

Teacher-Created Electronic Books: Integrating Technology to Support Readers With Disabilities

Joan A. Rhodes, Tammy M. Milby

The No Child Left Behind Act of 2001 (NCLB) in the United States requires the use of proven research-based teaching methods for reading instruction and holds states accountable for the yearly assessment of student progress. Disaggregated data collected as a result of these assessments indicate that students with special needs still lag behind others and therefore remain a significant concern for teachers and administrators. One way to meet the needs of students with disabilities is to use assistive technology. The Individuals with Disabilities Education Act of 2004 (IDEA) defines *assistive technology* as “any item, piece of equipment, or product system, whether acquired commercially or off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability” (IDEA, 2004, p. 6). Assistive technology enables teachers to meet the needs of individual students within the regular classroom. This article will describe the benefits of using electronic books to enhance student retellings and provide specific instructions for using electronic books to support struggling readers.

Why Use Electronic Books for Retellings?

Young children need many opportunities to read and respond to literature daily during language arts instruction. Traditionally, teachers provide additional occasions for repeated text readings, using tape-recorded copies of stories as one method of addressing these needs. Students are engaged at a literacy center and track print as they turn the pages of the book and hear an adult read aloud with intonation and expression. However, our experience has been that some children require additional support with this activity. Technology can serve as a catalyst for change, enabling teachers to improve upon this in-

structional technique. The use of computer-based electronic storybooks provides the same benefits as audiotaped books, with the added advantage of technology supports and increased interactivity.

Electronic books can be used to capture student responses to engaging children’s literature. Retellings and other response activities encourage students to create versions of text using their own language. As students reconstruct stories they practice sequencing events, identifying main ideas within a variety of text structures and making personal connections to the story elements. Research has indicated that the use of retellings also enhances students’ ability to answer questions and improves overall text comprehension (Caldwell & Leslie, 2005). Through consistent use of retelling activities, educators are able to create a large collection of teacher- and student-generated electronic books for classroom use.

How Do Electronic Books Support Students With Disabilities?

A strong print-based literacy curriculum is enhanced with electronic books (e-books). E-books typically replicate traditional storybooks but add multimedia effects to support student understanding of the content (Shamir & Korat, 2006). Through e-books, students are exposed to sound, animation, and interactive activities that scaffold learning and are able to master tasks that may not be accomplished independently. Students with disabilities often feel confident with the use of technology to support learning. The National Association for the Education of Young Children (NAEYC) has stated that technology should be employed as an active part of the learning process and discussed the benefits of its use for extending children’s abilities (NAEYC, 2003). E-books

support students with both physical and learning disabilities, enhancing the text format and the opportunities available for multiple readings. E-books and other text-to-speech readers boost students' self-esteem while providing access to texts that were previously out of reach ("Technology Gives Disabled Students of All Ages a Brighter Future," 1998).

Students with disabilities require a significant amount of support to tackle basic literacy activities on their own. Teachers can meet the needs of students of varying abilities when they exploit the unique multimedia features of computer applications and Internet sites (Eisenwine & Hunt, 2000). Through the use of teacher-created e-books, students with disabilities are able to gain access to the literature used in the regular classroom program and deepen their understanding. Children's literature that is transformed into an electronic format allows students to track print and view a visual representation of the story. For children with disabilities, the physical turning of the pages of a book is no longer necessary. Through multiple readings of text, e-books support student vocabulary acquisition and comprehension while modeling fluent reading (Horney & Anderson-Inman, 1999; Lefever-Davis & Pearman, 2005). Although many commercially developed e-books are available, teachers can, with minimal effort, produce books that are directly related to their curriculum using simple slideshow software programs such as Microsoft PowerPoint, which is available on most classroom computers.

Creating E-books

The first step in developing a teacher-made e-book is to open a new slide-show file with a blank layout. Next, the user should insert a text box on each slide, containing the student-generated language. This step requires a bit of prior planning, because the teacher must decide how much text to include on each slide. Then, the teacher can include graphics such as clip art or digital photographs to support the main idea of the text. Clip art is available online and within the Microsoft Office suite and other commonly used publishing programs. Teachers who choose to use digital photography to illustrate retellings further support reader-to-text connections when they allow students to photograph environmental objects related to the literature. Once illustrations have been selected, custom

Figure 1
Simple Steps for Creating Electronic Storybooks

1. Start a slide show with a blank layout.
2. Insert a text box on each page.
3. Insert a graphic such as clip art or a digital photograph to match the text on each page.
4. Set the animation effects to transfer from one slide to the next.
5. Record narration for the slide show.

animation can be added to move from slide to slide, if desired. Lastly, the creator can use the slide-show program's narration feature to add voice or sound effects to the story. Classroom-created e-books generally do not infringe on copyright law because students use their own language and illustrations to retell the story. See Figure 1 and Figure 2 for instructions and slide-show templates.

Classroom Interactions

The following vignette describes one interaction in Mrs. Moon's (pseudonym) second-grade classroom providing a model for educators interested in using teacher-created e-books. This approach is easily incorporated with classroom practice to support the needs of learners at a variety of instructional levels.

