helps them to see how what they are learning prepares them for their future (Bellon & Oates, 2002; McCombs & Vakilia, 2005; Palloff & Pratt, 1999; Shin, 2006; Vandergrift, 2002).
- Students learn better when new knowledge is connected to things they already know and understand (Hiebert & Carpenter, 1992; Hiebert, Carpenter, Fennema, Fuson, Wearne, Murray, Olivier, & Human, 1997).
- Theme-based, integrated learning experiences engage young children in meaningful and functional literacy events, focus on real-life experiences by providing socially interactive settings, and provide an organizational framework for language acquisition (Bergeron, Wermuth, Rhodes, & Rudenga, 1996).

Explicit Instruction

Explicit instruction throughout *i-Ready Instruction* is systematic, clear, and precise. Topics are carefully sequenced and broken down into small, constituent parts and taught individually. This involves explanation, demonstration, and practice in a structured environment.

i-Ready Instruction provides tutorials and practice activities that model instruction and guide practice to develop conceptual understanding of skills. As noted in the research below, explicit instruction has been found effective for all the areas of reading that *i-Ready Diagnostic and Instruction* assesses and instructs.

- "Direct instruction is appropriate instruction for all learners, all five components of reading, and in all settings (whole group, small group, and one-on-one)" (Florida Center for Reading Research, 2006).
- Explicit instruction is crucial for students with disabilities and those at risk to retain new skills (Swanson, 2001).

- Explicit instruction proves to be an effective, research-based instructional strategy that improves students' understanding of reading strategies and vocabulary acquisition (Kamil, Borman, Dole, Kral, Salinger, & Torgesen, 2008).
- Research finds that, like other students, those who are considered disadvantaged and have diverse needs benefit most from early and explicit teaching of word recognition skills, including phonics (Adams & Engelmann, 1996).
- Teachers should provide explicit phonemic awareness instruction including clear explanations, modeling of tasks, and opportunities for student practice (Foorman & Torgesen, 2001; Cunningham, 1990).
- Systematic and explicit phonics instruction contributes more to reading growth than instruction with a non-systematic program or no phonics instruction at all (Adams & Engelmann, 1996; Hall, 2002).
- Students need explicit instruction and systematic practice to learn irregular words (Vellutino & Scanlon, 2002).
- "By giving students explicit instruction in vocabulary, teachers help them learn the meaning of new words and strengthen their independent skills of constructing the meaning of text" (Kamil et al., 2008).
- Students, including those with learning disabilities and English language learners, benefit from explicit comprehension strategy instruction (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006; Nokes & Dole, 2004; Duke & Pearson, 2002).
- Strategies to understand and interpret narrative and expository text structures need to be explicitly taught (Duke, 2010; Readence, Bean, & Baldwin, 2004; Duke & Pearson, 2002).

Immediate Feedback

As a part of the scaffolded instruction in *i-Ready Instruction*, students receive immediate corrective feedback that is specific and purposeful. They are told why their answers are correct or incorrect without fear of judgment or penalty. In addition, a quiz at the end of each lesson quickly assesses student learning and provides immediate, informative, and encouraging feedback.

The Research

- When students receive direct instruction about the reasons why an answer is correct or incorrect, they
 demonstrate long-term retention and understanding of newly learned content (Rohrer & Pashler, 2007).
- "As an alternative or adjunct to traditional reading instruction, computer-assisted instruction can offer students the opportunity to receive customized support, learn at a comfortable pace, and encourage the active processing of text" (Kamil, 2003).
- Modeling and corrective feedback are essential for struggling readers, particularly those with learning disabilities, to learn to read and respond to text (Swanson, Wexler, & Vaughn, 2009; Vaughn & Roberts, 2007).

Frequent Interactivity

Students today have a lower threshold for boredom. They are often multi-tasking in their lives away from school. In the classroom, instruction must keep them actively involved in their learning experience, which will also lead to deeper understanding. The instructional modules in *i-Ready Instruction* promote active student participation in learning. Students interact with the program every 30 seconds or less by clicking on answers, using online tools, typing in text or numbers, and manipulating models.

The Research

- "The more ways in which the learner is involved in task related activity, the stronger the learning" (Biggs, 1991).
- Independent work; individualized, one-on-one instruction; and computer-assisted instruction have been found to be the most effective strategies that lead to increased levels of academic engagement (Greenwood et al., 2002; Marston et al., 1995).
- "Kids want a multi-sensory experience. Not only do they find it more entertaining, but they also find it a more engaging environment" (Druin et al., 1999).
- Students are engaged by computer-assisted instruction and the ability to control activities on screen. Studies have found that students frequently ask to use computer-assisted programs and remain on task for longer periods of time (Distel, 2001; Hitchcock & Noonan, 2000).

