Research Basis for BrightFish Reading New York

Like many learned skills, reading is a multifaceted process that develops only through practice. Consider that the average middle school student reads an estimated 1 to 10 million words per year, while the struggling student may only read 100,000 (Nagy & Anderson, 1984). If we expect struggling students to read, we have to make it more accessible and provide opportunities to practice with material that is appropriate to their age, interests and skill level.

Brightfish Reading is a structured, online program that enables struggling learners to practice reading grade-level material while motivating them to improve their word recognition fluency, vocabulary and comprehension skills.

Subskill Automaticity – Word Recognition Fluency

In order to comprehend, readers need sufficient working memory available to draw out the meaning from the words they read. In their information-processing model of automaticity, LeBerge and Samuels (1974) explained that mastering reading sub-skills (such as rapid word recognition) to the point of automaticity allows readers to have the cognitive capacity to attend to the meaning of what is being read. Slow, effortful word recognition inhibits reading comprehension because it consumes the working memory needed for understanding the content of the text (Begeney, 2013).

Fluent reading requires simultaneous operation of multiple processes, including word identification and comprehension (Samuels and Farstrup, 2006). Beginning and struggling readers tend to focus inflexibly on word-level text representation, while more proficient readers tend to create semantic representations of text. This causes differential effects of repeated exposure to reading on fluency.

BrightFish Reading addresses these gaps by first breaking down each passage to word level, starting with simple 1-3 letter words and moving up through to more complex words and phrases. Students match visual and auditory targets from the stories. The BrightFish system measures accuracy and speed to determine that students have mastered automatic recognition before moving to the next, more challenging level.

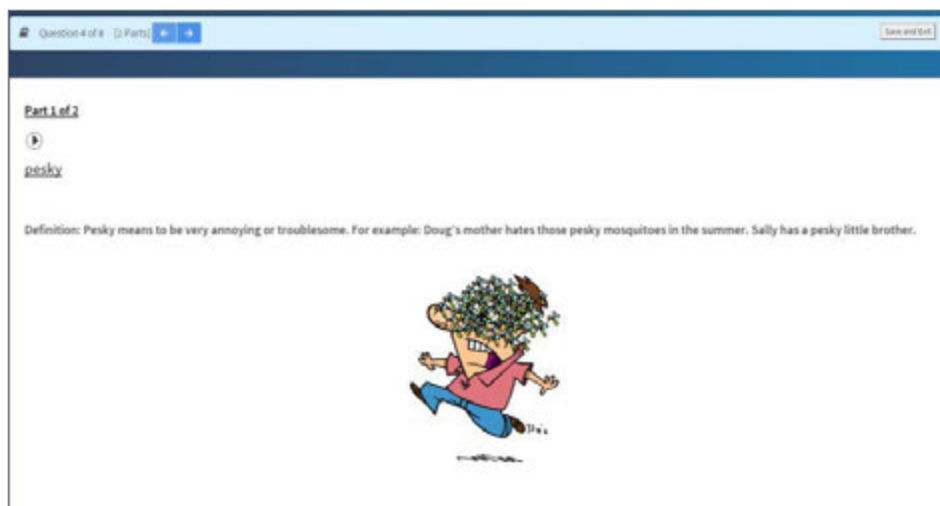 *Right: Students develop rapid word recognition of words from the stories they will read.*
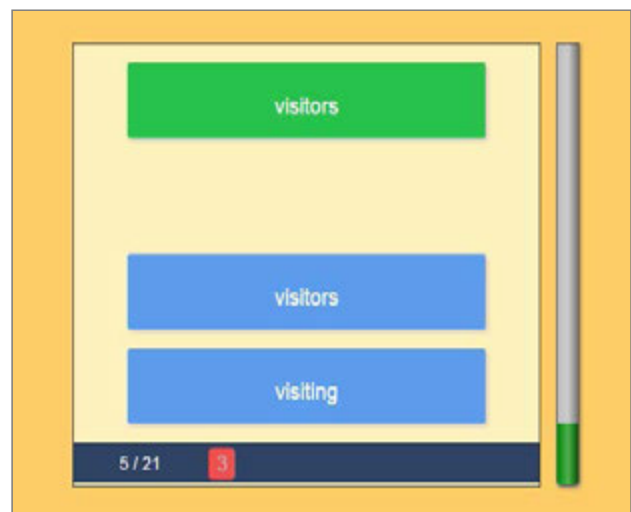
Direct Vocabulary Instruction

Once automatic word recognition is developed, students work on vocabulary knowledge. In addition to direct, explicit instruction, Stahl (2005) found that students should be given multiple opportunities to encounter words repeatedly and in a variety of contexts.

In BrightFish Reading, key words for each passage are taught explicitly so that when seen in context they are understood. Images and short animations help students visualize the meaning of the words. Students learn the definition of each word, see examples of usage in different contexts, sort similar and opposite words and use the words in a sentence. Read-aloud options provide further support.

This explicit instruction ensures that when a word is encountered in the text, students will recognize the word and its meaning.


Above: Word definitions are supported by images and examples of usage in context.

During Reading Activities – Key Facts and Details

Now that students have mastered rapid word recognition and key vocabulary, they move to the final layer – comprehension. Research shows that word recognition practice combined with comprehension training is significantly more effective than word recognition or comprehension training alone (Berninger et al 2003) and produces lasting effects.

