

Foreword

One goal of this book was to allow practitioners to have a voice in what information should be included and their views about technology. We selected Susan Feld to write the foreword because she has worked in the field of early childhood education for three decades and has lived the technology changes in early educational environments. Susan's experiences reflect what most practitioners have and do face as each new generation enters early childhood environments.

-The Editors

Preschool and Technology: A Balancing Act

It is undeniable that technology is here to stay as a tool of instruction and discovery for years to come. As we are advancing technologically, regressing to the old ways of doing things is not an option any more (Abdi, 2009). The chapters in this book are a product of many hours of diligent research and collaborative effort across disciplines and educational experiences. The chapters can promote critical discourse and analytical dialogue on the issue of resources for and applications of technology use in early childhood years. The interdisciplinary authors' efforts provide support for teachers, parents, students and university faculty. The time is here for early childhood professionals to think, reflect and practice technology in their classrooms. As you read each chapter, you should develop a clearer understanding of how technology influences the children entering our schools, the teachers working with these children and the parents of our children.

My observations and experiences in the field of early education support the need for more research and information about technology and young children. I would like to share some of my experiences and reasoning for writing the forward to and support for this work. A director of a preschool is in the unique position of implementing technology into the curriculum and balancing it with developmentally appropriate practice. Parents may demand the inclusion of technology in their child's preschool even when teachers are not proficient with the technology in demand. Although computers have been used in classrooms since the early 1980's it is only recently that their use in preschools has been addressed.

When I began my teaching career three decades ago preschool and technology would have seemed like disparate concepts to link together but today early childhood educators are now scrambling to incorporate the newest technology into the curriculum for our very youngest learners. As the director of preschool serving infants through kindergarten I am in the unique position of being able to create and implement new technology programming and concepts into the curriculum, balancing it with developmentally appropriate practice. In the process I also have to consider the demands of parents who are habitual users of technology in their homes, workplaces and cars. Add to this the concerns of teachers and teacher

assistants, many of whom are uncomfortable with and unfamiliar with the newest technology and you have a dilemma in preschool not seen since the advent of green chalkboards replacing blackboards.

Preschool and technology seem like disparate concepts but educators are now considering how to incorporate technology into the curriculum for our very youngest learners. I remember when the public school where I taught received a grant to buy the first Apple computers but the floppy disc software was no better than an electronic workbook and the electrical outlets in my classroom had to be upgraded to three-prong in order to plug them in. Now as a director of a preschool I am balancing the need for using technology in the classroom with developmentally appropriate practice.

Technology today surrounds us and has a profound effect on how children learn as well as how educators teach. Preschool teachers, looking to integrate a variety of technologies into the curriculum, have been using digital cameras, recorders with headphones, and computers with very young children. These educators are seeing very young children coming to school with a comfortable understanding of technology. Three year old children know how to navigate apps on I-Phones, use the remote to change channels, and play video games. The homes from which our children come are loaded with electronic devices and preschools should reflect the culture of the families they serve. Educators are aware that these children will encounter rapid changes in technology as a part of their lives and there is a need to start now to prepare them for learning expectations in a future where change will be a significant characteristic of literacy and education. Yet the research on the impact of technology on our children's overall development has been slow in coming from the academic community. Is the early use of technology harmful or beneficial? With limited data available, it is our responsibility to balance our technology offerings for young children. What this means in practice is using technology in age appropriate ways and in age appropriate time frames.

The lives of my preschoolers are saturated with technology: mommy is chatting on her iPhone, daddy is posting new baby photos on Facebook, big brother is playing games on the Wii, big sister is following celebrity tweets, and even a quick ride in the car includes viewing a DVD. A position is taken that early childhood educators must learn to embrace technology in their classrooms, recognizing that using their knowledge of developmentally appropriate practice is the key to integrating technology into the preschool curriculum.