Gradual Release of Responsibility

Lev Vygotsky's zone of proximal development—the range of reading skills that children cannot do alone but can with some assistance—can be addressed with the gradual release of responsibility model. First, teachers model the reading skill. Then they slowly release responsibility with guided practice that starts with a great amount of teacher support, which is gradually reduced. Finally, when it is believed students have mastered the skill, they move to independent practice.

Each instructional module in *i-Ready Instruction* is structured with a tutorial that provides modeled and guided instruction, a practice activity that supports and reinforces student learning, and a quiz for independent practice and assessment.

- There is widespread agreement that scaffolding plays an essential and vital role in fostering comprehension (Clark & Graves, 2005).
- All struggling readers, including English language learners and students with special needs, benefit from highly scaffolded instruction and gradual release of responsibility in comprehending challenging texts (Fisher & Frey, 2008; Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006; Duke & Pearson, 2002).
- "Scaffolded instruction optimizes student learning by providing a supportive environment while facilitating student independence" (Larkin, 2002).

Reading Skills Assessed and Taught

Foundational Skills

The Common Core State Standards grouped the very basic and essential building blocks of literacy together as foundational skills—print concepts, phonological awareness, phonics and word recognition, and fluency. In addition, state standards typically emphasize phonemic awareness, phonics, and fluency, which were also identified as three of the five essentials components of reading by the National Reading Panel (2000).

i-Ready Diagnostic and Instruction assesses and teaches the foundational skills of phonological awareness, phonics, and high-frequency words.

Phonological Awareness

Phonological awareness is the understanding that oral language can be divided into smaller parts. This can include segmenting, or breaking up, sentences into words, along with segmenting words into syllables (sadness into /sad//ness/), into onset and rime (bat into /b//at/), or into individual phonemes (skip into /s//k//i//p/). Phonological awareness also includes the understanding that these sounds can be manipulated (substitute the /m/ sound in mat with the /c/ sound to make cat).

Phonological awareness is a critical prerequisite for learning phonics. The ability to distinguish discrete sounds is a critical first step in understanding how each sound maps onto a particular spelling pattern.

The Research

- Students who develop phonological awareness are better prepared to develop other reading skills, including phonics and spelling (Adams, Foorman, Lundberg, & Beeler, 1998; Chard, Simmons, & Kame'enui, 1998; Adams, 2001; Goswami, 2000, 2001).
- Students with strong phonological awareness are likely to become good readers, whereas students with weak phonological skills are likely to become poor readers (Blachman, 2000; Liberman, Shankweiler, & Liberman, 1989).
- Phonemic awareness is a reliable predictor of later reading achievement (Bishop, 2003; Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan, 2001).
- "The most common cause of children's early difficulties in acquiring accurate and fluent word recognition skills involves individual differences in their phonological knowledge and skills" (Torgesen, 2002).
- Training in phonological awareness supports early reading development for all students—both those with disabilities and those without (Fletcher, Shaywitz, Shankweiler, Katz, Liberman, Stuebing, Francis, Fowler, & Shaywitz, 1994).
- Segmenting and blending are the phonological awareness skills that are most effective in supporting phonics instruction (Chard & Dickson, 1999).

How is Phonological Awareness assessed in i-Ready Diagnostic?

In *i-Ready Diagnostic*, test items use both audio and visual support to assess children's ability to distinguish and manipulate the sounds in spoken language. The stems, which comprise questions or directions, are read aloud to children, as are the individual answer choices. Children can use an audio icon to hear stems and answer choices repeated. Many items are supported by art.

Most items focus on segmenting and blending because these skills are the most important building blocks for phonics instruction. Children are asked to segment and blend syllables, onset and rime, and individual phonemes. Other items assess children's ability to manipulate phonemes by deleting, adding, or substituting sounds in spoken words.

How is Phonological Awareness taught in i-Ready Instruction?

i-Ready Instruction provides explicit instruction in phonological awareness. Students learn to distinguish and manipulate the individual sounds in spoken words. The instructional modules focus on skills that include

- rhyming
- segmentation
- blending
- deletion
- addition
- substitution

The instructional modules combine audio, art, animation, and interactivity to support the development of the critical skills that students need in order to benefit from phonological awareness instruction. In addition to practice opportunities, interactive guizzes assess progress on each skill.

Phonics

Phonics is the understanding of how sounds relate to letters, or groups of letters. Phonics skills include both decoding (reading written words) and encoding (spelling spoken words). As children develop as readers, they become more accurate in recognizing the relationship between sounds and spelling patterns. They also become more fluent, which means that they can read and spell words more automatically.

The Research

- For early readers at risk of developing reading problems, phonics instruction has been shown to help prevent reading difficulties (National Reading Panel, 2000).
- "Systematic phonics instruction helps students learn to read more effectively than nonsystematic phonics or no phonics instruction" (National Reading Panel, 2000).
- According to research, if students do not master phonics by the end of first grade, they will continue to struggle in other areas of reading (Torgesen, Rashotte, & Alexander, 2001).
- When students can read words accurately and automatically they are able to focus on text comprehension because less mental energy is required to decode words and more mental energy can be devoted to making meaning from text (Adams, 1990; Snow, Burns, & Griffin, 1998; Freedman & Calfee, 1984; LaBerge & Samuels, 1974).

