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Once Upon an Electronic Story Time

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In elementary classrooms of today many teachers read books aloud daily, make them available to students in class libraries, discuss them as a community of learners, integrate them into units of study, invite children to respond to them, and use them as a primary source in helping children learn how to read. With the recent infusion of computers into early childhood classrooms (Becker, 1993; Morsund, 1994), the growing number of CD-ROM multimedia storybooks, and the inclusion of many CD storybook titles in reading series (e.g., Harcourt Brace, 1997; Macmillan/McGraw-Hill, 1997), educators of today and tomorrow have a new and promising way to make books available to children. The purpose of this article is to consider how CD-ROM, electronic storybooks and related technology may offer distinctive experiences with literature and various pathways of support for young children's traditional literacy development. Just as importantly as we begin the 21st century, where being digitally literate may be the literacy standard of our society, CD storybooks and related technology may also foster children's digital literacy development. By digital literacy we refer to a person's ability to skillfully use various computer-based tools, features of software, and various symbol forms to accomplish personal, public, and communicative goals.

How do digital stories fit into the conventional elementary school classroom where printed storybooks play such a predominant role in promoting, indeed defining, literacy? How might we view these electronic stories and how

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might we use them in relation to our beliefs about literacy, in our efforts to engage students in stories, and ultimately in our efforts to help children become literate in the future? What are children's opportunities for literacy development during electronic story time?

It is perhaps too easy and tempting to view any digital materials as inferior intruders into the comfortable and longstanding domain of books. After all, favorite children's picture books are not only immediately accessible, but they also frequently evoke treasured memories for teachers, media specialists, and adults.

In answering these questions, it is perhaps too easy and tempting to view any digital materials as inferior intruders into the comfortable and longstanding domain of books. After all, favorite children's picture books are not only immediately accessible, but they also frequently evoke treasured memories for teachers, media specialists, and adults. Many educators who have few experiences with CD-ROM versions of stories may be unsure about the potential benefits of encountering stories in a digital environment. Perhaps the first important and difficult step towards answering these questions is to put aside these biases and to focus more dispassionately on what electronic stories might offer to us and to our children. We may also need to remind ourselves that literacy is not a static concept and that the conventional book in an objective sense is only one technology that can be used to tell stories (Reinking, 1997).

The electronic storybook, a complex and multi-dimensional story form, allows for conventional prose and illustrations to be supplemented with sound effects, animation, video and live-action performance. How do we, or should we, define and conceptualize electronic stories using these capabilities in relation to conventional stories in books? Such questions illustrate how electronic texts force us to re-examine conventional conceptions of literacy. However, in the limited space here we wish to focus more narrowly and perhaps more practically on how the characteristics of electronic storybooks (i.e., digital versions of stories that originated as printed books) might contribute to promoting the goals of conventional literacy in classrooms of today and tomorrow. Therefore, while we acknowledge that stories told on CDs are not entirely problem-free or without potential disadvantages, the potentials they have to provide distinctive pathways for supporting young children's opportunities for literacy development and preparation for life in the 21st century are worthy of exploration.

Potential Advantages of Electronic Storybooks

We think that the main advantage of electronic stories is that digital technologies allow them to be immediately attractive and engaging to most children, especially when no adults are around to guide reading. Books too, of course, can be attractive and engaging and authors and publishers often manipulate their features purposefully to make them so. For example, most children's books are artfully and colorfully illustrated and they are often displayed in attractive and pleasant surroundings. However, the computer introduces features that can enhance attractiveness and engagement in ways not feasible or possible in printed materials. Here we highlight three advantages, and we give some examples of how they have been, or might be, used.

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Electronic storybooks can provide opportunities for conventional literacy development by making independent reading more interactive.

