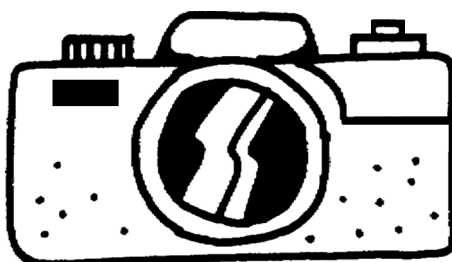# *Technology*

TECHNOLOGY INTRODUCTION

When my dear friend, Sheri Galarza, and I wrote the first edition of *Picture This*, the educational use of technology in the classroom was in its infancy. There were, in fact, only three digital cameras available on the market and they were quite expensive. However, we recognized immediately the educational advantages of using pictures of the children, their activities, and the objects they used to enhance our teaching. Neither of us imagined the explosion in technology that would occur in a few short years. When the book was first published, we gave workshops to show teachers their first glimpses of a digital camera. Now, technology is so pervasive that preschoolers use discarded cell phones and second-generation digital cameras as part of their imaginative pretend play.

What is the educational policy on technology?

As access to computers, educational software, and other forms of digital technology has proliferated, educators have had to evaluate the role of technology in the lives of young children. Researchers have endeavored to identify the benefits and potential hazards of early exposure of young children to technology. Subsequently, professional organizations have developed position statements on the topic. The initial paragraph of the white paper

prepared by the National Association for the Education of Young Children (NAEYC), titled "Technology and Young Children—Ages 3 through 9," adopted April 1996 and modified in 2004, frames the topic appropriately for teachers and caregivers (to view in full, visit the NAEYC Web site at http://www.naeyc.org/about/positions.asp

> Technology plays a significant role in all aspects of American life today, and this role will only increase . . . in the future. . . . As technology becomes easier to use and early childhood software proliferates, young children's use of technology becomes more widespread. Therefore, early childhood educators have a responsibility to critically examine the impact of technology on children and be prepared to use technology to benefit children.

How can technology be used as a teaching tool?

Teachers have become "wired." As technology has become part of everyday life, educators have explored ways to include it in the classroom. What began as a novel add-on to the traditional curriculum has now become an integral part of the classroom. Teachers have experimented with ways to use the computer, and many of the new technologies have become vital teaching tools.

Professional organizations offer information for teachers on the uses of technology on their Web sites and in publications. When one enters the word "technology" into the search box on the National Association for the Education of Young Children Web site (http://www.naeyc.org), for example, a variety of references on technology appear, including a very useful list entitled "Links to Online Resources on Technology as a Learning Tool."

The Computer

In the past decade, engineers have continued to make computer chips faster and their storage capacity vastly greater. Memory sticks that are the size of a piece of gum have more digital memory than many of the computers used to send men to the moon. Access has continued to improve as schools and government agencies have made a commitment to putting computers into classrooms and public libraries. Commonly used computer programs are increasingly more user-friendly and varied in their function than their earlier versions. Software designers have realized the marketing potential for providing educational and gaming software that focuses on young children.

The Internet

What once seemed to be an overly ambitious title has become a reality; we truly have a World Wide Web. This amazing communications vehicle provides classroom teachers with unprecedented access to

information and opportunities to share information with colleagues and with students' families. It's now possible to "google," meaning to search electronically, for information from the basic to the most exotic. High-speed connections have made the transmission of digital still images instantaneous, and digital video is now a common feature of many Internet sites. In fact, real estate agents offer virtual tours of prospective properties, and news agencies broadcast video clips of breaking news events on their Web sites.

Digital Cameras

There has been a technological shift in photography from film-based cameras to digital. Fortunately, while the physical size, memory capacity, ease of use, and lens quality of digital cameras have improved, the cost has come down. The result has been a proliferation in the use and availability of digital cameras. There are even models made specifically for children and plastic toy versions for dramatic play. Digital photography is particularly useful for capturing children's work in process-oriented activities, such as block building or water play. The materials will be put away at the end of the session, but the photographic image has frozen that moment in time for future reference.