How is Phonics assessed in *i-Ready Diagnostic*?

i-Ready Diagnostic assesses children's ability to recognize sound-spelling correspondences. Test items use both audio and visual support. Some stems, which comprise questions or directions, are read aloud, and children are asked to choose among written answer choices. Other stems are written, and children are asked to choose among answer choices that are read aloud. As with phonological awareness, children can use an audio icon to hear stems and answer choices repeated. Many items are supported by art.

Items focus on a range of high-utility skills, including

- letter recognition
- one-to-one letter-sound correspondences
- CVC and CCVC words, as well as other one-syllable words
- consonant digraphs
- final e conventions
- r-controlled vowels

- inflectional endings
- vowel teams (digraphs and dipthongs)
- two-syllable words
- three, four, and five syllable words
- words with prefixes and suffixes

How is Phonics taught in i-Ready Instruction?

The instructional modules in *i-Ready Instruction* provide an interactive, rich-media environment for the systematic and explicit phonics instruction that reading research recommends.

The sequence of instruction begins with consonant and short vowel sounds. As children learn to build words, instruction follows in skills such as initial consonant blends, final *e* conventions, consonant digraphs, vowel digraphs, *r*-controlled vowels, and diphthongs. The instructional modules also teach word-study and word-analysis skills, such as using syllabification, recognizing prefixes and suffixes, and identifying compound words. In addition to practice opportunities, interactive guizzes assess progress on each skill.

What sets *i-Ready Instruction* apart from many other instructional programs is that the emphasis is on teaching students to use various phonics skills strategically in the context of sentences, stories, letters, and expository paragraphs. Students are taught how to use both graphophonic (letter and sound) cues as well as semantic and syntactic (meaning and language-based) cues to figure out unknown words. They are taught to figure out difficult words by rereading sentences and using what they know about letters and sounds as well as by considering the context of the sentence. Students are also taught how to self-monitor their reading on a metacognitive level. The goal of these instructional modules is to help students find strategies that are useful *to them* with the goal of making them independent readers.

High-Frequency Words

While there are hundreds of thousands of words in the English language, approximately 100 of them account for perhaps 50 percent of the words read and used. Called high-frequency words, many of these words have irregular spellings—that is, they don't follow regular sound-spelling conventions. These words must be explicitly taught and memorized. Because they appear so often in text, readers need to learn to recognize high-frequency words automatically. Being able to read these words quickly and easily is critical to fluency and comprehension.

Words assessed and taught in *i-Ready Diagnostic and Instruction* are drawn from the Dolch Basic Word List (Dolch, 1941) and the Fry Instant Word List (Fry, 1999).

The Research

- When students learn high-frequency words thoroughly and reliably, they demonstrate smoother, less effortful reading and perhaps a greater inclination to read independently (which may also increase the number of words they instantly recognize) (O'Connor, 2007).
- Developing readers who cannot instantly identify high-frequency words are unlikely to become fluent due to the common occurrence of these words (Pikulski, 2006).
- "When children at an early age learn to recognize and automatically spell the most frequently occurring words, all their attention is freed for decoding and spelling less frequent words and more importantly, for processing meaning" (Cunningham, 2000).

How are High-Frequency Words assessed in i-Ready Diagnostic?

Test items in *i-Ready Diagnostic* assess children's ability to recognize high-frequency words. Some stems, which comprise questions or directions, are read aloud, and children are asked to choose among written answer choices. Other stems are written, and children are asked to choose among answer choices that are read aloud. Children can use an audio icon to hear stems and answer choices repeated.

How are High-Frequency Words taught in *i-Ready Instruction*?

In *i-Ready Instruction*, words are taught and practiced both in isolation and in context. Animation and audio throughout the instructional modules engage and motivate students. For example:

- An engaging animated character often establishes a context for a group of words.
- Words are presented on the screen and read aloud.
- A sentence and a visual are often displayed to provide context for the word.
- Students then identify the word in the context sentence or in isolation.

Repetition helps build automatic recognition of high-frequency words. Interactive guizzes assess progress.

Vocabulary

Vocabulary is the set of words we use to speak, listen, write, and read. Since at least 1925, vocabulary has been empirically linked to reading comprehension (Whipple, 1925) and the National Reading Panel confirmed this in its review of scientific research. Knowing what words mean is a critical part of understanding what we read. Reading development requires continued growth in the size of students' reading vocabularies. Both the Common Core State Standards and the National Reading Panel report emphasize the importance of students acquiring rich and varied vocabulary knowledge.

