



Examining Some Common Myths About Computer Use In the Early Years

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It is no wonder that early childhood educators are confused about the value of using computers in their classrooms. Educators, psychologists, technologists, cognitive scientists, and philosophers continue to debate the advantages and disadvantages of using computers in early childhood education (McCarty 2000). Conflicting opinions and professional disagreements have produced a multitude of beliefs that have evolved into full-blown myths. For example the common belief that “it’s okay if children know more about using the computer than the teacher does” does little to promote the potential educational benefits of computers to either teachers or children.

Some myths are so convincing that they become subtle obstacles or obvious barriers to using computers in the early childhood arena. As such they reduce the likelihood that teachers will think of the computer as a natural part of teaching in the early childhood classroom. These myths contribute to teachers’ reluctance to move beyond basic awareness of computers toward integrating computer technology into teaching and learning.

It seems that while society in general has enthusiastically embraced technology, early childhood educators have resisted the outright endorsement of classroom computer use for young children. Perhaps you are one of these teachers, and your belief in several of these myths



causes you to question the appropriateness and value of computers in the education of young children. While some concerns regarding computers are based on reality, others are not. It is important to understand how concerns based on these myths may interfere with the effective and appropriate uses of computers as powerful educational resources for young children *and* for you as their teacher.

The following seven myths have generated the most attention and concern:

1. Computers are easy to use.
2. I might do something to break the computer.
3. It's okay if children know more about computers than teachers do.
4. Computers can provide solutions to any problem encountered in education.
5. All software designated for young children is age appropriate and of high quality.
6. Computers don't foster prosocial interaction, and will overshadow the use of other classroom materials.
7. As long as children are having fun using the computer that is sufficient reason for use by three- and four-year-olds.

Our interest in examining these myths is the result of many discussions with early childhood educators in classroom settings across the country. Teachers' concerns about technology tend to fall into two general categories: (1) concerns about their ability to use computers effectively and (2) concerns about the effects of the computers on young children and their education. The first category focuses on myths that undermine teachers' confidence in acquiring the skills necessary to use computers effectively and the second reflects teachers' need to be assured that using computers with young children is the right thing to do.

This article provides an opportunity for you to confront your concerns about the use of technology in the early childhood classroom. You may find that they are more influenced by myths than by fact. We hope that by examining your concerns and the myths that surround computers, you will be encouraged to become a more effective and proactive computer-using educator.



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Computers are more likely to be valuable instructional tools when teachers are personally comfortable using them.

Most computers today back up files automatically.

Some myths focus on the teacher . . .

Myth 1: Computers are easy to use.

You probably have heard this statement many times: “Look how quickly children learn to use the computer.” We are led to believe that computers are so easy and intuitive to use that anyone can figure them out with a simple trial and error process. You might even believe that everyone knows how to use computers except you.

Why is belief in this myth of the easy-to-use computer so damaging? Perhaps it is because this perception may make anyone who isn’t an immediate success with the computer feel a little incompetent; this can undermine confidence and diminish interest in learning how to use computers. This is particularly unfortunate because, for many people, computer use is not an easy, effortless experience. If computers really were that easy to use, then wouldn’t just one training session magically transform any teacher into an effective computer-user?

Many administrators do not understand how teachers best learn technology and provide little or no professional development or technology support. A one-time computer session can only begin the learning process necessary for teachers to understand how technology can be effectively integrated into instructional activities. Research confirms that computers are more likely to be valuable instructional tools when teachers are personally comfortable using them (McCarty 2000). Helping teachers reach their comfort and skill levels requires continuing staff development and support. With professional development opportunities for teachers, technology can meet the promise of its potential to enhance the teaching/learning process.

Myth 2: I might do something that could break the computer.

Recently a teacher shared this overriding concern: “I’m afraid I’ll press a key, crash the software, and lose all my important work!” It is true that computers can be unpredictable, and just when you begin to feel comfortable with the computer something happens that threatens your confidence.

However most computers today back up files automatically. This process creates a copy of your work, and in the event of system failure, your files are easily retrieved. It is still prudent to get into the habit of saving your work frequently in any software program you use.

The point is that computers are fairly robust, fail-safe machines. Many schools have protections on computers that prevent anyone from accessing, deleting, or changing the files you create or the files needed to run your computer software.

It is the teacher's knowledge and skills about how to use the technology that makes the difference, not the technology itself.

**Myth 3:
It's okay if children know more about the computers than teachers do.**

According to this myth children are intuitively computer competent and have an inexplicable, innate ability to use the computer and learn new software. Observations of children often reinforce this notion and encourage teachers not to learn more about the use of technology in education. This myth shortchanges the teacher and the children. When teachers feel they don't need to be familiar with computers or engaged in the process of helping children reflect on what they are learning while using the computer, the value of the technology is seriously diminished.

