

# Playing with Technology: Is it All Bad?

*Technology and Play: What do you need to know?*

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Play is arguably the most important and fundamental experience that children can have. However, the type of experiences that children have and the types of play they engage in is changing. Technology now plays a very large role in the way children of all ages play. From computers to video games to television to battery-operated toys, play is not what it used to be. Children are spending large amounts of time in front of televisions and computer screens which leaves less time for them to engage in dramatic, constructive or outdoor play (Slutsky, DeShelter, & Slutsky, 2013). Children are not to blame for this as there are more television shows geared for children of all ages with new content added weekly. There is even now a channel for babies! Along with the television content, children also have tablets, smart phones, and video games that cut into their play experiences. The greatest challenge for adults is that many kids are opting to play with technological devices rather than engaging in traditional forms of play.

**Don't be afraid of  
technology.**

Research on the subject of technology, however, is quite mixed, showing both negative and positive results. Johnson and Christie (2009) explain that technology is here to stay so we need to figure out how to “maximize the positive consequences of these new media so that they enrich rather than hinder children’s play experiences” (p. 285). While there is concern that children who play with computers, tablets, and smart phones are isolated from their peers, computer play can actually encourage social interactions. Children will often observe

one another and make helpful suggestions or comments (Chen, 2002).

## **Making the Most of Technology**

Children want access to technology, so as parents and teachers, we must figure out the best ways to present it to them. Computers are a popular form of technology for children as young as age three. With that in mind, computer games should be problem-solving oriented and open-ended. They should provide children choices and opportunities to explore and use their curiosity. Closed-ended games limit children’s decision making skills and do not allow for them to take initiative in their thoughts (Fischer & Gillespie, 2003).

Children will bring to life what they see on the computer screen, thus the content they explore on the computer can be used to help encourage creative and imaginary play (Brooker & Siraj-Blatchford, 2002). Some computer games encourage this type of creativity and imagination by having them build things such as aquariums and amusement parks. These types of games can be pro-social and educational. Children have to figure out how to keep them up and running by making a profit with the amusement park, or whatever else it is they are building. Younger children can use these games to “promote learning, positive play experiences and development. Parental guidance is required so that such content does not exceed acceptable boundaries” (Johnson & Christie, 2009, p. 286).

Children’s play is also changing with the advent of new technology in toys. Digital toys can help to promote different kinds of play as well as encouraging traditional play, especially dramatic and constructive play. Digital toys are those that use technology and are battery operated. They may contain computer chips to help them talk or act in certain ways (Johnson & Christie, 2009).

While more research is needed on the effects of digital toys, Levin and Rosenquest (2001) found electronic toys to be more closed-ended when it comes to play. This can result in less creative play due to the fact that these toys tend to do the talking for the child. With toys such as talking mobile phones, talking dolls and toys that play music by pushing a button, creative play is reduced considerably. The key is to make sure the technology in the toy is not overpowering and still allows the child to engage in play creatively and constructively. Technology is okay as long as the child is still the one manipulating the object in the play episode.

Bergen (2004) found that there was no difference in how children played even when technology was present in a toy. In her research study, Bergen observed preschoolers playing with rescue heroes. Some of the rescue heroes talked and made noise while the others were traditional action figures. She found no difference in the way the children played with the two types of toys. The children who played with the talking action figures still used language narratives similar to those of the children who were playing with the non-talking toys. She discovered that the children took control of the play either way and that the two groups of children did not differ in the types of language and actions they used. Parents and teachers can observe how the toys are used during play. If children are overly dependent on the technology element in a given toy, they can be gently redirected to think about ways to play with that toy differently or consider what other sounds the toy can make. This will not limit the play, but potentially open it up for the children if they rely too much



Photo by Nancy P. Alexander

*Technology can provide opportunities for social interaction.*

on the built-in sounds and abilities of the toy.

Research on well designed digital games shows that these devices can provide fun and interactive experiences that can help “young children’s learning, cognitive development, skill building, social interactions, physical activity and healthy behaviors” (Lieberman, Fisk, & Biely, 2009, p. 299). However, when the games are not well designed they can lead to fear, hostility and aggression; stereotyped characters can lead to stereotyped beliefs; time spent playing these games could have been better spent in play and physical interaction (Lieberman et al., 2009).