Although some experts would recommend little or no exposure to electronic technology in preschool settings, this view is impractical and belies the fact that when used appropriately screen media can enhance the preschool experience. The American Academy of Pediatrics recommends no screen time for children under the age of two. In our school, we follow the AAP recommendations and neither television nor computer screen time is included in the Noah's Ark program for our children under the age of two. For children three years and up, television is rarely used in our preschool classrooms and only when the content is directly related to curriculum. For example, when the Jr-K children were studying nutrition the teacher incorporated a video with a singing & dancing apple. In kindergarten and in Jr-K classrooms computer usage is monitored by an adult at all times. The content is usually reading or math games and children do not have access to the Internet. The Internet access in the classrooms, by teachers only, can be a powerful research tool, but adult guidance is essential to assist young children in finding information and thinking about it critically.

New this year is the use of the I-Pod Touch with our Pre-K three year old children. For the uninitiated, the I-Pod Touch looks just like a cell phone, but it cannot be used for calls. It is actually a mini-computer with games inside. The games are called applications, or apps. The apps we downloaded include a matching game, a shapes puzzle and, my favorite – an animated shofar that when tapped, blows the different

calls to worship! Pre-K three year old children use the I-Pod Touch once a week for 15 – 20 minutes. We have found the I-Pod Touch an effective tool to introduce technology to our youngest learners. It is a tool, another way to deliver information. Since the technology changes more rapidly than we can teach it, our three year olds need to learn how to learn about technology and the I-Pod Touch serves this purpose.

Another aspect of rapidly changing technology is the fact that as new teachers coming out of college are hired, they are more attuned to the use of technology in the classroom. These young teachers have never known life without a cell phone and are passionate about connecting students to technology, not for the use of technology itself, but as another teaching tool. Our veteran teachers are experts with a rich base of knowledge and experience and are enthusiastically learning to use new technologies with which to communicate with parents, set up class web pages and use the Internet as an instant reference tool for curious minds. Teachers also know enough not to assume that all children in our classrooms have computers at home. Although many children have technology in their lives, many others do not. Teachers scaffold knowledge - build upon what a child knows - in all subject areas, even technology.

Although my memory is imprecise about the exact year, I believe the first time I ever saw an Apple computer was in 1985. I was a first grade teacher in a working class neighborhood in a small New Jersey town. My first glimpse of the new Apple II computer was unassembled and in a carton where it remained for several weeks until the school custodian had time to uncrate the components and set them up on the rolling cart, where they sat another few weeks until the school system could hire a technician who knew how to put it together. The school district had made a determination to be on the cutting-edge of the new computer era and purchased Apple II computers including hardware, floppy discs, printers, and rolling carts. No speakers, no mouse, no tower, no Internet, no keyboard (keyboards at that time were part of the console).

The technician turned out to be the school system's A.V. director, who had recently attended a training workshop with the Apple sales rep where he learned not only how to hook up the components but how to train staff as well. If you must ask, A.V. stands for Audio-Visual which is what the technology department was called in the 1970's and 80's, technology being the film projector, overhead projector, and cassette recorder. A.V. folk were considered to be nerds then, as are computer geeks or techies today. My principal selected me to serve as the new computer coordinator since I was the only teacher in the building who knew how to thread the film into the film projector in order to show a movie to the children, thus making me technologically savvy. I was also the youngest staff member, and therefore, the logical choice for learning about and helping to implement any new teaching tools.

The first obstacle encountered was the electrical outlets. The computers needed to be plugged into grounded outlets and our school building, built in the 1930's was ill-equipped to accommodate three prong plugs. Either the Apple sales rep neglected to mention this, or the school system neglected to pay attention. Consequently the school board and administration had to hire an electrician to upgrade the electrical system, but the contract had to be sent out for bids first and this took several more weeks. The computer sat in its carton in the corner of my classroom, collecting dust while the children pestered me daily about when we would be able to uncrate it. At the time this age group of six year olds had no prior knowledge of computers, but they knew it was something new, exciting and special. One little boy's dad has a computer at work and he told me he knew all about computers, if I would only get it out of the box. The only exposure to computers I had at the time was watching an old boyfriend play Asteroids in our favorite saloon.