- Word knowledge affects reading comprehension, which in turn helps students expand their knowledge bases, which in turn facilitates vocabulary growth and reading comprehension (Cunningham & Stanovich, 1998; Johnson & Rasmussen, 1998).
- In content-area instruction, new vocabulary constitutes both information students must learn and concepts they need to understand to function within the subject (Armbruster & Nagy, 1992; Rekrut, 1996).
- "People with more extensive vocabularies not only know more words but also know more about the words they know" (Curtis & Glaser, 1983).
- A learner's knowledge of words and what they mean is an important part of the reading process, as knowledge of word meanings affects the extent to which the learner comprehends what he or she reads (National Reading Panel, 2000).
- Oral and written vocabulary instruction is a valuable component of beginning reading, because student understanding of word meanings and how words are used in text contributes significantly to general reading comprehension (Vaughn & Linan-Thompson, 2004).
- Children who enter Kindergarten with low vocabularies tend to encounter reading difficulties (Scarborough, 2001).
- Oral language development is a critical part of addressing vocabulary deficits (Anderson et al., 1985; Barnett, 2001).
- Children who have low vocabularies tend to read less and thus develop less vocabulary and fall further behind their peers (Cunningham & Stanovich, 1998).
- Vocabulary instruction that makes students think about the meaning of a word and demands that they engage with the meaning of the word is more effective than instruction that does not (Beck et al., 2002).
- Teaching prefixes, suffixes, and root words can help students understand a wider range of word meanings (White et al., 1989; Biemiller & Slonim, 2001).

How is Vocabulary assessed in i-Ready Diagnostic?

Test items in *i-Ready Diagnostic* assess students' knowledge of both Tier 2 words (academic or literary words) and Tier 3 words (domain-specific or content-area words).

The words assessed were selected by teachers and reading specialists using research-based lists that included:

- Words Worth Teaching (Biemiller, 2010)
- The Living Word Vocabulary (Dale & O'Rourke, 1981)
- The Educator's Word Frequency Guide (Zeno, 1995)
- The Academic Word List (Coxhead, 2000)

The words were selected to reflect the types of words children learn in various disciplines at different grade levels and in various stages of their lives. Test items assess knowledge of these words in context. Test items aimed at early readers include visual support. Because oral vocabulary is a critical part of reading development, test items at Kindergarten through Grade 2 are supported by audio.

How is Vocabulary taught in i-Ready Instruction?

A key goal of *i-Ready Instruction* is to expand vocabulary in order to help readers communicate and comprehend effectively. The instructional modules use categories and rich context to teach the words students need to know. Students are encouraged to make connections between words and to connect words with real-world experiences. Words are explained, and students complete interactive exercises that lead them to engage with the meaning of the words. Corrective feedback redirects students and reinforces understanding of the correct meaning of each word. Instruction also focuses on key vocabulary skills such as prefixes and suffixes, synonyms and antonyms, homophones, and multiple-meaning words. Opportunities are provided for practice, and interactive quizzes assess progress on each skill.

Comprehension

Comprehension is the reason why we read; it is the meaning behind words. It is often referred to as "the essence of reading" (Durkin, 1978). The National Reading Panel described it as "the construction of the meaning of a written text through a reciprocal interchange of ideas between the reader and the message in a particular text" (2000). The RAND Reading Study Group defined "reading comprehension as the process of simultaneously extracting and constructing meaning" (2002). It is the last piece of the reading puzzle that *i-Ready Diagnostic and Instruction* assesses and teaches with literature and informational texts of increasing complexity deemed necessary by the Common Core State Standards.

Informational Text: Students' academic success is closely tied to their ability to comprehend informational text. Informational text is the primary source of students' new knowledge and information after the primary grades. It also makes up the majority of reading done outside of school.

Literature: The Common Core State Standards note that as students read literature—stories, dramas, poems, and myths from diverse cultures and different time periods—they gain literary and cultural knowledge as well as familiarity with various text structures and literary elements, which include setting, characters, plot, and theme.

- "Comprehension should be assessed frequently as a way to track students' growth and provide useful information that can guide instructional and diagnostic decision-making" (Klinger, Vaughn, & Boardman, 2007).
- Reliable assessment should guide aligned comprehension instruction (Lehr & Osborn, 2005).
- Comprehension instruction should start as soon as students start interacting with text and continue through high school (Duke & Pearson, 2002; Pressley & Block, 2002).

- Students must extend the range and flexibility of their reading comprehension strategies in order to maintain or improve their level of reading proficiency (Duke & Pearson, 2002).
- "Achieving success in subject areas ranging from social studies to science requires that students be able to comprehend the texts of such subjects" (Neufeld, 2003).
- "Strong evidence links readers' awareness of text structure to successful reading comprehension" (Coyne, Chard, Zipoli, & Ruby, 2007).
- Student awareness and understanding of the similarities or structure across texts gives them a frame of reference for processing and remembering the information and allows them to consider authors' messages in a broader context of literature and the world (Carnine & Kinder, 1985; Dickson, Simmons, & Kame'enui, 1998).
- "Instruction of the content and organization of stories improves story comprehension, measured by the ability of the reader to answer questions and recall what was read" (National Reading Panel, 2000).