### **It’s All About the Quality!**

Children ages 3-6 have a growing number of digital toys available to them. As a parent or teacher, look through the number of toys that your children or students currently interact with daily. I think you will be surprised at how high that number is. Children today have access to hand-held devices, electronic toys, computers, tablets and electronic

learning systems. It is important to look at the effect these toys have on children and how they should be designed for this age group (Lieberman et al., 2009).

**Quality is a key.**

It has been found that well designed games can provide positive experiences that foster children’s learning and development whereas poorly designed toys can be time-wasting activities that do not do much to contribute to their learning and development. These poorly designed games are often attributed to obesity and low physical activity (Thai, Lowenstein, Ching, & Rejeski, 2009; Epstein et al., 2008; Vandewater et al., 2007). Very poorly designed games and toys can provide significant harm. These games often teach aggressive behavior, instill fear and anxiety, condone

gender and ethnic stereotypes, and encourage poor health habits (Calvert & Wilson, 2008; Christakis & Zimmerman, 2009). More research is needed to determine if there is a correlation between toy design and outcomes.

## The Problems with Too Much Technology

Susan Linn (2009) argues that too much screen time is taking away from the critically important imaginary play of children. She explains that play is very important in terms of children's health and well-being. The American Academy of Pediatrics (n.d.) recommends no screen time of any sort for children under the age of 2. Limited screen time can be somewhat beneficial, as long as it is being monitored. While screen time is not as beneficial as books, it can be a beginning point for some creative play (Linn, 2009). According to Linn (2009), screen time for children is so different now than it was 20 or 30 years ago. Back then there was limited access to television, with not very many shows for children on the air. Children would watch something once and then bring what they learned into their play. Children had to play. Sitting and watching television for hours was not a choice. To keep alive their memories of the shows and movies they loved, children would bring those beloved characters to life in their imaginary play (Linn, 2009).

It used to be that children only had access to one television with very few channels to watch shows. Now, children have cell phones, mp3 players, DVD players in their family car, computers and even televisions in shopping carts. With all of this screen time available, children are

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losing out on so many opportunities to engage in the real world.

Linn (2009) described a very compelling example of two families in a restaurant. One of the families had a portable DVD player with them, which their child used for the entire time they were in the restaurant. While the child watched a DVD and ate, the parents were able to enjoy a nice, quiet dinner out. The other family did not engage their child with a technological distractor and had to keep their son occupied. The child was loud and quickly got bored with sitting in his high chair. The parents took turns walking around the restaurant with him.

**Balance technology with non-technology play.**

While the family with the DVD player had a peaceful and calmer dining experience, the family without the DVD player gave their child many more learning experiences. While walking around the restaurant, they discussed with him what he was seeing in a pastry case. He even took a spoon he was carrying around with him and pretended to feed his mom. With his parents' help, the child used the restaurant to explore new vocabulary, colors, spatial concepts and make-believe. In addition, the child had an opportunity to further bond with his parents through social interaction. As Linn states, the child with the DVD player was given none of these experiences. He was taught to expect to be entertained, that it is boring to interact with his family, to look at

a screen for stimulation rather than the environment and that eating is something to do while also engaging in other things.

## Positive Aspects of Technology

Yelland (2011) states that play is synonymous with learning in early childhood. Many early childhood programs are advertised as being play based and developmentally appropriate. Yelland further explains that it is essential for teachers to rethink play in today's technological society in order to provide a richer learning environment. This can be done in part by adding technology into the classroom. Adding technology provides the opportunity to create meaning making, extending communications and interactions, which are important to playful explorations.

Including technology in traditional play areas/centers, such as blocks, can enable and extend playful explorations. Yelland (2011) tells of a young boy, George, and his love for building with blocks. He would build elaborate plans in drawings and on a computer with help from adults. George also used a digital camera to document his creations. With this camera, he made a zoo out of Duplo blocks and created a short animation in which the animals moved. This was done with the help of his teacher when he first started school. This is a positive example of how teacher assistance and interaction allowed a child to use his full potential and better articulate his thoughts and ideas. Technology in this episode was used to help the child extend his thinking and provided a more robust learning experience that added to his interests.