Consider how a CD storybook provides a unique scaffolded reading experience for a young child we recently observed in a kindergarten classroom computer center. Tameka is a vivacious five-year-old who has had few experiences with stories at home. Sitting at the computer, she first encounters paper-based book features because CD storybooks employ a picture book metaphor to tell the story on screen. However, the book-metaphor then subtly shifts to incorporate cinematic features such as soft, mood-setting music that accompanies a screen animation of the main characters in the story setting. Watching book pages appear on the screen, she next encounters read-aloud features such as a fluent reader modeling an expressive narrative of the story. As the story is narrated and actors' voices perform dialogue, the read-aloud experience continues as phrases of text are highlighted in a left-to-right progression similar to the attention drawn to text by a reader pointing to text as it is read aloud. Next, when she clicks on several words on an interactive screen, she hears a responsive voice pronounce words. When she echoes or chorally reads an entire passage on one page, she experiences the support she might expect from a respon-

sive adult who rereads passages at her request. Although research is mixed on the benefits of this feature, it is possible that for children who have discovered the alphabetic principle, these encounters may strengthen word recognition and decoding skills.

On other occasions Tameka is likely to bring a hard copy of the book along with her, place it in her lap, and attempt to follow along in the book as the story is read on screen. Carefully tracking the print on the page as it is read on the screen, she sometimes notices that the story on screen has been slightly altered. These "Screen & Book Echo Reading" (Labbo & Ash, 1998) sessions invite her to broaden her notions of story and support her continued focus on how text and illustrations combine to tell the story. During her time at the computer center, Tameka has had many occasions to learn concepts about print, develop sight words, and build story meaning as the computer screen brought the story to life.

Electronic storybooks may meet the needs of various types of readers by making a wider selection of books available.

One of the more promising features of electronic storybooks for reluctant or emergent readers is that they make a wider range of books accessible. For example, by seeing a written and narrated description of a character's actions actually played out through animation on the screen, children like Tameka, who have difficulty envisioning story events, may be supported in their efforts to understand the story and may improve their ability to envision static text they encounter on the page in the future. The range of storybooks that are accessible to struggling readers may be broadened considerably by the addition of an electronic storybook classroom library.

When children are allowed to playfully explore interactive story screens, they learn how animation, sound effects, and music combine to enrich the story experience.

Another possible form of support is provided by a language option feature in many CD storybooks that allows young children to have opportunities to be exposed to another language. For example, Tameka may be able to acquire Japanese vocabulary words or develop insights into Spanish grammar structures during interactions with features of CD storybooks that allow her to repeatedly hear selected words within the context of a story that she has already heard in English. On the other hand, her ESOL peers, who speak primarily Spanish or Japanese, may elect initially to see and hear the story in their first language. Subsequent interactions in English versions of the story may also create rich opportunities for second language literacy development.

Electronic storybooks naturally blend the language arts and the multimedia arts thereby initiating students into the conventions of digital literacy.

As described in the previous section, electronic storybooks are multimedia, digital documents employing a variety of symbol systems. When children are allowed to playfully explore interactive story screens, they learn how animation, sound effects, and music combine to enrich the story experience. Labbo & Kuhn (1998b) suggest that teachers need to preview and analyze CD storybooks to ensure that children encounter what they have called considerate CD stories. Drawing on notions of considerate text raised by Armbruster & Anderson (1981) they have found that children gain a better understanding of a story when all of the multimedia features work together to tell the story in supportive ways. For example, animation special effects should support and complement the story instead of presenting story-incongruous or story-incidental information. As children interact with the story on screen, they also learn how to expertly navigate through pages and use all of the available tools that might support their search for meaning. Additionally, they learn how to page back and reaccess a portion of the story to build story comprehension.

We suspect that in the not too distant future, electronic storybooks will evolve in ways that allow students to literally step into the story by presenting virtual, three dimensional settings that are responsive to their interests and needs.

When children are invited to respond to story in a digital format, they may be inspired to stretch their imaginations and expressive representations in ways that go beyond the boundaries provided by paper and crayons. For example, when using expressive software programs such as Kid Pix 2 (Hickman, 1994), they not only integrate the language arts (e.g., listening, speaking, reading, writing) but they utilize the digital multimedia arts (e.g., icons, animation, sound effects, music, quick time movies) as well. Children are no longer limited to attempting to represent movement on a static page because they may now animate stamped icons to show movement or change over time. Children create an animated setting of story places, draw characters that can move across the screen, manipulate props on screen, show story episodes, and may even make a slide show, or series of screen portrayals of the story. Furthermore, technology allows children to dictate, record, and playback their retellings of stories. These forms of "electronic symbol-making" (Labbo & Kuhn, 1998a) which involve strategic planning, conceptual processing, and knowledge representation allow children to develop insights into digital literacy. Thus digital literacy refers to children's ability to utilize features of computer programs for