Finally, new electrical lines were run and mounted, three prong grounded outlets installed, the components were set up on the rolling cart and we plugged it in and turned it on. The next problem was

booting the software. The software of the time was on five inch floppy disks, a data storage medium composed of a disk of thin, flexible (“floppy”) magnetic storage medium sealed in a square plastic carrier lined with fabric to protect the disk from dust and dirt. Today’s computers now have USB flash drives memory cards and networks, but none of that existed in 1985. The floppy disks were to be slipped inside a slot in the hard drive with a little garage door that snapped shut. The content of the software available at the time was similar to workbooks pages simply transferred to floppy disks. The software was produced by book publishing companies and were usually phonics pages, math drills, and practice or language arts activities with multiple choice formats. Only one child at a time could actively use the computer. With a class of 25 children anxiously awaiting a turn, a teacher could not possibly schedule every child to have a turn every day. I had made a big chart hanging on the wall with a list of names and each child put a check next to his name after his turn. So each child usually had about ten minutes of computer time per week. Failure to behave properly would result in loss of computer time. As one might imagine, there were always a few ill-behaved children who would go for weeks without ever having a turn on the computer. Children were not permitted to turn on the computer by themselves, nor were they allowed to eject the floppy disks.

There were some occasional opportunities for word processing, and children could type sentences or stories and then print them out. The printer was enormous and clunky and used wide paper with green and white stripes. The paper was tractor-fed and had little holes along the edges of each side which needed to be precisely lined up onto the sprockets of the printer. The printer only printed in text which was dot-matrix and was not of letter quality, and of course no pictures could be printed.

Something was always going wrong with the computer. The first week we blew a fuse just by running the printer. The printer paper would never print without jamming and I would have to stop teaching a reading group to assist and untangle. Almost daily the software would cease to run properly or lock-up and the system needed to be re-booted every time an error occurred. Each software program had its own particular idiosyncrasy, and if a child hit delete instead of backspace the entire screen would disappear. The accompanying manual did not necessarily coincide with the components and must have been written by Steve Wozniak himself. It was incomprehensible even to the A.V. nerds. My role as the computer coordinator was to assist the teachers with any technological problems they may have encountered. This meant jumping out of my classroom while another teacher watched my class, re-booting their computer and dashing back to my group, who in my absence had either fallen out of their little chairs, decided to empty the pencil sharpener onto the floor, or dumped out the contents of their desk in order to look for a lost paper.

We didn’t know it at the time, but in 1985 while we were attempting to clumsily feed the paper into the printer and un-freeze software programs, the first Internet domain name symbolics.com was registered by Symbolics, a Massachusetts computer company. Later that year Quantum Computer Services was founded, this company later becoming AOL. In 1985 school systems as well as families were beginning to purchase the more affordable personal computers. National advertising encouraged buyers to use the computers for keeping track of financial spending, collecting recipes, and playing games, but these were seldom realized in practice. These computer activities required tedious data entry because very little software was available for personal home use. Buyers would have to be familiar with computer programming which required a significant time commitment.

Both public and private schools were beginning to pour millions of dollars into purchases of computers, pressured by the marketing of the computer companies and stoked by worries of being left behind (Sandberg-Diment). Sandberg-Diment went on to bemoan the “lack of good software and unrealistic

expectations by teacher and administrators concerning the capabilities of the magical micro(computer).” He felt at the time, as many educators do today, that money would better be spent “attracting inspiring and exciting teachers to our schools” instead of “plunging the schools into unknown electronic spheres... which probably... will not improve our instructional facilities one whit.”

Fast forward twenty five years and another *New York Times* writer, Kevin Kelly (2010) may seem to agree with Sandberg-Diment when he stated that technology may help us learn, but it must be summoned only when needed. “Education, at least in the K-12 range, is more about child rearing than knowledge acquisition. And since child rearing is primarily about forming character, instilling values and cultivating habits, it may be the last area to be directly augmented by technology.” Kelly (2010) has twenty five years of tech knowledge past Sandberg-Diment and goes on to note that “technology floods our lives.” Kelly’s (2010) premise is advocating for “technological literacy – the latest in a series of proficiencies children should accumulate in school.” Very young children must master the alphabet, simple number facts, and later, learn to problem solve and think critically, but technological literacy is something different: proficiency with the larger system of our invented world... We need to be literate in the complexities of technology in general, as if it were a second nature. Kelly (2010) admits that “technology will change faster than we can teach it.” This stance is similar to that of Donald Leu, Jr. (2001) who defined being literate as continually changing as new technologies of literacy rapidly appear in an age of information, creating both new opportunities and new challenges for literacy educators... How do we help children learn to learn the new literacies that will continuously merge? Leu (2001) suggested that “literacy is no longer an end point to be achieved... rather a process of continuously learning how to become literate. Many of these new literacies will converge with the Internet.”