How is Comprehension assessed in i-Ready Diagnostic?

Students' abilities to understand both literary text and informational text are evaluated in *i-Ready Diagnostic*. The focus in Kindergarten is on listening comprehension. At this grade, comprehension items are supported by both audio and art. Reading comprehension is the focus at Grade 1 and above. Students are presented with a passage, and interactive, multiple-choice items are shown next to the passage. When a passage has more than one page, students are able to page back and forth through the passage while still able to view the item, which encourages students to find textual support for the answer they select.

How is Comprehension taught in i-Ready Instruction?

The major focus of the comprehension instructional modules in *i-Ready Diagnostic* is on developing various comprehension skills, such as comparing and contrasting, distinguishing fact from opinion, and prediction, to name just a few. Graphic organizers, concept maps, and flow charts are used to aid in the explicit instruction of main ideas and details, story elements, sequencing, and determining cause and effect. Comprehension activities emphasize the ability of the reader to actively construct meaning when reading both narrative and expository text. All of these comprehension skills are presented using a mix of literary and informational passages.

The instructional modules both model and support the use of dialogue to make meaning from text and to apply comprehension skills more effectively. Animated, interactive lessons assist students in navigating the complexities of the comprehension process and develop their understanding of text by introducing several viewpoints. The lessons model a small group discussion format with a main teacher character and three students to simulate how a real student might participate and react in such sessions. Students are then encouraged to discuss concepts and ideas from the lesson in the classroom. Opportunities are provided for practice, and interactive quizzes assess progress on each skill.

Summary

i-Ready Diagnostic and Instruction is a research-based program. The adaptive diagnostic assessment evaluates areas critical to reading success—phonological awareness, phonics, high-frequency words, vocabulary, and comprehension. Assessment results not only provide data to help administrators make decisions and teachers plan instruction, but they also formulate an individualized instruction plan for every student.

The tutorials, lessons, activities, and quizzes in *i-Ready Diagnostic and Instruction* provide a gradual release of responsibility with explicit instruction during modeling and guided instruction and immediate feedback on practice and quizzes. To make instruction more effective and engaging, it is always in the context of real-world scenarios with frequent interactivity.

The research suggests that these elements make *i-Ready Diagnostic and Instruction* a powerful web-based program as it finds students' challenges and fixes them to get students on grade level.

References

- Adams, G. L., & Engelmann, S. (1996). *Research on Direct Instruction: 25 years beyond DISTAR*. Seattle, WA: Educational Achievement Systems.
- Adams, M., Foorman, B., Lundberg, I., & Beeler, T. (1998). *Phonemic awareness in young children*. Baltimore: Brookes.
- Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- ———, (2001). Alphabetic anxiety and explicit, systematic phonics instruction: A cognitive science perspective. In S. B. Nueman & D. K. Dickinson (Eds.), *Handbook of early literacy research*. New York: Guilford Press.
- Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkerson, I. A. (1985). *Becoming a nation of readers*. Washington, DC: National Institute of Education.
- Armbruster, B., & Nagy, W. E. (1992). Vocabulary in content area lessons. *The Reading Teacher*, 45, pp. 550–551.
- Barnett, W. S. (2001). Preschool education for economically disadvantaged children: Effects on reading achievement and related outcomes. In S. Neuman & D. Dickenson (Eds.), *Handbook of early literacy research*, pp. 421–443. New York: Guilford Press.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford.
- Bellon, T., & Oates, R. (2002). Best practices in cyberspace: Motivating the online learner. Paper presented at the NECC. Retrieved from http://confreg.uoregon.edu/necc2002/.
- Bergeron, S., Wermuth, S., Rhodes, M., & Rudenga, E. A. Language development and thematic instruction: Supporting young learners at risk. *Childhood Education*, Association for Childhood Education International, March 22, 1996.
- Biemiller, A. (2010) *Words worth teaching*. McGraw-Hill SRA.
- Biemiller, A., & Slonim, N. (2001). Estimating root word vocabulary growth in normative and advantaged populations: Evidence for a common sequence of vocabulary acquisition. *Journal of Educational Psychology*, 93, pp. 498–520.