Since the early days of classroom computer use, researchers and staff development specialists have underscored that the teacher is key to effective educational use of technology (MOBIUS Corporation 1990, 1994; Hohmann 1994; Wright & Thouvenelle 1996; Bewick 2000; Sarama & Clements 2001; Thouvenelle & Bewick 2003). A teacher's computer proficiency can have a direct impact on how effectively children's learning needs are met through technology. Additionally, computers can provide teachers with more effective and efficient ways to manage and monitor instruction.

Some computer applications can help teachers develop successful strategies to motivate and individualize, assess and plan, stimulate family involvement, and even link homes with schools. However it is the teacher's knowledge and skills about how to use the technology that makes the difference, not the technology itself.



Another result of this myth is the negative impact on teachers' confidence to master new teaching tools and methods (Wheatley 2003). Regrettably, many teachers have no choice about how to acquire the skills they need and must fend for themselves. This trial-and-error learning often forces teachers to extend themselves far beyond their technical capabilities. This can lead teachers to give up on becoming skillful computer users and to continue using the computer as a reward for good behavior or, worse yet, as an electronic babysitter. This approach to computer use seriously undermines the teaching profession, and limits the enormous

potential of computers in the teaching/learning process.

Some myths have had a negative impact on children's learning . . .

Computers cannot be a quick fix option for education.

Colorful graphics, cute animation, and musical tunes may distract even highly informed educators from critically reviewing content and underlying objectives.

Myth #4:

Computers can provide solutions to any problem encountered in education.

Some individuals may assume computers are a quick fix for all of education's ills in part because the media insists technology offers fast and easy solutions to most problems. Such thinking appears to support the conclusion that applying technology to problems in education will yield dramatic and positive results.

While computers can play a positive role, the successful use of computers is in no way an automatic process, nor one that happens quickly or inexpensively. The thoughtful and advanced planning necessary for a responsible investment in technology includes selection and acquisition of appropriate hardware and software, staff development and ongoing support, and funds for the other costs associated with implementing the plan. These requirements mean that computers cannot be a quick-fix option for education. Complex school-based problems will not be solved simply by installing additional or faster computers.

Myth #5:

All software designated for young children is age appropriate and of high quality.

It would be terrific if this myth was fact, but it is one of the most serious fallacies about the use of technology with young children. Because teachers are less than confident about their own computer skills, they avoid critically evaluating educational software. Some teachers may believe that they do not have the background to make effective assessments, and are satisfied if children seem to enjoy the software offered. To identify the real value of a software program, teachers need to ask a basic question, "Does this software program help create learning opportunities that did not exist without it?"

Some teachers purchase software without asking questions or really understanding the implications of children's interactive use of the program. They fail to examine the educational content or to carefully consider the implicit messages communicated during use of the software. Colorful graphics, cute animation, and musical tunes may distract even highly informed educators from critically reviewing content and underlying objectives.

Many users are seduced by the interactive nature of the software. For example, when clicking on a "hot spot" (a link to a multimedia segment in the software) there is an immediate reward with animation and musical notes. "How cute!" we exclaim. However, we need to consider the effect of this interruption to the flow of the story from

the child's perspective. Does hearing a buzz saw and the thud of a falling tree really add to the unfolding story sequence of *Peter Rabbit*? How and what does this communicate to children?

How do these cute asides fit into a child's construction of the notion of story sequence and plot? Perhaps these digressions foster lack of focus and distractibility for youngsters who already have such tendencies. Further, how does this interruption affect the comprehension of the plot, action, and characters? Further research into children's use of such software programs and their effect on learning may provide answers to these questions.

Initial research on the impact of computer use points in the direction of children's increased abilities to multitask at the risk of their development of a deeper understanding of certain concepts such as story theme, plot, and sequence. Further, multitasking may interfere with the development of appropriate thought processes including perspective taking, reflection, and metacognition (Carpenter 2000).

Additionally, teachers need to be aware of implicit messages that are communicated through software. For example, messages might encourage a child to believe that if you don't like something you've created or encountered, you can just destroy it. This "blow it up" metaphor in software advocates destroying a problem rather than trying to resolve it. A popular drawing program actually permits children to explode a firework bomb to destroy their work. The metaphor of recycling would be a more appropriate message. Some software uses cartoons that portray belittling and disrespectful stereotypes of gender, cultural diversity, and differing abilities. Such depictions send implicit, undesirable messages. They are not only inappropriate, but more importantly, fail to promote social and emotional sensitivity and responsibility in the early years.

Many teachers carefully and consciously collect diverse sets of picture books that sensitively represent the variety of cultures, family backgrounds, languages, and ages in the community. It's both surprising and disappointing to find that the software programs selected by these same teachers might not reflect the same sensitivity. We wouldn't purchase books that include gratuitous violence or stereotypes; software that includes negative images or messages is also unacceptable.

Selecting appropriate software is critical to supporting children's active learning. Before purchasing "edutainment" software teachers must be sure to examine the underlying educational content, format, and features. Does the software program offer something important for young children, or is the experience something that simply looks good? Teachers must apply their professional judgment to software just as they would to other instructional materials.



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Computer interactions cannot produce the same result as physically constructing a tall block tower or measuring and pouring grainy, dusty sand from a pail into another colorful container.