Photo by Bob Ebbesen

*Technology-based activities should be balanced with non-technology activities.*

Yelland (2011) indicates that some researchers question this type of play where there is so much help and interaction from the teacher. Their belief is that “children need to play in the real world, with actual objects and in materials that are tactile and tangible, with minimal intervention between the teacher” (p. 7). Yelland continues to highlight that:

“In playful explorations not only are new technologies part of a repertoire of experiences for young children’s learning but the teacher is able to scaffold this learning so that it is

articulated and represented by the children in a variety of modes. In this way playful explorations provide evidence of children’s multimodal learning and encourage the use of a variety of media and resources that are part of this learning as well as being artifacts of the learning process.” (p.8)

Lieberman et al. (2009) found that digital media can be effective in helping children ages 3-6 with language and reading, mathematics, creativity and learning, cognitive skills and collaborative learning and

motivation to learn. There are many games that teach children reading, letter recognition, word building and even learning a second language. It has been found that the use of well-designed computer games and activities can improve children’s skills in abstract thinking, reflective thinking, analyzing and evaluating information (Klein, Nir-Gal, & Darom, 2000). Research has shown that digital media can be more effective than traditional methods for teaching cognitive skills (Lieberman et al, 2009).

Media can also foster social skills. Sharing technology like computers in schools can help children learn collaboration, cooperation and social interaction skills. Researchers found that pairing children on computers helped promote sharing, cooperation, turn taking and assistance to each other as they explored the technology and its content (Bergen, Ford & Hess, 1993; Lau, Higgins, Gelfer, Hong, & Miller, 2005; Martin & Forsbach-Rothman, 2004).

Children using digital media and technology have a higher desire to learn (Bergen et al., 1993). High levels of interest and focus on learning is present while children engage in computer learning activities, and these do not fade away over time (Bergen et al., 1993). Children gravitate toward technology that has become easier for them to navigate with the introduction of tablets, iPods and smart phones. Preschool children with ADHD tend to be more attentive when they are engaged in computer-based learning. This could be because they receive immediate feedback on their performance, so there is no need for their attention to wander (Shute & Miksad, 1997).

More research is needed to understand the full effects of children

learning though technology. Lieberman et al. (2009) explain that studies focusing on the comparison of different types of media are difficult to control. Therefore, it is difficult to understand why one environment may be more effective than the other. Lieberman et al. (2009) state that it may be more beneficial to look at “different kinds of learning outcomes that depend on the kinds of learning each format tends to encourage and support the best” (p. 278).

While there has been mixed research on children’s use of technology, there is no doubt that technology is here to stay. Schools are looking for new ways to bridge technology and learning in the classroom and how to move traditional learning content, including books, to digital formats. Such changes to education are important to research, as they will directly impact the play and learning experiences of children in the immediate future. Children born in the past decade are digital natives and are well versed in the usage of computers, tablets, iPods and smart phones. It is important for parents and teachers to understand how children use technology so they can use it to help scaffold children’s learning.

## Implications for Education

Should we be worried about the large influx of technology into the lives of young children? Will the preference to integrate technology into their play limit children’s social, emotional, and physical development? These are important issues to consider for parents and teachers as technology innovations become even more enticing for children. Not all technology is negative as it can provide enriching experiences through interactive books and mathematical games that

### Strategies to Balance Technology with More Traditional Play Experiences

- Provide a balanced play experience. For each 30 minutes a child plays with technology, provide that much time to play with traditional non-digitized toys. Mix in outdoor play experiences. With active and busy lives that parents and children have, outdoor play is not always a daily option. If that is the case, be sure to schedule some time for children to play outside or visit a park.
- It is easy to allow technology to occupy children’s social time but be proactive in what the child does during that time. Experiences should focus on learning. When learning on technology can also be done through traditional manipulatives, provide those as well so the child understands how what is learned on screen can also be accomplished outside of it.
- Look for games and apps that are appropriate for your child. Play the games with them. Scaffold learning during this time as you would when engaging in non-technology play.
- Don’t be afraid of technology. Technology has much to offer to children and, if used in moderation along with other forms of play, can be very enriching.

can be uploaded to tablets and smart phones for free or for as little as a few dollars. The biggest question is how much time should children be allowed to spend on these technologies even if they are educational in nature? Screen time takes away from social playtime, and parents and teachers must balance technology with non-technology play.

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interests focusing on the Reggio Emilia approach, and children's use of technology during play.

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