Australian Council on Children and the Media

fact sheet

Mind Over Media: Developing good thinking skills—analytical and creative

Good cognitive (thinking) skills for a very young child includes the ability to pay attention, focus on a task, solve problems, recall and recount both short and long term experiences, and a capacity for flexibility, risk taking and openness to new information. Children develop good problem solving and analytical skills by actively experimenting with their natural environment, engaging in play with a range of open ended resources and interacting in meaningful ways with peers and caregivers.

Imagination is one of the qualities that makes childhood such a special time and for it to thrive, children need environments where they can play in a range of ways ,in order to enjoy, develop and extend their imagination and creativity.

Cognitive skills, creativity and the media

There is evidence that, used in moderation, some media, particularly carefully chosen computer games, can improve children's cognitive abilities. However, excessive media consumption is associated with poorer cognitive and attentional development. Although there is some support for the notion that good quality children's television can stimulate children's imagination, the majority of studies suggest that television viewing reduces imagination and creativity, as it frequently presents a narrow way of being and doing..

Infants (0–1 years)

The most important developmental need of an infant is secure attachment to their primary caregivers. (See YMA's Fact Sheet *Mind Over Media: Developing Healthy Relationships* for more detail on this topic.) This will form a solid foundation for the development of other skills such as cognitive skills and creativity.

Infants, the media, cognitive skills and creativity

It is known that Australian infants are exposed to approximately 44 minutes of television when four months old, and to just over one hour per day when they are 12 months old (Cupitt & Jenkinson, 1998). Few studies exist about the impact of this infant 'viewing'; however child developmentalists agree that an infant's time is better spent interacting with human caregivers and support the American Academy of Pediatrics (AAP) recommendation that children under the age of two should watch no television at all (AAP, 1999).

Here are a few strategies that will help:

- Minimise the exposure of children under the age of two to electronic media.
- Playing music or a taped voice can be a better option for entertaining your infant as it is less likely to overstimulate and enables them to control their own levels of interaction with the world around them.
- Playing simple computer games with your infant on your lap, may be an enjoyable alternative way to entertain them. Remember, though, that the most important part of this process for the infant will be the opportunity for close interaction and contact with you.
- Provide opportunities for infants to be with others of their own age. Some specific playgroups are now being established for babies—check with your State or Council health departments, or the Playgroups in your State (www.playgroupaustralia.com.au).

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Toddlers (1–3 years)

Some of the cognitive skills that toddlers are improving include physical reasoning, classification and sorting skills. As their language develops, and they are exposed to a widening range of first hand experiences, their make believe play becomes more complex , taking on familiar roles and acting out everyday situations that have meaning. Toddlers begin to use a range of materials including sand, water, paints, building blocks to represent ideas and make meaning. They start being able to categorise objects according to function not just appearance, and distinguish between animate and inanimate objects.

Toddlers, the media and cognitive skills

There are two important distinctions to be made when discussing the development of intelligence, analytical ability, reasoning and other skills referred to here as cognitive skills. Firstly, the quality of the television program and / or the computer games does matter. Secondly, the amount of media consumed overall has an impact.

Good quality age-specific television

Research shows that children who are exposed to and watch good quality age- specific television, that is relevant and meaningful to the child will support the child's developing knowledge and understanding about a whole range of areas including literacy, numeracy, environmental understandings, music, the arts, diversity. Research has shown that preschool children who watch programs such as Sesame Street will be better at recognising letter and numbers in their first year of school, and that this advantage will continue even into high school.

Too much television

Any recommendation that educational television might assist preschoolers in developing cognitive skills, must be accompanied by a caution about the damaging effects of preschoolers watching too much television. In particular, a recent longitudinal study has shown a clear link between amount of television watched by preschoolers and subsequent attention problems at age seven. Children in the age range of one to three were studied, and it was found that each hour of television watched by children in this age range, increases the risk of attention problems such as Attention-Deficit / Hyperactivity Disorder (ADHD) at age seven by almost ten percent (Christakis et al., 2004).

The impact of background television on toddlers

Another area of concern is the impact of background television. In a review of the literature Daniel Anderson (2004) cites research by Evans et al (2004) who finds that background television is associated with disrupted and less intense play activity in 12 month, 24 month and 36 month old children.

Toddlers, the media and creativity

Some argue that general television viewing improves the quantity and quality of children's imaginative play because they emulate television characters and incorporate them into their play. This claim is disputed by others, as the effect will only be found if high quality television content is viewed, preferably with an adult. In any case, too much television will have a negative impact on creativity for a number of reasons.