Electronic Picture Frame

A nice way to feature classroom happenings is to take random photographs during the day and download them into an electronic picture frame before parents pick up their children at the end of the school day. The frame can be placed next to the sign-out sheet to give the parents a quick overview of the day's activities. Parents can then be encouraged to ask their child about the pictures, recalling what happened during the day as a way to encourage conversation and facilitate both memory and vocabulary development.
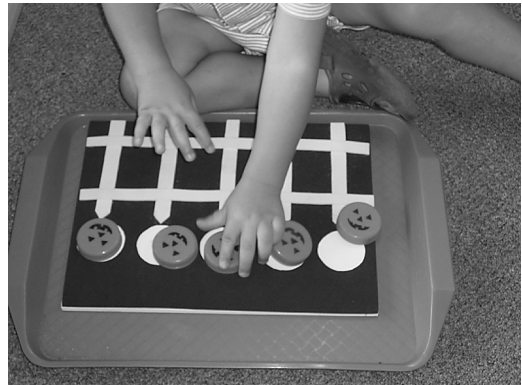
Camera Phones

Even a decade ago, few would have imagined that much of the population, including schoolchildren, would be carrying mobile telephones. Some phones have features that allow the user to not only make calls but also connect to the Internet, check e-mail, and serve as a notepad, address book, clock, calculator, and day planner. This amazing little device may even have a map feature and voice mail. Had we been told before the turn of the millennium that we could use wireless telephones that would also

take digital photographs, play music, send instant messages, and play digital videos we would have scarcely believed it. Amazingly, all of these things are possible today in an object the size of a deck of cards.

Photo Software

Paralleling the popularity of the digital camera has been software development that allows the home user and the professional to manipulate the digital images to create the desired effect. Rather than waiting days to send out film to be processed, the user can take a photo and have it downloaded, sized, edited, and printed in minutes. Even novices can experiment with their unexplored talents as a graphic designer.

Printers

Printer quality has continued to improve as the cost of the printer has come down. Most early childhood classrooms can now afford a color

printer, and some clever teachers include color print cartridges on their school supply and classroom wish lists. The ability to print images immediately is a particularly valuable aspect of the use of new technology with young children, who respond so positively to the immediacy of the feedback it provides. Images of classroom materials and activities can be printed quickly and used to reinforce learning or provide visual cues to classroom rules and routines.

Screen Savers

A simple way to stimulate conversation and encourage recall is to use photographs of class events as the screen saver for the classroom computer. As children notice the images changing, encourage them to label what is seen and to recall what was happening in the class when the photograph was taken.

Scanned Images

The digital scanner is a useful classroom tool for archiving information for later use. When a young child wants to take home artwork, for example, and the teacher needs to retain a copy for the portfolio, both needs can be accommodated by scanning the drawing or painting before the child departs with her picture. The digital image can then be used in a variety of ways.

Clip Art

An array of free and low-cost clip art is available for download from Web sites. For example, the Microsoft site has 150,000 pieces of clip art, photographs, animations, and sounds for free download. Programs such as Art Explosion from Nova Development provide hundreds of thousands of royalty-free illustrations and photographs in all popular file formats for a modest cost.

Presentation Software

Digital images can be imported into presentation software, such as PowerPoint, to highlight instructional concepts, to prepare for parent presentations, or to create integrated individualized portfolios for each child that highlight progress over the school year. Presentations can also be created for training purposes or to share teaching techniques with colleagues.

Once the teacher or caregiver has chosen the initial design for the presentation, students can be included in its preparation. Even young children enjoy being asked to participate in the selection of photographs for a parent night presentation or to provide a quotation for a picture caption.

Publication Software

Digital images greatly enhance the appeal and visual presentation of publications. Formatted publications can be downloaded for software, such as Microsoft Word, to create classroom newsletters, fliers, brochures, invitations, calendars, and note cards. Templates can also be downloaded from the Microsoft site. Once the format has been selected, children can assist with the creation of publications by helping to select the photographs to be used and decide on their placement in the documents.

E-Mail

The increased need for communication appears to have grown with the number of ways to communicate. A photograph that depicts new learning or a special event with a brief note is a thoughtful way to keep parents informed about their child's progress.

A quick and effective way to keep families informed about current classroom events is through quick group e-mail. The few minutes it takes to jot down a brief description of class highlights, or to import a photograph, is rewarded tenfold with the trust it builds with the families that receive these daily missives from school. The same information and images can be printed and displayed in the classroom for family members who pick up their children to view.

Electronic Newsletters

Classroom newsletters are a wonderful way to engage the students and communicate with families, but they are time-consuming to produce and

The Drinking Fountain

By Zeus

"I pushed the button and then I drank water. It was cold."

