

Television and the attention, play and language of young children

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Relevance of a presentation on television and development in the age of new media

- New media has not displaced television, in fact TV has become ubiquitous to the degree it has become 'invisible', and children's TV viewing hours have not decreased (*Christakis et al 2009; Coarage, Murphy, Coudling & Saffill 2010; Galvin et al. in Linberger & Vaula 2010; Masur & Flynn 2008*)
- Post birth, the first three years of brain development establish the architecture of the brain that will long term inform children's health outcomes (physical and mental), their behaviour and their capacity to learn (*Christakis, Zimmerman, DGaiope & McCarty 2004; McCain, Mustard & Shankar 2007*). Infants and toddlers are the age group of greatest research focus as they are in the critical foundational years when brain architecture is formed, and gene-environmental interactions are most active (*Christakis, Zimmerman, DGaiope & McCarty 2004*).
- Children's development is primarily dependent on relationships with parents, and significant others, with 'serve and return' as an critical quality.
- The context in which children develop needs to be the subject of scrutiny as there is considerable evidence that the presence of background television is likely to diminish the quality of the interactions in those relationships, particularly in those formative years.

Purpose of the presentation

- To outline recent findings regarding television and young children.
- The presentation argues that television as a medium, or the time spent watching it are not so much the issues as the context that parents create for very young children's television viewing

Presentation outline

- Contextual information about young children and television
- Television and children birth to 6 months, and under twos
- Television and children's play, attention and learning
- Television and children's language development
- Creating contexts for young children's television viewing

Key contextual information about young children and TV watching

- Young children do not watch TV as they might look out a window. It is different in quality from real world seeing and hearing. Rather it has a 'developmental course' so maturation must be taken into account when understanding its impact (*Anderson & Hanson 2010*).
- Television as a perceptual stimulus is not equal to real life experience (*Anderson & Hanson 2010*).
- Screen time is any time spent in front of a TV (or other new media), but not necessarily watching.
- Children learn better from real stimuli than video stimuli. TV imposes a higher cognitive load on children than real life, but TV can adapt, eg. Play School (slower speed, repetition, co viewing with parent and associated verbal interactions, few transitions/ changing scenes).
- Research can be divided into studies of background television(not actively being watched), and studies of foreground television (active watching of children's program) (*Kirkorian, Pempek, Murphy, Schmidt & Anderson 2009*).

Key contextual information about children and TV watching (cont.)

- 'Attention getting' and 'attention holding' are not the same. Attention getting does not involve children in processing information which is central to learning (*Coarage & Saffill 2010*).
- 50% of US parents report that the TV is on most of the time irrespective of whether it is being watched (*Rakaut et al 2003, in Linberger & Vaula 2010*).
- US infant and toddler TV viewing has increased with the availability and use of baby videos (*Coarage & Saffill 2010*).
- The number of hours of children's television viewing has not been reduced by new media, in fact it has remained the same (*Galvin et al. 2009, in Linberger & Vaula 2010*).
- The US American Academy of Pediatrics 1999 policy statement says no TV before 2 years, yet children are inevitably around operating TVs, given their ubiquitousness (*Wartella, Richart & Robb 2010*).
- The mechanisms through which exposure to television in the very early years may affect brain architecture long term are not clear (*Wartella, Richart & Robb 2010*).

What this presentation is not about

- The relationship between television viewing and obesity levels, including advertising of junk food and the levels of physical activity in children
- Children's social development and heavy TV viewing
- TV viewing 'causing' ADHD
- The effectiveness of Baby Einstein videos or equivalent

NAEYC and Fred Rogers Center for Early Learning and Children's Media statement

- '...young children need tools that help them explore, create, problem solve, consider, think, listen and view critically, make decisions, observe, document, research, investigate ideas, demonstrate learning, take turns, and learn with and from each other' (p. 6)
- TV viewing is a passive activity, that does not involve interaction so it does not meet these criteria.

Television and children 0-6 months (*Anderson & Hanson 2010*).

- Children's brains are too immature to process television images until 6 months of age, but they do develop the capacity to hear television stimuli. This does not mean that they can comprehend what they see and hear.
- Television does however attract the attention of and engage very young children, albeit in short bursts, but not in the same way as it does for adults and older children
- Children need to learn what to look at on TV, where, when and what

TV and children under 2 years

- TV for under 2s is not recommended because children's development is promoted best by direct interactions with parents and caregivers (*Children and Media PMJ n.d.*).
- Under 2 years children do not have the perceptual capacities needed to make TV meaningful, particularly visually, so it likely just distracts them from other activities. Also they need to be able to mentally/symbolically represent, that is to understand that what they are seeing on TV is a representation of reality (*Wartella, Richert & Robb 2010*).
- *Courage and Soloff (2010, p.231)* observed that that toddlers do not regard TV and video as being directed to them personally. As a result, they do not think it is a source of useful information that they can use in the real world. It can be concluded that children in this age group do not learn as much from TV as they do from interacting with other people. It can also be concluded that all children's learning is better when they are interacting directly with others within a 'dynamic social context'.
- With ages from 2 years, children become more TV literate and are able to understand what they are watching, however *Linberger & Vaula (2010)* found, the closer the TV program is to real life type interactions the more accessible it is for young children (eg. *Play School*) and the more easily they can learn language from it (*Linberger & Vaula 2010*).
- A 'competent co-viewer' can facilitate the ability of babies and toddlers to learn language from screen media.

