

The Impacts of Media Exposure on Child Development

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Abstract

Technological advancements have skyrocketed in the last few decades, leading to increased use of media and screens within the home and on the go. Research supports that social interaction and active environmental participation is necessary for development in several areas. This Capstone reviews the evidence on the impacts of screen media on language, cognitive, and motor development, and discusses possible modifications to screen usage that can be implemented to facilitate better outcomes in developmental areas.

Background

- In 2006, 61% of infants 12 months and under were exposed to television at least 1 hour a day and 88% of 2-3-year-olds were exposed to at least 2 hours a day
- By 2009, children spent 2-3 hours a day watching television, with up to 7 hours of background exposure throughout the day (Christakis, 2009)
- Screen time exposure has kept increasing throughout the years
- Debate on the impacts of screen time on child development is ongoing
- Some of the arguments suggest that:
 - (i) Overexposure to media can lead to deficits in cognitive, linguistic, and motor development
 - (ii) There are barriers that keep screen time from being an effective “teacher”

Purpose

The purpose of this review was to explore the evidence on the impacts to areas of development potentially caused by screen media exposure, the barriers to learning that screen media present, and suggestions for improving children’s interaction with screens to facilitate appropriate development.

Detrimental Effects of Screen Time

- **Language**
 - Deficits in language learning, especially in social contexts (Weisburg et al., 2010; Zosh et al., 2013)
 - Language delays in children between 15-35 months exposed to 181.1 minutes per day of screen time (Lin, Cherng, Chen, Chen, & Yang, 2015)
 - Especially in children under 2, language deficits occurred as a result of overexposure to screen time
 - Media does not provide an effective language scaffold
- **Cognition**
 - For every hour of television watched before age 3, a deficit could be correlated in reading comprehension and memory (Christakis, 2009)
 - Time spent watching television and cognitive development inversely correlated, as measured by the Bayley Scales of Infant and Toddler Development (Tomopoulos, 2010)
 - 75 children under the age of 2 who watched 67.4 minutes of television a day on average performed more poorly on the Bayley than their same-aged counterparts not exposed to so much screen time (Lin et al., 2015)
 - Educational television may improve school readiness in kindergarten-aged children (Anderson & Hanson, 2010); these children were from low SES homes



- **Motor Skills**
 - Closely related to language and cognitive development
 - Children display less ambulation, talking, and object manipulation while watching television than during free play (Gadberry, 1974)
 - Motor development delayed in children younger than 2 years who were exposed to 67.4+ minutes of television a day (Lin et al., 2015)
 - Participation in large amounts of screen time limits time that might otherwise be spent on exploration, and physical manipulation of the environment, leading to fewer gains in all areas of development

Barriers to Screen Time Effectiveness

- **Memory and Transfer Deficit**
 - Children have not developed the memory specificity or flexibility to learn from screen images appropriately (Barr, 2013)
 - Children 6-18 months learned and imitated the actions of a real-life, interactive demonstration of a task better than the same demonstration on a screen (Barr, 2013)
 - 2-dimensional images are perceptually impoverished and lack depth and scale
 - Children must understand that images are both a representation and an object in themselves-this awareness does not develop until at least 18 months (Linebarger & Vaala, 2010)
 - Screen stimuli and memory barriers prevent proper encoding and retrieval necessary for language and cognitive development



- **Attention**
 - Children under 2 do not have the physiological or cognitive capacity to track with the fast-paced screen changes (Kirkorian, Anderson, & Keen, 2012)
 - Children under 2 cannot cognitively process the events on a screen, and therefore miss the point of the experience (Brown, 2011)
 - Children under 5 only attend to the screen 60% of the time, and are distracted by other environmental elements (Courage & Howe, 2010)
 - Children 30 months and younger are more interested in their live environment than a screen (Wartella, Richert, & Robb, 2010)
- **Social Interaction**
 - Screen time eliminates the need for 2-way communicative exchanges
 - Screens do not provide an analyzable language model like human interaction do (Hoff, 2006)
 - Screen time decreases the amount of parent-child interaction that takes place (Courage & Howe, 2010; Hoff, 2006)

Modifications for Screen Time

- Screens are not going anywhere in our culture, so we have to learn how to use them in a way that facilitates growth in all areas
- Children learn best when they participate in an interactive, constructive activity with a medium that can scaffold appropriately (Zosh et al., 2013)
- Limit television and monitor the kind of programs the child is exposed to; educational programs have better outcomes than purely entertaining or adult-directed content (Courage & Howe, 2010; Hoff, 2006)
- Discuss themes within the program
- Label and model items on the screen to provide lexical growth opportunities
- Visual and verbal cues can be given to help the child attend to certain items on the screen
- Parents should involve themselves in the activity to promote joint attention, shared enjoyment, and discovery
- Interactions while watching a screen should emulate the interactions that would take place during book reading (Barr, 2013; Hoff, 2006; Weisburg et al., 2013; Zosh et al., 2013)

Conclusions and Future Directions

- Screen time exposure should be limited for children under 2 years old
- There are detriments associated with screen time to language, cognitive, and motor development
- Parental interaction and active participation in the environment remains the best medium to facilitate language, cognitive, and motor development
- Modifications can be made to the ways that screens are used in order to make it a more appropriate and productive activity
- More research needs to be done on the efficacy of these modification approaches on specific areas of development

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