Introducing Micro-Computers to Micro-Learners Through Play

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Computers, once available exclusively to wealthy industries, are now rapidly becoming as familiar in preschool and kindergarten classrooms as block and crayons. Articles making claims such as “Learning by Computers at Age 4” and “Computers Preparing Preschoolers for Kindergarten” now permeate the news media. Increasing numbers of child care centers, attempting to maximize public interest in computers, now readily advertise “Computer Tutor” in their literature. “Computer Tutor” is often even listed above other important qualifications such as “certified teachers” and “professional affiliations” of centers.

At present, however, computers appear to offer problems as well as promise in the educational lives of very young children. Problems which included poor quality software (programs that run computers), lack of training in computer use, and the threat that computers may be just another device to keep children from more important activities (especially play) are certainly real concerns for professionals in the child care field.

In spite of drawbacks, however, computers are beginning to show a number of positive benefits for children. In her article, “Computer Programming Abilities of Five-Year-Old Children,” for example, Hines (1983) aptly demonstrated that by using a developmentally-appropriate computer language (LOGO), children could actually design a computer program to solve real problems. In the early elementary grades, computers are also showing a great deal of promise in developing writing abilities of very young children through the use of “word processing” programs (Toch, 1982).

Whether computers will be used with young children to enhance or retard child growth and development will de-
pend to a large extent upon professionals in our field becoming familiar with computers and sharing the problems and promises the computers bring in actual classroom use. That increasing numbers of children will be exposed to computers at an earlier age is no longer in question. Yet little attention appears to be given to prepare children for this technology.

The program at the center described below was an attempt to introduce a group of preschool children to computers through participation in a “Computer Play Center.” Unlike structured attempts observed in classrooms where the teacher sits the child at the computer and begins a litany of computer operation procedures, this center acknowledges the primary source of learning in very young children—PLAY (Holt-Hale, 1983, Gentile and Hoot, 1983, Pellegrini, 1980).

Materials Used in the Center

- The main focus of the center was a “computer” designed from three common boxes. Two simple light panels were designed for the control buttons and powered by a dry cell battery which the children took great joy in connecting and disconnecting when finished. The computer was large enough so that children could get up inside, look through a large opening, and respond to the commands of the “expert” computer operators as they pushed buttons causing lights to flash.

- A number of keyboards were included for the children to explore in hopes of gaining familiarity with keyboards of all types, including an electric typewriter, a standard computer keyboard donated by a local computer company, and a number of working and non-working calculators and pocket calculators.

- A bountiful supply of computer paper was donated from the main computer facility of a local university. This paper was used in the center for typing, developing “programs” to run the “computer,” and art activities.

- A small tape recorder and blank tapes were used by a number of children to record “computer sounds” and things they felt a computer might say when asked to speak.

- Robot costumes made from a variety of small cardboard boxes and ice cream containers painted silver were used to assist in dramatic play.

- Laminated pictures of different types of computers, people using computers, and media related to the themes were included to encourage dramatic play.

- Small robot hand puppets were constructed for use by the children. The cardboard computer monitor was a most popular puppet stage and featured numerous computer themes. (“Computer,” the computer super-hero, was a favorite character manipulated by the children.)

Center Use

Unlike many adults who often approach computer technology with a great deal of hesitancy and uncertainty, the three- to five-year-old children in this classroom undertook their technological exploration with great enthusiasm. The major problem with the center was getting the children to leave for lunch.

After initial exploration, a small group of children were quick to enclose the center with large hollow blocks and declare the center “the Star Wars Ship.” This theme was supported by a number of photos of Darth Vader, C3PO and R2D2 brought for the center. One child climbed inside the computer and the “commander” stood at the controls and gave commands to the computer. The Commander was assisted by a “talking computer” telling him/her which color of button to push. After the Star Wars theme stopped, other children delighted in “being the computer” (the person inside the box) and the “button man.”

The Role of the Teacher

Hoot (1983) has suggested that teachers serve a critical role in supporting educational play in play centers. In using the Computer Play Center, teachers can encourage play by:

1. Serving as Models of Playfulness. Children are quick to pick up on the teacher’s attitudes. If play is to be encouraged, teachers need to support “playfulness” toward content through their actions. One morning, for example, the teacher greeted the children at the door dressed as a robot. After inquiring into the “robot’s” name, children were very interested in role-play activities with the robot dress-up regalia.

2. Regulating Materials. If children are not to be overwhelmed by play centers, it is important for the teacher to both add materials when play begins to wane and remove materials when children are beset with too many choices to engage in constructive dramatic play. We found it useful to limit the materials in this center. For example, when we wanted to see what the children would do with the main computer, we put some of the keyboards and puppets in a storage room.

3. Verbal Stimulator. One goal of the preschool is to develop language abili-