Enhancing Children's Learning from Digital Media

Sandra L. Calvert,  Professor & Chair

Department of Psychology, Georgetown University

Director, Children' Digital Media Center

Digital media provide multiple opportunities for parents to engage their children in learning experiences.  One of the keys to success is the use of scaffolds by parents as they work with their children to master the content and the digital interface. There is considerable controversy in the United States about whether or not children can learn anything of value from a screen before age two.  Therefore, I am going to focus my comments on children above age two.

*The research base*. Children consume certain media just as they do foods.  Some media diets are healthier than others.  For instance, preschool-aged children who often viewed educational television programs like *Sesame Street* and *Mister Rogers' Neighborhood* were better prepared at school entry (Wright et al., 2001). Children learn basic skills such as their alphabet and how to count from educational programs (Ball & Bogatz, 1970; Bogatz & Ball, 1971) as well as prosocial skills such as learning to wait (i.e., delay of gratification) which can be useful in scholastic situations (Friedrich & Stein, 1975). Similar beneficial findings have been demonstrated for more recent educational television programs like *Blue's Clues*, particularly over multiple viewings of the same program (Crawley et al., 1999).

Children who are exposed to educational television programs during the preschool years also

had better grades and were more creative years later when they were high school students (Anderson et al, 2001). The latter findings suggest that early trajectories are set in motion that can lead to long-term gains when children view educational television programs during the preschool years.

Although the kind of program being viewed is important, a key research finding is that young children learn best from media when an adult is involved with them during the viewing experience. Preschool-aged children have considerable problems in understanding what the central parts of a program are, making it difficult for them to extract educational messages. Adults who view with children help them understand the message in two ways: 1) by verbally labeling the key program messages, and 2) by acting out or role playing the important story messages. Verbal labels are particularly useful in helping girls understand plot-relevant information. Role play works especially well in helping young boys translate prosocial messages into their own actions (Friedrich & Stein, 1975). I built on this technique in a computer game where content was presented via a story with pauses built in for preschool-aged children to say the target word; by doing so, I elicited an early learning strategy: naming an object (Calvert, 1991).

Online digital technologies often provide interactive experiences for children through the use of stories and games about popular television characters. When doing these kinds of activities, it is important that children be engaged, interested, and attentive. One way to

foster attention and engagement is by letting children control the mouse. Research demonstrates that preschool-aged children lose interest in a computer story over time when an adult controls the mouse, but that they retain interest when the child has control of the mouse (Calvert, Strong & Gallagher, 2005).

Parents alter their own language when interacting with their children during computer interactions. For instance, when reading a computer story together, children who have better executive functioning skills take control of the mouse, and the parents spend more time coaching their children about how to use the mouse. By contrast, children who have poorer executive functioning skills generally do not take control of the mouse; in these situations, parents spend more time talking with their children about the computer story (Lauricella, Barr & Calvert, 2008).

*How to enhance children's learning from digital media.* Building on the research findings, parents can assist their child in media interactions in several ways. Parents should initially select educational programs. Selecting educational videos and computer programs involves being an informed parent. Look for programs that are traditionally associated with educational content. PBS and Nickelodeon, for instance, are known for their educational programs in the United States. Look to see if there are educational consultants who helped create the material. When there are educational consultants, there will typically be a target age range for the product. Make sure that your child falls into that target range. Read the

learning goals of the video or a computer program and be sure that you emphasize that

lesson. See if videos also have materials online to help emphasize the lesson.  A parent

section of a website is a good sign, particularly if it suggests additional activities to help your

child transfer the lessons of the video content to real-life situations.   Most importantly,

choose educational programs that your child likes. Be patient if your child wants to return to

the same activity over and over. Repetition helps them master the content, even if it becomes

a bit boring for the adult.

While parents may be tempted to leave young children engaged with an educational

television or computer program while they do another activity like cook dinner, learning is

always greatest when the parent works with young children to master educational tasks.

Create spaces in the day so that parents and children can master content and create novel

approaches to the interactive experiences that are now part of everyday life. For

comprehension of television, videos, and computer stories, parents can view or interact with

their children as they master the content, using role playing and verbal labeling to help their

child get the message.

Although children are more motivated when they are in control of the computer, the

use of the mouse is not easy for children because of the motor control skills needed to move

the cursor.  Parents can assist their child initially by putting their hand on top of their child's

hand and guiding them in the clicking process. As the child's skills improve, let the child use

the mouse alone to click and drag the content.  Some websites, such as Nickelodeon's

nickjr.com, have many fun activities that are designed to teach young children how to click

and drag content. Too much clicking by children, however, can interfere with story

comprehension if children ignore the story. In this case, parents can take turns with their

child, reading the story and then encouraging their child to use the mouse.

*Conclusion.*  Digital media allow your child to create as they learn.  Take advantage

of the experiences that these new kinds of learning opportunities afford, and your child will

be engaged and learn in a way that amuses as well as educates.

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