- Biggs, J. (Ed.). (1991). *Teaching for Learning*. Victoria, Australia: ACER.
- Bishop, A. G. (2003). Prediction of first-grade reading achievement: A comparison of fall and winter kindergarten screenings. *Learning Disability Quarterly*, 26(3), pp. 189–200.
- Blachman, B. A. (2000). Phonological awareness. In M. L. Kamil, P. B. Rosenthal, P. D. Pearson, & R. Barr (Eds.), Handbook of Reading Research, Vol. 3 (pp. 483–502). Mahwah, NJ: Erlbaum.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2003). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.
- Carnegie Council on Advancing Adolescent Literacy. (2010). Time to act: An agenda for advancing adolescent literacy for college and career success. New York: Carnegie Corporation of New York.
- Carnine, D. W. & Kinder, D. (1985). Teaching low performing students to apply generative and schema strategies to narrative and expository materials. *Remedial and Special Education*, 6(1), pp. 20–30.
- Carolan, J., & Guinn, A. (2007). Differentiation: Lessons from master teachers. *Educational Leadership*, 64(5), pp. 44–47. Retrieved from http://s163884253.onlinehome.us/__oneclick_ uploads/2008/12/differention.pdf
- Chard, D. J., & Dickson, S. V. (1999), Phonological Awareness: Instructional and Assessment Guidelines, *Intervention in School and Clinic*, 34(5), pp. 261–270, May
- Chard, D. J., Simmons, D. C., & Kame'enui, E. J. (1998). Word recognition: Research bases. In D. C. Simmons & E. J. Kame'enui (Eds.), What reading research tells us about children with diverse learning needs. Bases and basics (pp. 141–168). Mahwah, NJ: Erlbaum
- Clark K. F., & Graves, M. F. (2005). Scaffolding Students' Comprehension of Text, *Reading Teacher*, 58(6), pp. 570–580, March

- Conte, K. L., & Hintze, J. M. (2000). The effects of performance feedback and goal setting on oral reading fluency within curriculum-based measurement. *Diagnostique*, 25(2), pp. 85–98.
- Coxhead, A. (2000). The academic word list. Wellington, New Zealand: Victoria University.
- Coyne, M. D., Chard, D. J., Zipoli, R. P., & Ruby, M. F. (2007). Effective strategies for teaching reading comprehension. In M. D. Coyne, E. J. Kame'enui, and D. W. Carnine (Eds.), Effective teaching strategies that accommodate diverse learners (3rd ed.). Upper Saddle River, NJ: Pearson Education.
- Cunningham, A. E. (1990.) Explicit versus implicit instruction in phonemic awareness. *Journal of Experimental Child Psychology*, 50, pp. 429–444.
- Cunningham, A. E., & Stanovich, K. E. (1998). What reading does for the mind. *American Educator*, 22, pp. 8–15.
- Cunningham, P. M. (2000). *Phonics they use* (3rd ed.). New York: Addison-Wesley.
- Curtis, M. E., & Glaser, R. (1983). Reading theory and the assessment of reading achievement. *Journal of Educational Measurement*, 20, pp. 133–147.
- Dale, E., & O'Rourke, J. (1981). The Living Word Vocabulary Chicago: World Book–Childcraft International.
- Dickson, S. V., Simmons, D. C., & Kame'enui, E. J. (1998). Text organization: Research bases. In D. C. Simmons & E. J. Kame'enui (Eds.), What reading research tells us about children with diverse learning needs: Bases and basics. Mahwah, NJ: Erlbaum.
- Distel, R. F. (2001). Evaluation Series LS Class. South Bloomington, MN PLATO Learning, Inc. Retrieved from http://www.netschools.net/
- Dolch, E. W. (1941). *Teaching primary reading*. Champaign: The Garrard Press.
- Druin, A., Beerson, B., Boltman, A., Miura, A., Knotts-Callahan, D., & Platt, M. (1999). Children as our technology design partners. In A. Druin (Ed.), *The design of children's technology*, (pp. 51–72). San Francisco: Morgan Kaufmann Publishers.
- Duke, N. K. (2010). The real-world reading and writing U.S. children need. *Phi Delta Kappan*, 91(5), pp. 68–71.

- Duke, N. K., & Pearson, P. D. (2002). Effective practices for developing reading comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 205–242). Newark, DE: International Reading Association.
- Durkin, D. (1978). What classroom observations reveal about comprehension instruction. *Reading Research Quarterly*, 14, pp. 481–533.
- Ehri, L. C., Nunes, S. R., Willows, D. M., Schuster, B. V., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic awareness instruction helps children learn to read: Evidence from the National Reading Panel's meta-analysis. *Reading Research Quarterly*, 36(3), pp. 250–287.
- Fisher, D., & Ivey, G. (2006). Evaluating the interventions for struggling adolescent readers. *Journal of Adolescent & Adult Literacy*, 50(3), pp. 180–189.
- Fisher, D., & Frey, N. (2008). Better learning through structured teaching: A framework for the gradual release of responsibility. Alexandria, VA: Association for Supervision and Curriculum Development.
- Fletcher, J. M., Shaywitz, S. E., Shankweiler, D. P., Katz, L., Liberman, I. Y., Stuebing, K. K., Francis, K. J., Fowler, A. E., & Shaywitz, B. A. (1994). Cognitive profiles of reading disability: Comparisons of discrepancy and low achievement definitions. *Journal of Educational Psychology*, 86, pp. 6–23.
- Florida Center for Reading Research (FCRR). (2006). Frequently asked questions about reading instruction. Retrieved from http://www.fcrr.org/ Curriculum/curriculumInstructionFaq1.shtm#2.
- Foorman, B. R., & Moats, L. (2004). Conditions for sustaining research-based practices in early reading instruction. *Remedial and Special Education*, 25(1), pp. 51–60.
- Foorman, B. R., & Torgesen, J. K. (2001). Critical elements of classroom and small-group instruction promote reading success in all Children. *Learning Disabilities Research & Practices*, 16, pp. 203–212.
- Francis, D., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006). Practical guidelines for the education of English language learners: Research-based recommendations for instruction and academic interventions. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Freedman, S. W., & Calfee, R. C. (1984). Understanding and comprehending. *Written Communication I.*