Internet technology today as we know it and use on a daily basis could not have been foreseen by Sandberg-Diment who was concerned that computers would never lead to educational improvement. Internet technology has proven to be a vast and powerful tool. Recent worldwide events showcase the power of technology. The same Internet I use to find recipes or keep up with old friends was harnessed last month to topple the government in Tunisia (Shane, 2011). A few weeks later President Hosni Mubarak betrayed his fear of the Internet when he unplugged Egypt’s service. Facebook (Shane, 2001), Twitter, laptops, and smartphones empowered his opponents, exposed his weakness and toppled his regime.

According to Maldonado (2009), today’s average preschooler has been exposed to electronic media since birth. I disagree with Maldonado – they have been exposed to electronic media before birth. During pregnancy young women are surfing on their laptops, texting with their phones, updating their status on Facebook, and tweeting their friends. I will agree with Maldonado (2009) as she noted it is clear that preschoolers are using electronic media adeptly on a daily basis, thus growing up in a media-saturated world.

Technology today surrounds us and has a profound affect on how children learn as well as how educators teach. Preschool teachers, looking to integrate a variety of technologies into the curriculum, for many years have been using digital cameras, tape recorders with headphones, and desk top computers with very young children. These educators are seeing very young children coming to school with a comfortable understanding of technology. Preschool teachers need to be aware of the highly developed levels of knowledge in electronic media that preschoolers bring with them to school (Maldonado, 2009). It is clear that preschoolers are using electronic media adeptly on a daily basis thus growing up in a media-saturated world (Maldonado, 2009). Some of the electronic gadgets and devices used by preschoolers may include: handheld computers such as Game Boy or Nintendo-DS; videogames such as PlayStation

2 or Nintendo Wii; interactive websites such as Starfall.com or Sesame Street.org; electronic media systems such as Leapfrog Leapster or VTech Systems (Maldonado, 2009).

The smartphone is the most pervasive piece of technology in our preschool amongst both parents and staff. During intake interviews I have seen the iPhone employed as a baby sitter or used to distract a toddler. As the prospective parent and I are having a conversation about enrolling the child in our program, I often engage the toddler with puzzles, building blocks, and other developmentally appropriate playthings. I have become quite adept at maintaining an adult conversation while simultaneously entertaining a young child. However, at the slightest whine or utterance, the mom will pop her iPhone into the toddler's hands and I have seen toddlers use the swipe motion to look for their favorite apps with pudgy, yet nimble fingers.

Preschoolers are also adept at using their parent's iPhone to surf the Internet for specific purposes and websites. For example, I was recently engaged in a lively conversation with one of our kindergarten boys about our local NBA team and their winning streak. He is a huge fan and attends many games with his parents. I was discussing with him why I did not want to pay a premium for good seats closer to the court and that I did not like sitting in the cheap seats up on top. He proceeded to take me by the hand to the classroom computer, scooted the mouse around, found NBA.com, clicked on the site for our team, scrolled down, and began to show me how I could purchase first-rate seats for a decent price. When he asked me for my credit card to book the seats, he was awfully disappointed when I demurred and said I had other plans for this particular evening.

If today's preschoolers all come from families who spend time on screens, then we need to adapt them in age appropriate ways to become learning tools. The balance lies in the way the technology is used, not in the technology itself. This book has valuable information for teachers, administrators, and parents. The approach of combining practitioners, researchers, and university faculty add a unique view of technology and the rapidly changing educational environments. As I reflected on my experiences with technology I realized how important it is for all of us to continue to explore, read, and become more technology literate if we are to serve our children.

Susan Feld

Barbara K. Lipman Early Learning Center at Temple Israel, USA 2011

Susan Feld is the Director of the Barbara K. Lipman Early Learning Center Temple Israel in Memphis, Tennessee, USA. She is finishing her Educational Specialist degree in Early Childhood Education. She has been a practicing professional for more than twenty-five years. She has worked with technology in early education since the beginning of the implementation and integration of technology. Her child center is one of the progressive examples of how young children can and do use technology.

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