Impact of programs designed for children

Patti M. Valkenburg from the University of Amsterdam is a leading researcher in the field of the impact of television on children's imagination. She concludes that there is support to claims that children use television content in their imaginative play. However, there is little evidence that television viewing has improved the quality and quantity of that imaginative play, as much of the play is imitative rather than imaginative. However for many children who have limited first hand experiences this imitative play of television characters is the first step in developing the skills of role playing and is therefore an important developmental step towards dramatic play and drama. Valkenburg (2001) found that there was evidence that a children's program specifically designed to stimulate children's imagination can promote imaginative play, but this is most effective when parents take an active role in supporting the play and providing opportunities to extend the ideas after the program has finished.

The very features of television that make it attractive, can also cause it to have a negative impact

Television is a wonderful medium which can express ideas and convey facts in a way that can captivate and inspire its audience. However, these very features can have a negative impact on

children's imagination and creativity if they watch television too much, and without parent interaction. Valkenburg suggests that television viewing can reduce imagination and creativity in four different ways: (Valkenburg, 2001, pp124–128)

Displacement

Young children need a range of experiences during their day including physical activity, indoor and outdoor play, books and sensory stimulation including auditory experiences such as radio and tapes. Too much passive TV viewing can limit the time available for more active pursuits.

Passivity

Television is an easy medium, requiring little mental effort and can pose a threat to children's willingness to use their own imagination in play and creative pursuits.

Rapid-pacing

Children watching television are confronted with images that must be instantaneously processed. This can result in overload, impulsive thinking, hyperactivity, a non-reflective style of thinking and an inability to fix their attention for a longer period, thereby impairing imaginative play

Visualisation

Television, unlike radio and print media, presents viewers with ready made visual images and can leaves them very little room to use their own imaginations.

Here are a few strategies that will help:

- Allow your toddler to watch some good quality educational television, such as *Sesame Street*
- Choose children's programs designed to promote imaginative play, such as *Play School*. Encourage children to extend what they have seen with materials that are available around the home. Watching *Play School* yourself may help you to come up with some ideas. Be sure to praise what they produce.
- Don't have the television on in the background while your toddler is playing.
- Limit total screen time to one hour per day: cognitive skills are learnt best through play, and imagination fostered by real world interaction, and relationships with others. There are many resources available to help parents and caregivers think of alternative activities for their children. Try your local Playgroups Association for ideas, or browse the library or bookshop for books of activities for children.
- Provide opportunities for toddlers to be with others of their own age. Investigate local playgroups, occasional care options or new mothers' groups coordinated by your Health Department, or local council.

Preschoolers (3–5 years)

Older preschoolers demonstrate more understanding that others may have different perspectives. Their make-believe play becomes more complex as they build on each other's ideas and create quite sophisticated story lines. Research indicates that this play actually contributes to children's development of cognitive skills. Berk reports that "…preschoolers who spend more time at sociodramatic play are advanced in general intellectual development, better understand the feelings of others, and are judged more socially competent by their teachers … Make-believe also seems to strengthen a wide variety of mental abilities, including memory, language, logical reasoning, imagination and creativity" (Berk 2003, p. 227).

Preschoolers, the media and cognitive skills

As with good quality educational television, there is some evidence to suggest that some early access to computers can help children learn about a range of topics including literacy and numeracy understandings.

Computers and improved cognitive skills

Professor Xiaoming Li from Wayne State University in Detroit, studied 122 four year olds, and found that those that had used computers had skill development test scores twice as high as those who didn't used computers, IQ scores 12 points higher, and better school readiness scores. Li (2004) also found that too frequent use seemed to have negative effects "Some parents leave kids

in front of the computer every day, make it into a babysitter, so the parents can do something else. We don't want to encourage that" (Li, 2004, p. 1720).

The US based Alliance for Childhood says: "Operating computers and other advanced electronics requires a kind of analytical and abstract thinking that may interfere with young children's more concrete and flexible ways of perceiving and interacting with the world." (Alliance for Childhood, 2001, p109). Further, they argue, there is plenty of time in late primary school and adolescence to learn the skill s needed to navigate the technological environment.

