MICHIGAN READING JOURNAL

Michigan Reading Journal

Volume 22 | Issue 4 Article 5

July 1989

Exploring Language in a Multimedia Environment

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by Anne E. Porter, Ph.D.

At Somerset School in Troy, Michigan, pre-kindergarten children are participating in a multimedia classroom project sponsored by Apple Computer Company and Scholastic Software. These four- and five-year old children have access to a variety of software and hardware tools. The general program in this pre-kindergarten emphasizes the development of high self-esteem, creativity, active exploration, construction of one's own knowledge, communication skills, social skills, and self-regulation. During each three hour session, there are two group times and at least three planned activities which are available in learning centers. A journal writing learning center is open every day where a variety of language experience activities take place regularly. A great deal of emphasis is placed on creating a literacy-rich environment, however there is no pressure on children to learn to write or read. In addition to regular activities of the program, through the multimedia project, the children have access to a variety of software which runs on an Apple IIGS microcomputer. The software covers pre-reading, pre-math, problem solving, and creative expression such as drawing. In addition to the microcomputer, the hardware includes digitizing equipment connected to the computer and a video camera, a voice synthesizer, and an electronic keyboard for music exploration. The goals of the multimedia project are to further extend the literacy rich environment, to help the children make the connection between spoken and written communication, and to provide tools to facilitate the children's creative expression of their ideas.

Through their interactions with content-oriented software such a **Muppetville** (Sunburst) and **Math and Me** (Davidson), the children not only encounter the content but also develop internal representations of the design structure of the software and strategies for moving around within the software and for solving the problems presented. This schema is useful when children encounter new programs. They already have strategies for approaching new software and become very adept at figuring out how new programs might work even though they cannot read the documentation.

Because the computer is set up as a free access learning center, the children usually interact with the computer in pairs or small groups. It is fascinating to listen to the children discuss their options, strategies, and discoveries. When one child discovers a key with a special function or some new aspect of a program, word spreads rapidly through the grapevine. Perhaps more important than the "content" they are covering, the children are learning that they are effective independent learners and communicators. It is very common for the children to discover things they can make the computer do that their teachers have not yet encountered. The children take great pleasure in teaching each other.

As the children intract with "content" oriented programs, they invariably come in contact with text which usually is related to making choices or learning how to operate within the program. As this text is interpreted to the children by an adult or an older child, the children begin to see text as useful and knowing how to read as important to assist them in reaching their own goals.

These four- and five-year old children also enjoy using the computer as a tool. They have particularly enjoyed and benefited from "talking" word processor programs such as **My Words** (Hartley) and **Talking Textwriter** (Scholastic). Both programs require the Echo speech synthesizer. The talking word processor is introduced six to eight weeks after the children begin to explore the sounds of the letters of the alphabet. At first, the children are simply encouraged to explore the sounds the compuuter produced when various combinations of letters are entered. At this point most of the children like to hear the computer say their names, mom, dad, and nonsense letter combinations. In group time the children generate their own lists of words that begin with the focus letter of the week. After a week or two of free exploration with the talking word processor, a teacher writes the words generated by the children during group time on three by five cards. Then the cards are placed next to the computer and the children are shown that, if they type the letters on the cards, the computer will "read" the words. The teacher is nearby to help when necessary but does not direct the children's explorations.

We have found that, although the children are not required to spend any particular amount of time at the computer, almost without exception they choose to work with these "talking" programs. Over a period of three to four weeks last year, a number of children were discovered to have learned many of the words on the cards as sight words. Although this result may be somewhat impressive superficially, we are more excited and encouraged by children's apparent intrinsic curiosity for exploring the realtionship between written and spoken language.

The children also regularly make entries in their journals. They usually draw on paper with markers and dictate their stories to the teacher to write. Toward the end of the school year some children begin to use invented spelling to write their own stories. We also let children know that they may also ask the teacher to type their stories into the talking word processor. So far we have not been overwhelmed with demand for this service. However, we tend to move slowly as we introduce new possibilities. An idea the children are ready for spreads like wildfire. An idea that the children are not ready for drops like a rock. One idea that so far has dropped like a rock is using the talking word processor to "read" unfamiliar words from books. The children have shown some interest, however, in using the talking word processor to type in words from signs like "walk," "no exit," "fire extinguisher," and "stop." While it may be argued that we waste time trying things that do not always work as well as we might hope, we feel we learn a great deal about the children this way. We learn about the children as individuals and also about the age group.

We are continually amazed by the capabilities of the children. Our children are doing many things we would not customarily include in a pre-kindergarten curriculum. We have learned, in a sense, to fit our content into the children's processes. As we observe what the children are doing, we learn ways to incorporate information and experiences into processes the children can already perform with confidence. For example, another area we focus on is the concept of story. The children's progress is evident in their journals. They begin by drawing their pictures and then dictating, primarly labeling, information. Gradually, we begin to see more action in the "story." Eventually, the stories actually have a beginning, a middle, and an end.

To extend the learning of the concept of story, **Explore-a-Story** (D.C. Heath) was incorporated into our program. This software comes with a story, in paperback format, that can be read to the children. The illustrations in the book are duplicated in the software as

computer screens which can be paged through in the same order as the book. As the children select (by clicking with the mouse) various props, scenery, and people on the screen, characters become animated and props and scenery can be moved or eliminated. There is also an area of the program the children can go to which serves as a library of all the props, scenery, and characters used in the story. From this library the children can add items to any scene (screen). This particular feature has generated a great deal of oral language and discussion of stories. For example, one child was working with a screen that had a background of an outdoor scene. Another child said, "Oh, let's have a block party!" The child at the keyboard then added many more characters to the scene to create a party. The group of children at the computer spent about ten minutes talking about all they knew about block parties. It's almost as though these children are using this program as a graphics-based story construction set. Another child has discovered she can begin with a blank background and have a great deal more freedom in constructing her scenes. Of course, her discovery has also spread through the children's grapevine.

The children are also very excited about being able to print out in color the scenes they create. We have suggested that they could also dictate the story that goes with their scene, as they do in their regular journals. The scenes print out in a small and a large size. The large size prints on the top half of a page, leaving the bottom half available for their dictation or invented spelling. There is also a text component to **Explore-a-Story**. This aspect does not appear to be as attractive to four- and five-year old children as the graphics components, but may well be more attractive to older children.

In summary, our children are very comfortable with the computer both as a tutor and a tool. They have little difficulty with the traditional (QWERY) keyboard, the mouse, or figuring out new software. They see the computer as a natural part of their environment. Teachers see the computer as a learning center that attracts both individual children and small groups. This learning center facilitates problem solving, oral language, sharing and turn-taking strategies, and introduces written language in a functional, context-based manner.

References

Explore-a-Story. D.C. Heath & Co., 125 Spring Street, Lexington, MA 02173.

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Muppetville. Sunburst Communications, 39 Washington Avenue, Pleasantville, NY 14850.

My Words. Hartley Courseware, P.O. Box 431, Dimondale, MI 48821.

Talking Textwriter. Scholastic, Inc., 904 Sylvan Avenue, Englewood Cliffs, NJ 07632.

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word processing depends more upon teachers' understanding of the principles of reading and writing processes than upon their being technologists.

In addition to their primary use in composing original texts, word processors can be used in more structured ways to provide direct instruction with particular strategies, as described in the article by Young in this issue. Suggestions include activities for collecting, organizing, and summarizing information, constructing and punctuating coherent texts, and extending vocabulary.

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