ZEUS
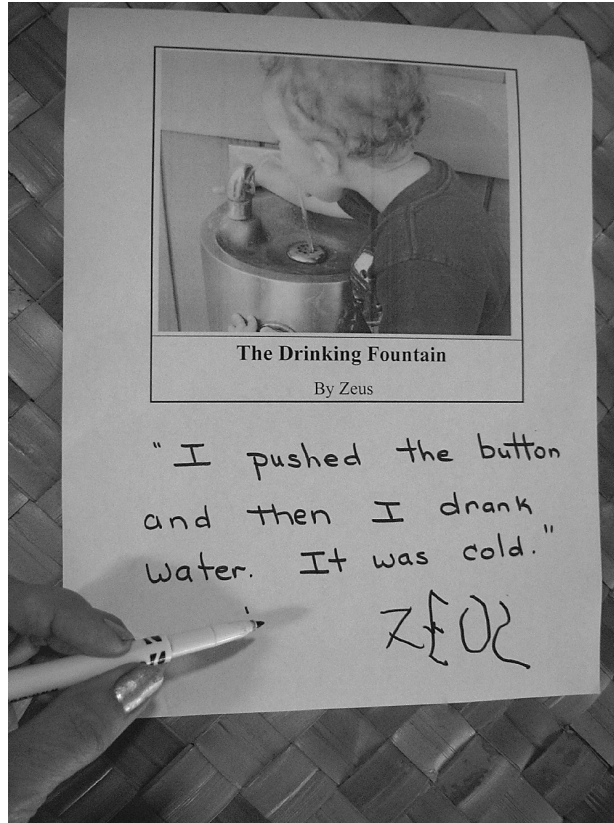
the "news" is often outdated when it is finally delivered. An electronic version of the traditional newsletter is an effective way to provide timely information, highlight upcoming events, celebrate progress, and underscore ways that parents can support their children's learning at home. One technique is to set up a group distribution in a word-processing program with the e-mail addresses of all family members wishing to receive an e-newsletter as an attachment. Once formatted, the master can be used for all future editions. Relevant pictures or graphics can be inserted and text descriptors added before sending the newsletter as an attachment. The electronic version can also be printed and stored in a binder to display at parents' night or shared with the families of prospective students.

Digital Video

Video cameras have been popular for decades, but the shift to digital videos has transformed the medium. Parents and teachers can shoot video, edit the footage, and display it quickly on their computer screens, on their televisions, on large screens via an LCD projector, or shared via the Internet. The ability to capture the buzz of a busy classroom in action presents a treasure trove of possibilities for the creative teacher. Digital video footage is particularly useful as a tool to help children become more aware of the sequence of activities, their own behavior, and varying approaches to negotiation and problem solving. It is also of incomparable value as a tool

Newsletter

Spring 2008

Happy Hands Playgroup News

Reading Is Fundamental Distribution

The March socialization group was a grand success. Children and parents gathered in the conference room for free play. During group time, the children learned the rhyme "Teddy Bear, Teddy Bear, Turn Around" and then practiced with their own bears. They had a chance to make a teddy bear hand puppet and join the teddy beartea party. Before going home, each child was able to select a new book compliments of Reading Is Fundamental.

Page 1 of 4

17

for sharing information with parents. Teacher training, reflective supervision, and staff development are also enhanced when footage of actual classroom events can be analyzed to inform future practices.

An additional feature of most digital video cameras is the capacity to take still shots and to create still frames that can be printed as individual photographs from a video recording.

Video Software

Advances in software have made it possible for a novice to import digital video recordings into an editing program to produce a movie, complete with voice-overs and a music track. Once finalized, the movie can be exported back to the video camera, transferred to VHS videotape, or burned as a DVD. These mini-movies are useful in a variety of ways, from documenting ongoing classroom projects to noting individual student progress over time.

Classroom Webcams

A webcam (Web camera) is a small camera built into, or connected to, a computer, which enables the user to send selected digital images or

continuous live streaming audio and video via the Internet. This technology is used to monitor everything from daily traffic and the weather to real-time activities in the classroom.

Technology now allows family members to watch their children painting at the easel or building skyscrapers with wooden blocks, by way of a webcam transmitting from the classroom to a parent's computer at work or to grandma's house far away. Authorized family or friends need only to log on any time to a secure site to see what the class is doing and how their child is fairing at any given time. While initially intimidating, this technology has the potential to demystify parents as to what happens during the school day and to facilitate communication between home and school.

Student Videoconferencing

All computer users today, even young children, have the greatest access in history to people, places, and events separated by time and distance. Videoconferencing is a technique for connecting students in separate classrooms or school. It requires a webcam connection at each location for the students in remote locations to be connected. Students talk and share projects, questions, and ideas through the webcam that sends their input electronically to a distant location. By setting up a sister class relationship with a school in another location, students can learn about other places, cultures, and activities. For example, children in Hawaii can talk to students in Alaska via a computer videoconference. Before the hookup is established, the teacher facilitates the interaction by helping the children think of questions the group would like to ask their distant friends and information they would like to share about their own lives and interests.