- Fry, E. B. (1999). 1000 instant words: *The most common words for teaching reading, writing, and spelling*. Westminster, CA: Teacher Created Materials.
- Fuchs, L. S., & Fuchs, D. (1999). Monitoring student progress toward the development of reading competence: A review of three forms of classroombased assessments. *School Psychology Review*, 28, pp. 659–671.
- Fuchs, L. S., Fuchs, D., Hamlett, C. L., & Ferguson, C. (1992). Effects of expert system consultation within curriculum-based measurement, using a reading maze task. *Exceptional Children*, 58, pp. 436–450.
- Greenwood, C. R., Horton, B. T., & Utley, C. A. (2002). Academic engagement: Current perspectives on research and practice. *School Psychology Review*, 31(3), pp. 328–349.
- Goswami, U. (2000). Phonological and lexical processes. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research, Vol. III*. Mahwah, NJ: Lawrence Erlbaum.
- ———, (2001). Early phonological development and the acquisition of literacy. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research*. New York: Guilford Press.
- Hall, T. (2002). Explicit instruction. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved from http://www.cast.org/ publications/ncac/ncac_explicit.html
- Hiebert, J., & Carpenter, T. (1992). Learning and teaching with understanding. In D. Grouws (Ed.), *Handbook of research on mathematics research and teaching*. (pp. 65–100). New York: MacMillan.
- Hiebert, J., Carpenter, T. P., Fennema, E., Fuson, K. C., Wearne, D., Murray, H., Olivier, A., & Human, Piet. (1997). *Making Sense: Teaching and Learning Mathematics with Understanding*. Portsmouth, NH: Heinemann.
- Hitchcock, C. H., & Noonan, M. J. (2000). Computer-assisted instruction of early academic skills. *Topics in Early Childhood Special Education*, 20(3), pp. 145–158.
- Johnson, A. P., & Rasmussen, J. B. (1998). Classifying and super word web: Two strategies to improve productive vocabulary. *Journal of Adolescent & Adult Literacy*, 43(3), pp. 204–209.

- Kamil, M. L. (2003). Adolescents and literacy: Reading for the 21st century. Washington, DC: Alliance for Excellent Education. Retrieved from http://www.all4ed.org/publications/ AdolescentsAndLiteracy.pdf
- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guide (NCEE #2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/practice_guides/adlit_pg_082608.pdf
- Klinger, J. K., Vaughn, S., & Boardman, A. (2007). Teaching reading comprehension to students with learning disabilities. New York: Guilford.
- LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology*, 6, pp. 292–323.
- Larkin, Martha. (2002). *Using scaffolded instruction to optimize learning*. ERIC Digest ED474301 2002-12-00. Retrieved from www.eric.ed.gov.
- Lehr, F. & Osborn, J. (2005). *A focus on comprehension*. Honolulu: Pacific Resources for Education and Learning (PREL). Retrieved from http://www.prel. org/programs/rel/rel.asp.
- Liberman, I. Y., Shankweiler, D., & Liberman, A. M. (1989). The alphabetic principle and learning to read. In D. Shankweiler, & I. Y. Liberman (Eds.), *Phonology and reading disability: Solving the reading puzzle* (IARLD Research Monograph Series). Ann Arbor: University of Michigan Press.
- Marston, D., Deno, S. L., Kim, D., Diment, K., & Rogers, D. (1995). Comparison of reading intervention approaches for students with mild disabilities. *Exceptional Children*, 62, pp. 481–498.
- Mathes, P. G., Fuchs, D., & Roberts, P. H. (1998). The impact of curriculum-based measurement on transenvironmental programming. The *Journal of Learning Disabilities*, 31(6), pp. 615–624.
- McCombs, B. L., & Vakilia, D. (2005). A learner-centered framework for e-learning. *Teachers College Record*, 107(8), pp. 1582–1600.