Background TV and under 2s

- 56% of US families with 11-18 month olds have TV on either all the time or most of the time (*Masur & Flynn 2008*), but not on programs for infants. These months are a critical time for young children's language development.
- Positive interactions between mother and child (11-18 months) have been found to be adversely affected by the TV operating in the same room (*Masur, Flynn & Elizabeth 2005*, in *Masur & Flynn 2008*), diminishing social, attentional, cognitive, play competence and language acquisition.
- Parents have been found to spend 21% less time interacting and playing with their children when the TV is on. Also any play was shorter and less likely to involve active object play. (*Kirkorian, Marpley, Pongke, Anderson & Schmidt 2005*, in *Masur & Flynn 2008*).
- TV has been found to distract infants from play:
 - 'the rapid pace of changing images that characterises children's television programs repeatedly elicits the infant's orienting reflex, compels their visual fixation on the screen, making it difficult to disengage' AND even when the TV was off infants continued to look at it in the expectation it would come on' (*Courage, Marpley, Gauding & Soloff 2010, p. 177*).

Background TV, children's play and learning

- If learning requires attention, then we need to separate attention getting from attention holding. The first is about distraction and does not involve information processing whereas the second does (*Courage et al 2010*), leading to the idea that if children are to benefit from whatever activity they are undertaking, sustained attention is an important focus. There are implications for children's learning when they are playing with toys in front of the TV.
- *Courage et al (2010)* found that children 6-18 months preferred the toys when they were in the presence of both, however they still monitored the TV and so were constantly distracted from their toy play by the TV. We know that sustained attention is a key part of the development of executive functioning which is a much needed academic and indeed life capacity, (holding ideas in working memory, cognitive inhibition and cognitive flexibility).

Background TV, children's play and learning (cont.)

- Researchers have found that 3.5 and 4 year old children's attention and as a result task performance is disrupted by the continuous distractor of TV. They were not able to tune it out (*Kannas & Colombo 2007*).
- They also found that when the TV was turned off there was a three fold increase in the attention parents gave their children; they were more responsive. When, however, TV was turned on, the same parents said fewer words to their child and played with their child for a shorter periods.
- Toddlers who played with background TV were found to have shorter play episodes and exhibited less concentration than did toddlers who played without background TV (*Kirkorian, Anderson, Schmidt and Pempek 2005*).
- *Courage & Sealf* (2010, p. 230) conclude, a body of research has found that background TV distracts infants and toddlers during play because it attracts their attention, and as a result TV has considerable potential to disrupt children's processing of information.

TV and language development

- Consistent with *Kannas and Colombo's (2007)* finding, *Christakis, Gilkerson, Richards, Zimmerman, Garrison etc (2009)* found that when the TV was on, parents of children 2-48 months spoke fewer words (500-1000 words fewer per hour), the children also spoke fewer words, and there was fewer 'conversational turns' than when it was turned off.
- Research on children 12, 24 and 36 months by *Kirkorian, Pempek, Murphy, Schmidt and Anderson 2009* found that background TV decreased parent child interactions because parents decreased their 'active engagement' with their children.
- Given what we know about early language development (eg *Hart and Risley 2003*), *Kirkorian et al 2009* concluded that there may be a link between TV viewing by young children and slower language learning, and delays in attention and cognitive development.

TV and language development (cont.)

- Similarly, in a study of **foreground** TV watching and delayed speech development in children (av. age 18 months), *Okuma and Tanuma (2009)* found that when children regularly watched long hours of TV that had characteristics that were unlikely to elicit parent-child communication (long, realistic animation with few changing images), such viewing may delay language development (p. 120). Such video also left less time for book reading or other activities.
- Television in a child's bedroom is associated with 'poorer vocabulary' at 4 years (*Bittman et al 2011*).
- The type of program watched is related to whether there are gains in 'vocabulary knowledge, fluency and letter and word recognition', eg not for cartoons but yes for educational programs, eg Sesame Street (*Moss 2008 p. 88*).
- The context that parents build for the way TV is used determines children's receptive language (*Bittman et al 2011*).

Bittman et al's 2011 analysis of ALS data re vocabulary acquisition and media (6/7 year olds)

- Key factors found:
 - Parents characteristics (SES, material resources, cultural capital, income)
 - The context created for children's (old and new) media use
 - Parent co-viewing with children ('age appropriate guided interaction') (*Plowman et al 2008*, in *Bittman et al, 2011*).
- Other factors not found to be relevant:
 - Exposure to media
 - Hours of watching television

Creating contexts for learning that include TV in the preschool years

- Children learn best in relationships, involving interpersonal 'serve and return' type interactions with significant others.
- Children need learning contexts that support on-task attention and learning (*Kannas & Colombo 2007*) so background distractors such as continuous TV need to be avoided
- 'interactions with technology and media should be playful and support creativity, exploration, pretend play, active play and outdoor activities' (*Children and Media PBS n.d. p. 7*)
- Children need adult mediators of the programs they watch, however *Courage et al (2010)* found that the adults in their study were largely passive and did not play that critical mediation role.
- Parents who have program rules rather than time rules are most likely to be positively disposed to television and to co-watch (*Children and Media PBS*)

Creating contexts for learning that include TV in the preschool years (cont.)

- What matters is how appropriate a program is for a child and whether there is a co-viewer and what that co-viewer does when the program is on, for example, building on program ideas (*Children and Media PBS n.d.; Moss 2008*).
- Factors to consider: context (background or foreground television): age of children; program type (for adults or children; suitability of program for children; parent behaviour when television is on, especially facilitator, co viewer role or not; SES of children)
- *Bronfenbrenner (1979)* reminds us to consider person, process, context, space and time (*Lineberger & Vaula 2010*)

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