The Virtual Classroom

Children with illness or disabilities that require frequent or prolonged absences from school can stay connected to the classroom via computer. Videoconferencing technology has made it possible for many hospitalized and homebound children to stay connected to their classmates and teacher during part of the school day. A webcam with a microphone is connected to a computer and an Internet connection in both the classroom and in the home or hospital room, allowing back-and-forth communication in real time.

Teacher Videoconferencing

Thanks to technology, the world has gotten smaller. Teachers from distant locations can meet and talk in cyberspace on topics of mutual interest via videoconferencing. One-on-one videoconferencing capabilities over the Internet use webcam technology and can be quite useful to share information and demonstrate techniques with colleagues. Programs such as Windows Live Messenger and iChat offer teachers a virtual meeting place where people can see each other and talk in real time.

Teacher Chats

Teachers from distant locations can share interests and concerns informally with others doing similar work by joining an education-based chat room. A teacher might post a question, for example, about curriculum or a problem she is having with her class and check for written responses from others in an online community who might have suggestions. Homecare providers are able to use chats to communicate electronically with others doing similar work about the unique challenges they face with their particular population. Instructions and graphics for projects also can be shared with colleagues through chats.

Internet Teacher Training

As advances in technology have occurred and teacher trainers have become more comfortable with its uses, more coursework has come online. Many degree programs in education offer courses online, and several programs are designed to utilize online learning for major portions of their training design. Hundreds of sites now offer sample lesson plans and curriculum ideas for classroom teachers. Information is now just a keystroke away. Sites such as TeacherTube.com offer an online site for teachers to locate and share instructional videos.

Class Web Site

One effective way to communicate with families and at the same time introduce young children to technology is to create and use a classroom Web site. It is a useful tool for sharing news or exciting classroom activities and for providing reminders of upcoming events. Some sites are easy to set up and are hosted for free by commercial sites, such as Scholastic.com.

Blogs

A blog (Web log) may be an alterative for educators who are not comfortable with the technology or ready to commit yet to a full Web site. Blogs are easy to set up and use. Some sites, such as edublog.org, are designed specifically for teachers. Blogs began as digital diaries with the latest entries displayed first but now typically include commentary on a particular subject. They can combine text, photographs, clip art and video, podcasts and audio, as well as links to other sites. Blogs can be set up so that family members can leave a message or respond to the teacher's entries.

Another method of creating an electronic newsletter is to set up a blog, featuring classroom events, and then send it via e-mail to families with the blog link.

iPods

The iPod (referring to "portable on demand") and other MP3 players began as portable music players. They are now being used for teaching

and learning. These devices are a convenient way to store music or audio material to use in the classroom. Teachers can download the songs they want to use at circle time, for example, from various CDs or a source such as the iTunes store and arrange them in the order to be played. The ability to order the materials digitally before class eliminates the problem of losing the children's attention while the teacher searches for a desired song. The iPod is also a useful storage device for pictures, projects, and video work in progress; and because it is so portable, the material can be downloaded and worked on from various computers.

Podcasts

Podcasts are collections of digital media files that are distributed over the Internet and can be downloaded to the computer or iPod to be heard or viewed. The educational uses of this technology have increased as the number and variety of downloadable audio and video files have proliferated. Teachers can download audio or video files to bring information into the classroom via a podcast. They are also creating their own multimedia podcast presentations to emphasize classroom content or other information. That information can be sent to interested parties through a podcast feed, which allows the material to be downloaded to the user's computer.

"Smart" Toys

Each year toys are being produced for young children that have embedded computer chips that activate the toy. There is discussion about the usefulness of these "smart" toys during the early childhood years as compared to the more traditional toys, such as blocks and clay. There isn't much debate, however, about the growing availability of electronically activated interactive toys for very young children. Toddlers now come to early childhood education settings as experienced practitioners of toys they can make "go" and are excited by other forms of technology.

What additional considerations should be made when using digital technology?

Consent

When using any digital image of any person, it is important to get consent for its use. Teachers and caregivers are advised to develop a simple photo release form, which delineates the possible use(s) of the pictures. Parents or guardians should be given a range of options for the possible uses of their children's work and photographic representations. They can then select and indicate their approval of specific purposes by initialing or declining and then signing and dating the form. For example, a parent may choose to give consent for photographs to be used in curriculum projects and the child's portfolio but not in a newsletter or classroom

Web site. All children, staff, volunteers, and parents who appear in photographs should have a photo release on file with the program.

Privacy

Schools and child-care facilities should consider the addition of a policy on protection of privacy to the organization's policy and procedures manual. As part of the statement on how the child and family privacy rights will be protected, information should be provided on how digital images will be used and safeguarded.

Teachers and providers need to take particular care when using any image via the Internet. When school personnel choose to have a Web site or use webcams, they need to be sure they have a secure server and provide protected access.