their personal and public communicative purposes. Children using multimedia expressive programs learn that procedures for their digital meaning making rely on dependable action schemes (e.g., how to access particular tools or features) and creative problem solving (e.g., how to combine tools or features to create new effects or to communicate a specific idea). They learn that digital symbol making on a computer screen allows for a recursive composing and thinking process. For example, unlike a piece of paper, a child can erase the screen as often as needed in an effort to make specific meaning. Without the constraints of paper and pencil, children learn that the computer allows them to develop their ideas on screen, so they may be more likely to discover, arrange, and rearrange their stories for specific communicative purposes and literary styles.

Potential Disadvantages of Electronic Storybooks

Although we have highlighted many advantages of electronic storybooks, we feel the need to raise a few cautions, as we would feel obliged to do with any new and largely unproven technology. After all, it is fairly obvious that not all electronic storybooks are equally well-crafted or are of equally high quality. In this section we briefly discuss selected CD storybook features that deserve our careful scrutiny.

Electronic storybooks may interfere with children's story comprehension.

Most electronic storybooks offer an interactive play mode option that allows children to click on various screen components (i.e., words, illustrations, animation, characters) as they navigate through the screened pages of a story. However, we have noted in our work (Labbo & Kuhn, 1998) that features of play mode do not appear to consistently foster children's engagement with the story or their use of higher order thinking skills. Indeed, when animation episodes are entirely incongruous with the story, children we have studied are frequently distracted from any attempts to make sense of the story. For example, if a portion of a CD deals with the tranquil mood a mother establishes when singing a lullaby as she tucks her baby into bed at night, and a mere click on a toy car results in a cops and robbers chase scene around the nursery floor, it is doubtful if a young child will be able to make sense of how such incongruous and riotous action fits into the overall story—nor should they be expected to do so. It is our belief that these problems can be overcome if the thought and artistry that are typically poured into the creation of print versions of stories are also applied to the creation and design of electronic storybooks.

Electronic storybooks may interfere with children's opportunities to develop traditional concepts about print.

Many teachers hope that children will have substantial opportunities to attend to concepts about print (i.e. left-to-right directionality, word recognition) during their viewings of electronic storybooks and, as we have illustrated in several scenarios, this is often the case. However, it has been our experience that when some children are presented with highlighted text which is accompanied by simultaneous animation, their attention is invariably drawn to the

animation or other non-print features. For example, when the text uses a dialogue marker such as "he said" and a character on the screen begins to move his mouth in synchronization with the dialogue, children we have studied (Labbo & Kuhn, 1998b) tend to exclusively focus on the movement of the character and not on the words as they are presented. This problem could be alleviated with a more careful design of electronic storybooks.

Concluding Thoughts on What the Future May Hold

We suspect that in the not too distant future, electronic storybooks will evolve in ways that allow students to literally step into the story by presenting virtual, three dimensional settings that are responsive to their interests and needs. For example, virtual electronic stories of the future may involve an intricate multimedia environment that invites children to interact in various ways. Imagine an interactive environment that allows a child easy access to background knowledge about story components. What would such an experience be like if a kindergartner could utilize the services of an on-screen, tailored story guide (e.g., perhaps in the form of a digital Mother Goose) that is specifically designed to answer that child's questions, provide support, or offer navigational directions? What would the story experience be like if the child had the opportunity to innovate on the story by playing the role of an additional story character who can impact the story plot and ultimate resolution? Whatever form electronic narrative and stories may take in the future, we firmly believe that educators will continue to seek ways to integrate and customize available books and technologies to meet the diverse needs of their students and to celebrate the central role that stories are likely to continue to play in our thinking, writing, reading, and other multimedia communicative endeavors. It is vital that educators continue to sort out how stories—told in books, on computer screens, on wall panels, or during any electronic form of storytelling—may be interwoven as mutually supportive and integral aspects of both traditional and digital literacy development and instruction.

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