Mrs. Moon is a second-grade teacher in an urban elementary school in Virginia. She recognizes that reading practice is critical for all students in her classroom, including her two students with disabilities. Her goal as a classroom teacher is to scaffold all of her students toward accurate, fluent reading with high levels of comprehension. One of her main objectives is to provide the diverse learners in her classroom with multiple opportunities to reread familiar material to build fluency. Mrs. Moon has been using *The Hello, Goodbye Window* by Norton Juster (2005) with her class. This intergenerational story provides children with everyday examples of family love. In response to the reading, she encourages the children to make connections to their everyday experiences with family members. Following group discussion, Mrs. Moon asks her students to retell the story events using a story map graphic organizer. Mrs. Moon is careful to record

Figure 2
Sample Page Layout

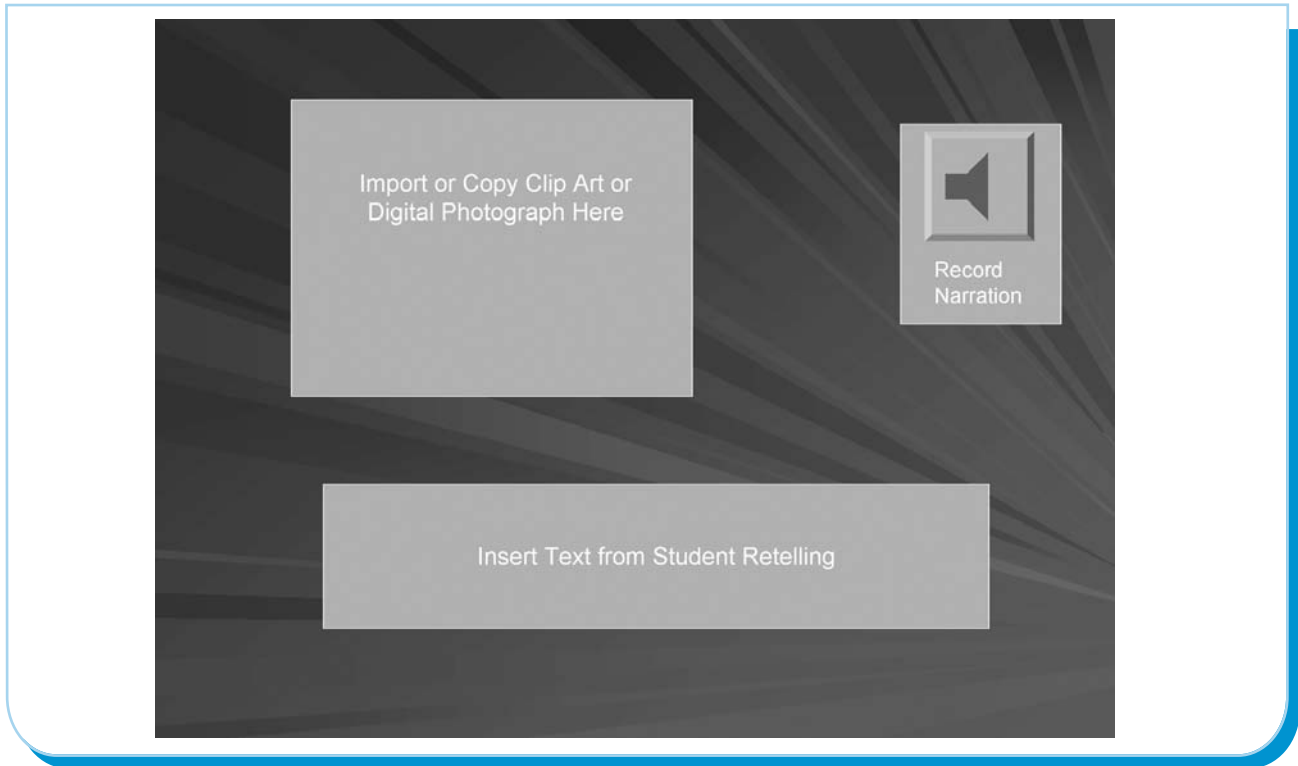


Figure 3
Page From a Student's Retelling



Figure 4
Page Tying the Student's Retelling to the Original Story



the retellings as accurately as possible without changing the students' natural language. During her planning period, Mrs. Moon types the students' retelling into the open text boxes on her slide-show program and adds illustrations using clip art and the digital photographs (Figures 3 and 4).

The next day during language arts instruction, Mrs. Moon reviews the class retelling using her e-book and then allows the students to record the narration by reading the text as she moves from slide to slide. After listening to the student-generated e-book as a group, the final product is copied and loaded onto each of the desktop computers in Mrs. Moon's classroom. Students are encouraged to view the e-book during independent reading time. E-books let Mrs. Moon use technology to review the structure of the text, increase student comprehension of critical story details, and encourage multiple rereading of student retellings to build fluency.

E-books are an effective instructional strategy for students with disabilities. The embedded supports scaffold learners, enabling all children to be successful in the classroom. As a form of assistive technolo-

gy, e-books give students greater access to classroom materials, fostering fluency and comprehension. Integrating e-books and classroom instructional practices boosts achievement and ensures that all students are successful literacy learners.

Rhodes teaches at Virginia Commonwealth University in Richmond, Virginia, USA; e-mail jarhodes2@vcu.edu. Milby teaches at the same University.

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