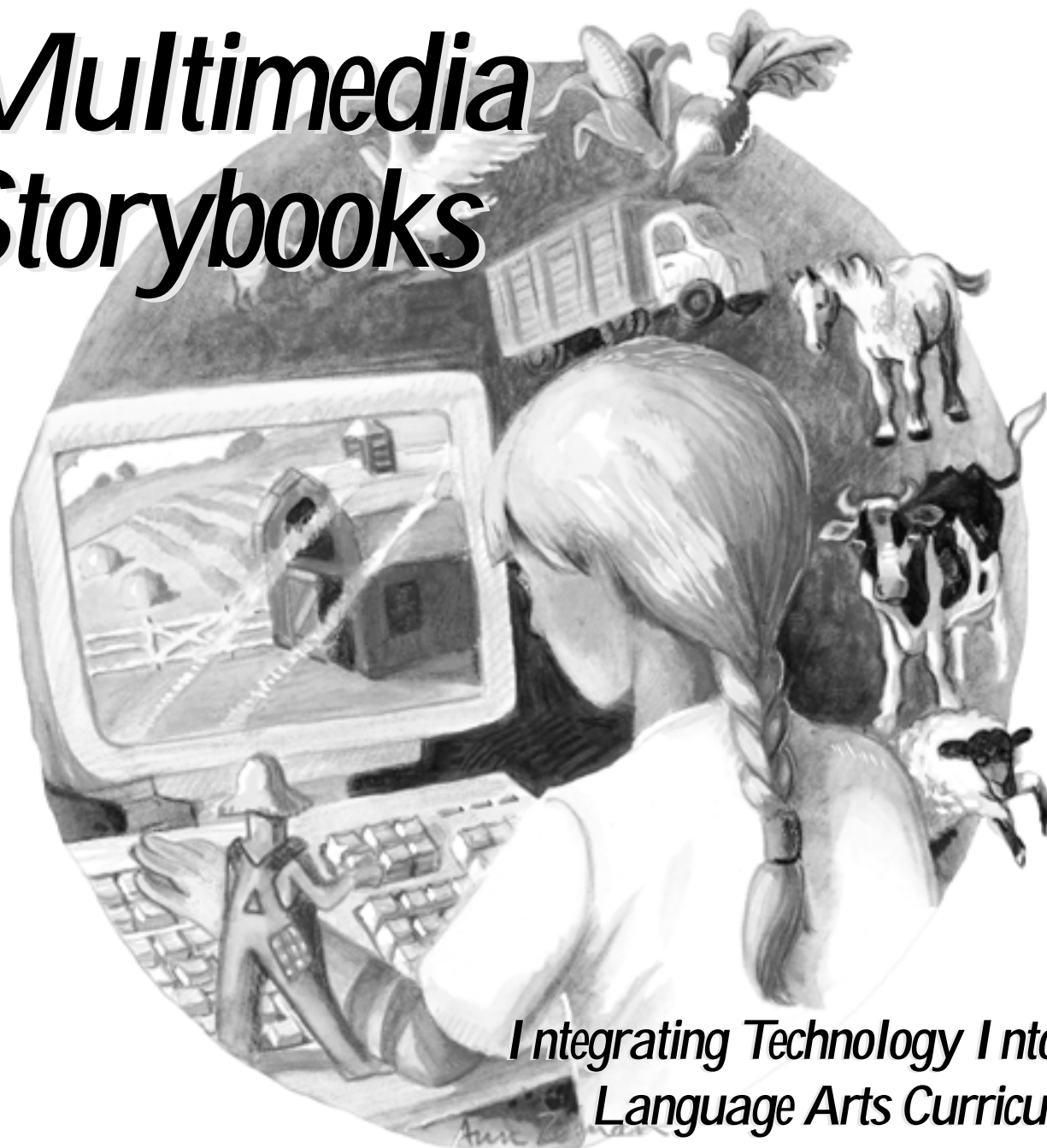


Interactive Multimedia Storybooks



Integrating Technology Into the Language Arts Curriculum

Technology doesn't always seem to fit in well with the language arts curriculum. Students can word process their reports and papers, but that has always been peripheral to the actual curriculum. With the advent of interactive storybooks, however, learners at all levels can use the computer to read. This article describes a project that brings technology even further into the language arts curriculum: Middle school students designing interactive storybooks for first and second graders.

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By Scott Fredrickson

Finding appropriate, interesting, and useful ways to integrate technology into language arts can be a challenge. Including multiage and multigrade components add an additional degree of difficulty or interest, depending on your perspective. Don Kosmicki of Phelps County R7 School District in Holdrege, Nebraska, has accomplished both with the following project.