Students work on individual paragraphs, focusing on the facts and details in surface-level comprehension exercises called "during reading" activities. Having developed rapid word recognition, students' working memory is available to deal with answering questions about what the author is writing about. With repeated exposure to the text from simple words and phrases to now facts and details, the meaning of the passage becomes accessible. Students are ready to move to the real goal of reading – to derive deeper meaning.
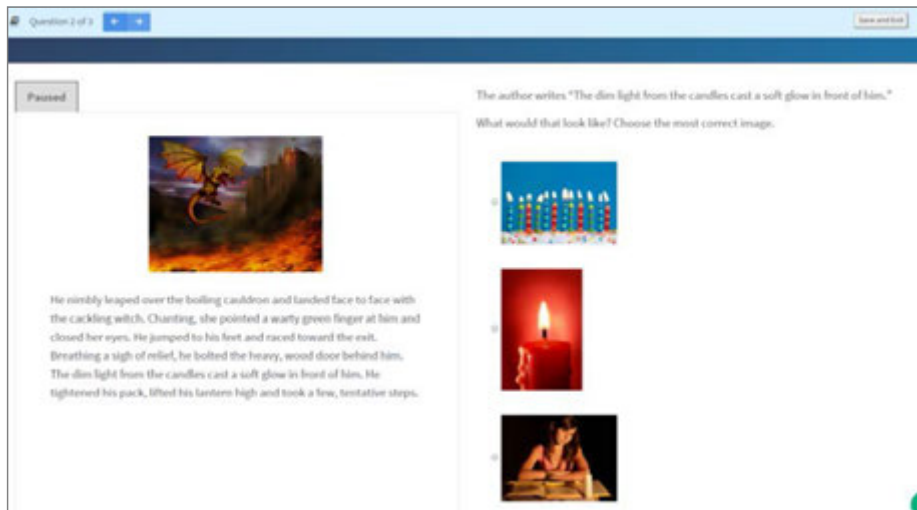
Above: Students read paragraphs and identify facts and details contained in a 5th grade story.

Post-Reading – Critical Thinking

Once students have progressed to this point in the training sequence, they are able to think about connections, cause and effect, author's purpose and literary features.

Brightfish Reading completes students' learning with a series of high-level comprehension activities that feature graphic organizers and free-form writing to complete students' internalization of the meaning of a text. After reading the full story, students work on a broad range of practice activities using common assessment item types, including multiple choice, constructed response and technology enhanced. Once all activities are completed, each student fully comprehends the text at grade level.
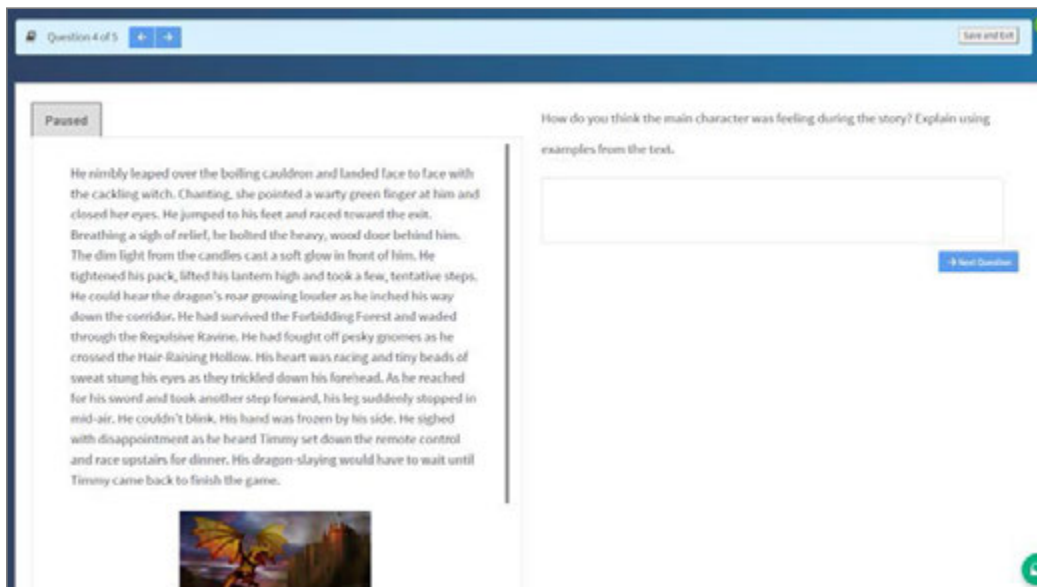
Above: Students read the full text and demonstrate high-level critical thinking, including inferencing and evaluation.

Continuous and Positive Feedback

Structured, deliberate practice is effortful, so in order to make it effective, additional support is needed. According to K. Anders Ericsson, a major ingredient to effective practice is immediate informative feedback. Brightfish Learning hired experienced educators to create just that. Our BrightFish Reading software responds to each students' response with either descriptive positive feedback (to help students understand why the answer is correct) or instructive corrective feedback (so that students understand why they are incorrect). Each response is customized to the activity and supported by audio and video elements.

Gamification and Rewards

Struggling students need motivation. A variety of rewards systems are built into the BrightFish Reading program to keep students engaged. While the ability to tackle content previously out of reach will be a powerful reward, many students will respond to the collection of points redeemable for "game time" that are built into our program. All game play is earned and learning-based.

Easy to Use Teaching Tools

BrightFish Reading is designed for teachers to use in the classroom, lab or as part of after-school or supplementary programs. Students can use the program on any device, even at home, for frequent practice. Convenient scheduling and online reporting tools let teachers get started right away and track how students are progressing against their goals. The management system features a suite of customizable tools for easy calendar organization as well as simple quiz and feedback creation.

BrightFish Reading – Bringing Grade-level Reading to Struggling Learners

At Brightfish Learning, we are very mindful of what struggling students cope with every day on both an instructional and motivational level. Our goal is to make grade-level content accessible and provide the structured and deliberate practice that will help students meet curriculum standards and close the achievement gap within classrooms.

To learn more about BrightFish Reading, visit **www.brightfishlearning.com**