**Myth 6:
Computers don't foster prosocial interaction, and will overshadow the use of other classroom materials.**

This myth implies that some children will spend so much time at the computer that they will become antisocial and fail to develop critical communication and interaction skills. There is no research evidence that even begins to suggest this.

A well-designed computer center can promote almost as much social interaction as dramatic play and for some children it offers a unique medium that taps their ability to creatively collaborate with their peers (Anderson, Hilton, & Wouden-Miller, in press). Guidelines for computer use in the early childhood classroom encourage social interactions. For example, it is recommended that two children work together rather than alone. Research has confirmed that for many children the computer is a catalyst for information sharing, language development, and decision making (Wright 1994; Haugland & Wright 1997; Sarama & Clements 2001; Fischer & Gillespie 2003). Some quality early childhood software programs are specifically designed to elicit, encourage, and extend young children's communication and collaboration (Davidson & Wright 1994; Wright 1994).

There is no threat that computers will replace classic classroom teaching methods and materials. Computer interactions cannot produce the same result as physically constructing a tall block tower or measuring and pouring grainy, dusty sand from a pail into another colorful container. No sophisticated software program has the capacity to replace finger-painting with thick, cool paint.

Traditional activities like block construction, sand and water play, and easel painting became classics because children use these multisensory experiences to develop and practice beginning concepts and skills (Thouvenelle & Bewick 2003). Computers do not undermine children's learning but, to the contrary, they can enhance, extend, and augment their learning experiences.

**Myth 7:
As long as children are having fun using the computer, that is sufficient reason for use by three- and four-year-olds.**

This myth negates the use of the computer as a purposeful learning tool. The computer then becomes a rather poor substitute for other more valued classroom materials. As addressed in myth 3, there is a great danger in dismissing the proven strengths of appropriate and skillful computer use, instead settling for an electronic babysitter. This type of computer use disregards what

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teachers value and support most in early childhood education—the healthy construction of knowledge.

This myth also dismisses the importance of developing computer awareness and basic computer literacy skills (understanding how computers can be used) as early as the preschool level. Observations in early childhood programs across the country have strongly supported the importance of early computer awareness/literacy.

Wheatley (2003) has observed preschool children with and without computer experience and investigated the long-term affect into the elementary grades. There were no immediate or startling differences between the users and non-users at the preschool level. However, data confirmed noticeable positive differences for the second-graders who had the opportunity to use computers appropriately when they were preschoolers as compared to the second-graders who did not have the opportunity (Wheatley 2003). Children at the second grade level exhibited increased comfort and facility in using computers and greater understanding of how to use computers in a more purposeful way in their learning.

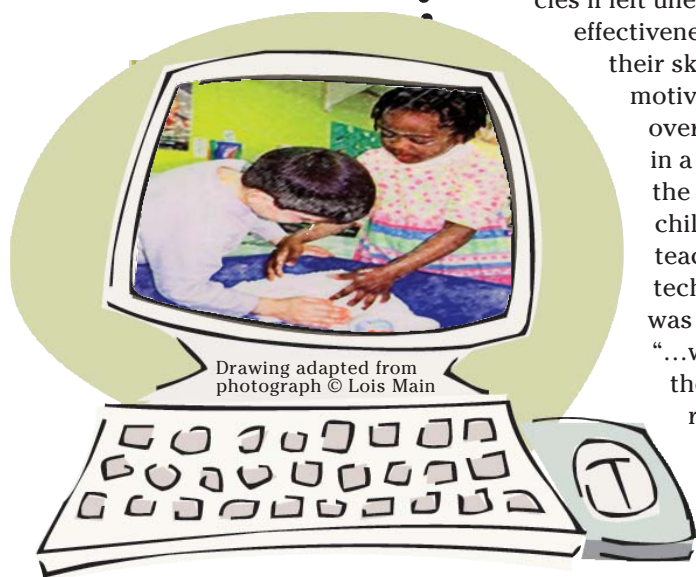
Conclusion

It is not difficult to see how these myths can influence teachers' beliefs. Unfortunately such beliefs can become self-fulfilling prophecies if left unexamined. For example, when teachers doubt the effectiveness of using computers wisely, or hesitate to develop their skill at integrating technology into instruction, their motivation and performance can suffer. Teachers can overcome these self-fulfilling prophecies by participating in a dialogue in which our collective understanding of the technology and its relationship to educating young children continues to evolve and mature. Well-prepared teachers, who recognize the power and limitations of technology, are needed now more than ever. This need was described almost 20 years ago in *Megatrends* "...whenever new technology is introduced into society, there must be a counterbalancing human response...the more high tech [it is], the more high touch [is needed]" (Naisbitt 1982, 24).

The facts can provide the proper perspective from which to reevaluate our role in using computers as tools for teaching and learning. As educators we need to understand how modern technologies can help us better meet the social, physical, and learning needs of young children. No myth should be allowed to cloud our vision or prevent our use of effective tools.

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