R7 is a rural, K–8 school district in central Nebraska with approximately 95 students. Don is the technology coordinator for the district and also teaches computer applications for the seventh and eighth grade classes. While watching the first and second grade teachers use commercially produced interactive CD-ROM storybooks with their students, Don was impressed by the enthusiasm the students demonstrated when they used the programs. Because he was in the process of selecting new projects for his multimedia class for the following semester, he thought a language arts project focusing on interactive storybooks seemed only natural. Why not have the eighth grade students *create* interactive storybooks for the first and second graders? After consultations with the language arts teachers, Don began to plan the project.

Planning the Project

Before Don turned his students loose with this project, he had to decide what skills they would need to learn before beginning—in addition to listing what skills he could expect them to learn in the process of carrying it out. To begin, the students needed to have a basic understanding of the multimedia program, be able to tell an interesting story, and be willing to put in a lot of time revising the project. At the end of this project, he anticipated that all of these skills would be directly enhanced,



as well as students' problem-solving, instructional-design, and group skills.

In addition, Don had to plan how students should tackle the project. He decided to have them work as “developmental teams” rather than as individuals, similar to the way multimedia product teams operate in the

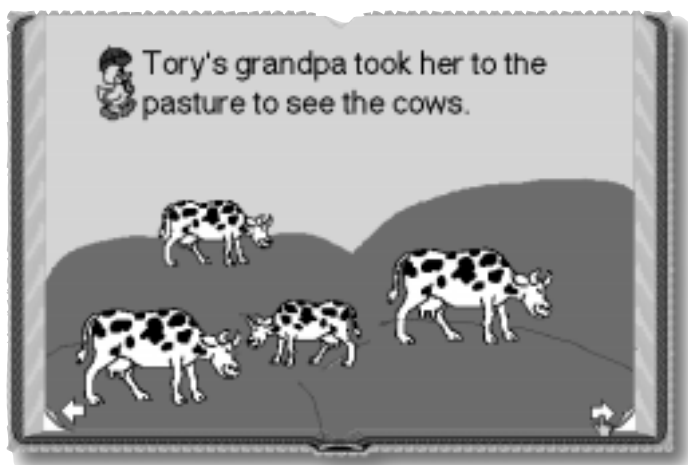
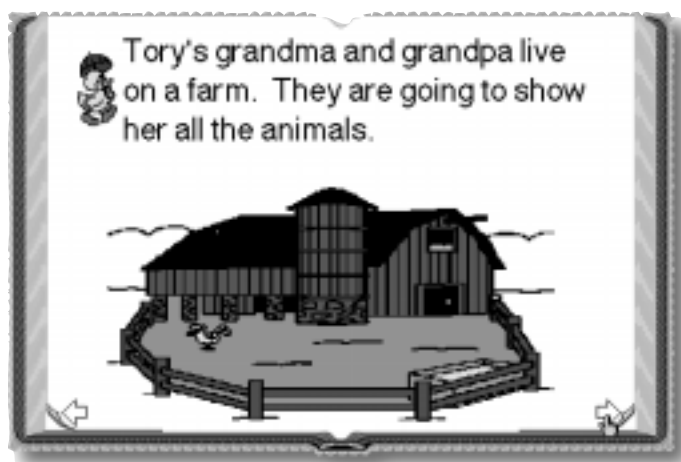
“real world.” As soon as he had finished planning and listing the expectations he had for the project, he was ready to get started.

Five Phases

Don divided the nine-week project into five phases: preproduction, story creation, interactive design, construction, and assessment. Each phase would