- National Center on Response to Intervention. (2010).
 Essential Components of RTI A Closer Look at
 Response to Intervention. Washington, DC: U.S.
 Department of Education, Office of Special
 Education Programs, National Center on Response
 to Intervention.
- National Joint Committee on Learning Disabilities. (2008). Adolescent literacy and older students with learning disabilities: A report from the National Joint Committee on Learning Disabilities. Retrieved from http://www.ldonline.org/njcld
- National Reading Panel. (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Reports of the subgroup. Bethesda, MD: National Institute of Child Health and Human Development, National Institutes of Health.
- Neufeld, P. (2003). Comprehension instruction in content area classes. *Reading Teacher*, 59(4), pp. 302–312.
- Nokes, J. D., & Dole, J. A. (2004). Helping adolescent readers through explicit strategy instruction. In T. L. Jetton & J. A. Dole (Eds.), *Adolescent literacy research and practice* (pp. 162–182). New York: Guilford.
- O'Connor, R. E. (2007). Teaching word recognition: Effective strategies for students with learning difficulties. New York: Guilford.
- Palloff, R. M., & Pratt, K. P. (1999). Building learning communities in cyberspace: Effective strategies for the online classroom. San Francisco, CA: Jossey-Bass.
- Pikulski, J. J. (2006). Fluency: A developmental and language perspective. In S. J. Samuels & A. E. Farstrup (Eds.),

 What research has to say about fluency instruction.

 Newark, DE: International Reading Association.
- Pressley, M. & Block, C. C. (2002). Summing up: What comprehension instruction could be. In C. C. Block & M. Pressley (Eds.), Comprehension instruction: *Research-based best practices* (pp. 383–392). New York: Guilford.
- RAND Reading Study Group. (2002). *Reading for understanding: Toward an R & D program in reading comprehension*. Santa Monica, CA: RAND.
- Readence, J. E., Bean, T. W., & Baldwin, R. S. (2004). Content area literacy: An integrated approach (8th ed.). Dubuque, IA: Kendall/Hunt.

- Rekrut, M. D. (1996). Effective vocabulary instruction. *High School Journal*, 80(1), pp. 66–78.
- Rohrer, D., Pashler, H. (2007)Scarborough, H. (2001). Connecting early language to later reading (dis) abilities. In S. Neuman and D. Dickenson (Eds.), Handbook of early literacy research, pp. 97–110. New York: Guilford Press.
- Shin, N. (2006). Online learner's 'flow' experience: An empirical study. *British Journal of Educational Technology*, 37(5), pp. 705–720.
- Shinn, M. (1998). *Advanced applications of curriculum-based measurement*. New York: Guilford.
- Smith, M. (2010). *Best practices for next-generation assessments*. Chapel Hill, NC: MetaMetrics, Inc.
- Snow, C. E., Burns, S. M., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academies Press.
- Stecker, P., Fuchs, L., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of research. *Psychology in the Schools*, 42(8), pp. 795–819.
- Swanson, E. A., Wexler, J., & Vaughn, S. (2009). Text reading and students with learning difficulties. In E. H. Hiebert (Ed.), *Reading more, reading better*. (pp. 210–230). New York, NY: Guilford.
- Swanson, H. L. (2001). Searching for the best model for instructing students with learning disabilities. *Focus on Exceptional Children*, 34, pp. 1–15.
- Tomlinson, C. (1995). How to differentiate instruction in mixed-ability classrooms. Alexandria, VA:
 Association for Supervision and Curriculum Development.
- (1999). The differentiated classroom:
 Responding to the needs of all learners. Alexandria,
 VA: Association for Supervision and Curriculum
 Development.
- Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of School Psychology*, 40, p. 6.
- ———, (2006). A comprehensive K–3 reading assessment plan: Guidance for school leaders. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Torgesen, J. K., Rashotte, C. A., & Alexander A. (2001). Principles of fluency instruction in reading: Relationships with established empirical outcomes. In M. Wolf (Ed.), *Dyslexia, fluency, and the brain* (pp. 333–355). Parkton, MD: York Press.

- Vandergrift, K. E. (2002). The anatomy of a distance education course: A case study analysis. *Journal of Asynchronous Learning Networks*, 6(1).
- Vaughn, S., & Linan-Thompson, S. (2004). *Research-based methods of reading instruction, grades K–3*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Vaughn, S. & Roberts, G. (2007). Secondary interventions in reading: Providing additional instruction for students at risk. *Teaching Exceptional Children*, 39(5), pp. 40–46.
- Vellutino, F. R. & Scanlon, D. M. (2002). The interactive strategies approach to reading intervention. *Contemporary Educational Psychology*, 27, pp. 573–635.
- White, T.G., Power, M.A., & White, S. (1989).

 Morphological analysis: Implications for teaching and understanding vocabulary growth, *Reading Research Quarterly*, Summer.
- Whipple, G. (Ed.). (1925). The Twenty-fourth Yearbook of the National Society for the Study of Education: Report of the National Committee on Reading.
 Bloomington, IL: Public School Publishing Company.
- Zeno, S. (1995). *The Educator's Word Frequency Guide*. Touchstone Applied Science Associates.