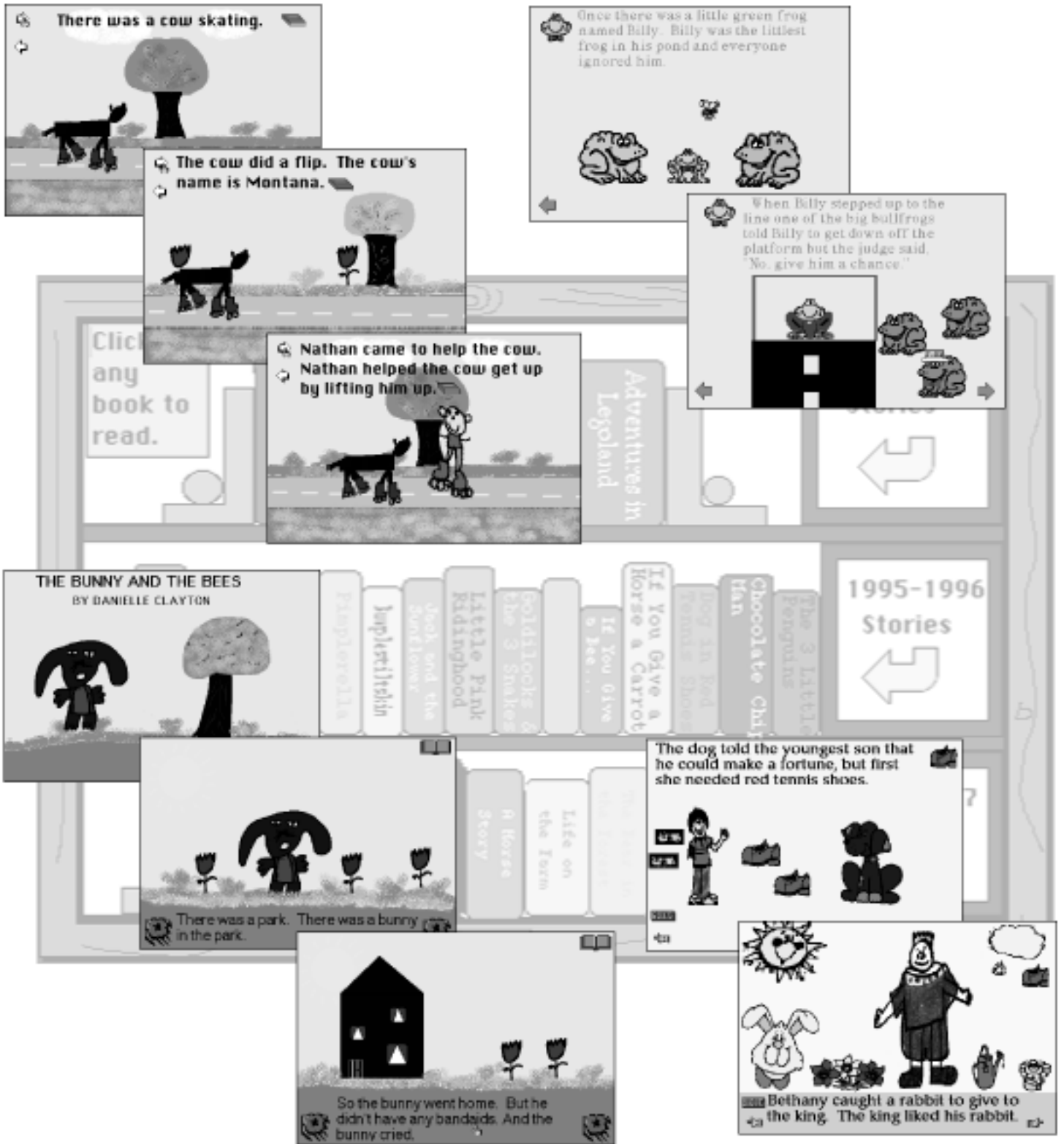
have its own objectives and a timeline for accomplishing those objectives.

Preproduction. The preproduction phase was almost three weeks long. The students spent this time learning to use basic HyperStudio commands and tools, including the drawing, animation, audio, navigation, and text tools. All class sessions in this and all subsequent phases were 40 minutes per day, five days per week. Don assigned several minor projects to teach students to use the program. For example, students used the drawing tools to create a map of their school that showed locations such as the library, offices, classrooms, cafeteria, and so on. They learned how to use the navigation buttons by typing short reports on several cards and connecting the cards with buttons such as Previous Page and Next Page. Students used New Button Actions to move various objects across the screen, thereby learning animation skills. After becoming competent with the basic skills needed to create HyperStudio projects, stu-



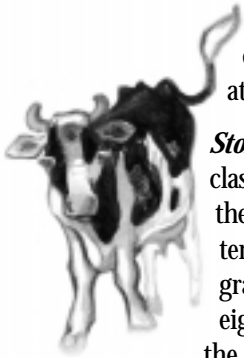
The three screenshots on this page were created for first and second graders by Don Kosmicki's eighth grade language arts students.

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The illustrations on this page come from the electronic "bookshelf" of multimedia storybooks created by the eighth grade multimedia design teams at Phelps County R7 School District. As a supplemental activity, eighth graders paired up with the first and second graders to create storybooks based on the younger students' stories. The sample shots on the left side of the page are from storybooks designed by the younger students, and those on the right side of the page are from stories created and designed by the older students. In each multimedia stack, students can click on each sentence to listen to it read aloud, or they can click on individual words to have them pronounced.

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dents were ready to move on to the story creation phase.

Story Creation. The story creation phase took five class sessions, where students were introduced to the instructional goal of the project—creating interactive multimedia storybooks for the primary grades to help teach beginning reading. The eighth-grade students viewed and worked with the CD-ROM storybooks *Just Grandma and Me* and *Arthur's Teacher Trouble* (both from Living Books) to get a feel for the genre. The class was divided into small groups to critique the two examples and to discuss issues they would need to be concerned with as they created their interactive books. The small groups then combined to discuss all of their ideas.

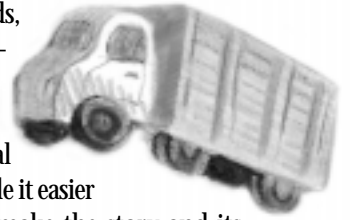
Students decided that two factors made the Living Books exceptional. First, the programs were not too sophisticated for young students. They were simple, attractive, and straightforward. Second, the books were internally consistent. For example, the buttons for turning the pages were in the same place on each page. The students also noted that the colors were attractive, the sounds were not overused or distracting, and the programs did not have a lot of different actions taking place simultaneously on the screen, which might have confused younger students. These were points the students would need to consider when they developed their own projects.

After gaining a complete understanding of good ideas and pitfalls to avoid, each student team developed its own creative story using ClarisWorks. The students had two major things to keep in mind throughout the project: (a) the audience consisted of first and second graders, and (b) the stories needed to be interesting and fun. By keeping the audience in mind, the students would use vocabulary that was appropriate for first- and second-grade students, rather than for their usual audience of teachers and eighth-grade peers. It was interesting to note that the students initially did not understand why they were writing in the “technology” class, because they thought that writing was the domain of English class. The students were told they would have to use skills from all of their classes and perhaps even some things they had learned outside of school. With all this in mind, the storytellers began their task of creating, proofing, editing, rewriting, and completing their stories.

Interactive Design. After developing their stories, students began the interactive design phase: the transition from written story text to interactive electronic storybooks. Students broke down their stories into electronic “pages” that would be displayed onscreen. Each page was drawn on a 4" x 6" note card. Text, graphics, and other items for each page were either



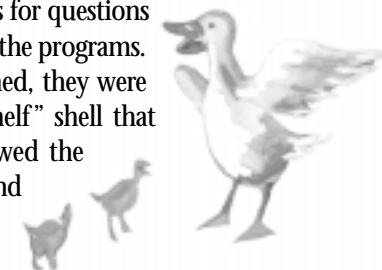
drawn or written on the note cards, or an annotation was made indicating the action that would take place on a particular card. Students used the note cards to develop their initial storyboards, and the index cards made it easier for students to rearrange items to make the story and its components flow better. Students discussed their storyboards and offered each other suggestions, advice, and comments. By the end of the week, students were eager to begin the process of converting their storyboards into interactive computer-based stories.



Construction. The construction phase took the longest, lasting three five-day weeks. Using their knowledge of HyperStudio, students transcribed the information from their storyboards into cards. After creating the initial file, students would decide to add to their project, adding scanned images and photographs, voice recordings, and a variety of sounds. These additions would occasionally take students deeper into their assignments and require them to use more elaborate HyperStudio features than they had been taught. Students would pull out their manuals and begin asking Don questions, and he would encourage them to consult the manuals and work together. This helped them develop better problem-solving and teamwork skills. Students gathered in small groups to discuss problems and share solutions. During these sessions, students shared new ideas with each other. Although almost completed, the projects were not quite ready to be shared with the first and second grade students.

Assessment. The assessment phase took one week to complete. Before turning the younger students loose with the electronic storybooks, class members viewed and evaluated each other's projects. Students gave detailed critiques for each project, focusing on accuracy, continuity, interest, and creativity. They then modified their projects as needed. The eighth graders were overflowing with excitement when the first graders came in to read and interact with their stories. Eyes were bright and shiny and smiles were abundant as the first and second graders eagerly read and interacted with each story. Because many of the stories had a “local flavor” to them, it seemed the younger students enjoyed them even more than the *Brøderbund* storybooks! The assessment was not quite complete until the eighth-grade students probed the younger students for questions or suggestions they might have for the programs.

When all the stacks were finished, they were placed into an electronic “bookshelf” shell that Don created. The bookshelf showed the various titles of the storybooks (and had room for future additions) and allowed users to select and inter-



act with each book. The bookshelf of storybooks was installed on the computers in the first and second grade classrooms to be used by future classes.

Follow-Up Project

The following semester, Don's eighth graders did a follow-up project. This time, the second graders dictated the stories, and the eighth graders turned them into interactive books. It was an interesting sight to watch second graders explaining to the older students what should belong on the screen and how things should look. Neither group was used to working in that way, but they both seemed to enjoy the process.

For both groups of students, bringing in skills and experiences from other areas and classes while using problem-solving and evaluative and reflexive skills was a challenging and interesting way to integrate technology into their language arts curricula. ■

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Resources

Arthur's Teacher Trouble, by Marc Brown, and *Just Grandma and Me*, by Mercer Mayer, are published by Living Books: A Random House/Brøderbund Company. These and many other CD-ROM storybooks are available from Brøderbund Software Inc., 500 Redwood Boulevard, Novato, CA 94948; 800/354-9706 or 415/382-4400; fax 415/382-4419.

HyperStudio is available from Roger Wagner Publishing Inc., 1050 Pioneer Way, Suite P, El Cajon, CA 92020; 800/hyperstudio or 619/442-0522; fax 619/442-0525.