US paediatrician Michael Rich, Director of the Centre on Media and Child Health at the Children's Hospital, Boston, says "the question for parents is not whether this or that game is educational, but is this activity as educational for my child as others". Rich says that playing games won't make a genius of your child, and states that early dependence on screen-based entertainment can be hard to reverse.

Impact of background television on older preschoolers

Vandewater and Bickham (2005) also found that children from heavy–television viewing households (television on 'always' or 'most of the time') read less than other children and were less likely to be able to read than other children. Three to four year olds that were not in heavy-television households were found to spend about 25% more time reading than those constantly exposed to television. (Vandewater and Bickham, 2005, p. 574)

Preschoolers, the media and creativity

Although older preschoolers may also enjoy imitating characters and stories they have seen on television, they too will benefit more from play opportunities with their peers, and in different environments.

Impact of television violence on creativity

There is evidence that television violence has a negative effect on children's relationships imaginative play and creativity, and that the frequency with which children watch violent and/ or action oriented programs is positively related to restlessness, diminished tolerance of delay, diminished persistence in free play and impulsive behaviour. Imaginative play can also be negatively influenced if the child has experienced fright through watching violent television content. (Valkenburg, 2001, p. 129)

Using computers

Digital drawing, painting and graphic programs can be used in addition to more conventional drawing materials to allow children to draw, paint and place images on paper. Children who are already expressing an interest and aptitude for reading and writing, could start typing simple words.

Here are a few strategies that will help:

- As with your toddler, look for good quality educational television, that will help them broaden their experience of the world including developing understandings about literacy and numeracy, the environment and people, places and things.
- Involve children in helping to choose programs Choose children's programs designed to promote imaginative play, such as *Play School*. Encourage children to extend what they have seen with materials that are available around the home.
- Seek out good quality computer games that support skill development in numbers, reading, early science such as animal classifications, art and music. Examples are *PlayZone*, *Izzy's Island*, *Teddy Bears' Picnic* or *Early Words*.
- Seek out graphics and drawing software programs made for children. Examples are: *Kid Works 2*, *Kid Pix Studio* and *Print Shop Deluxe*. Before going to the expense of buying software, you may prefer to experiment with programs such as MS Paint that are generally installed as part of the Windows operating system.
- Choose computer or video games that encourage problem solving skills, such as the *Putt Putt* series.
- Avoid violent media and support children to become critical viewers in what they feel comfortable watching and why
- Limit total screen time to one hour per day. Go to the website (www.sosmart.com) and

follow the links to alternative activities you can do with your preschooler.

- Provide opportunities for play with other preschoolers. Gather together outfits and toys in a dress-up box that will help them think of ideas for socio-dramatic play.
- Visit parks and beaches and suggest ideas for stories that could happen in these locations, e.g. pirates, fairies.
- Go on a walk and collect objects of interest (ie all the things you can find that are green)

Top five tips to help your children be smart media users

One of the most useful ways you can support your child to apply their early cognitive skills is to teach them how to examine critically the media to which they are exposed. Research shows that media education by parents is the most effective way to reap the many benefits that media has to offer and avoid its pitfalls.

Put these messages simply for very young children, and build on them as they mature

1. Be an active TV viewer. Think about what you are watching and ask yourself questions such as: What is the message of this show? Do I agree with it? If not why?
2. Question all sources of information. Just because it is on TV or on the internet, it doesn't mean that it is true.
3. Expect tricks in advertisements. What are the unstated messages about attractiveness, popularity etc.
4. Watch out for racial and gender stereotypes. Discuss which groups of people are totally left out of TV programs and movies.
5. Use media as creative tools for self expression. Experiment with a digital cameras, camcorders or web design software to help your child be more critical of what they see.

Information in the section has been adapted from PBS Parents, (2005)

Brain research—reading to children

Early childhood professionals have for years been encouraging parents to read to their babies and children, citing the benefits to the child's development of literacy skills and love of reading. Some consider that reading to very young children does even more, that is, it actively contributes to brain development.

A recent article in *The Australian* reported that Ingrid Rieger, a paediatrician at Sydney's Royal Prince Alfred Hospital (RPAH), is encouraging parents to read to preterm babies. She explains that the brain of a premature baby, if scanned at the time it would have been born if it had stayed full-term, is structurally different compared to a newborn full-term baby and believes that the parents' reading to the baby will stimulate the baby's nerves to grow and make new connections.

Families are enrolled in the RPAH program if their baby is born at less than 30 weeks' gestation. When they take the baby home, they are given information about reading techniques and a book, and encouraged to read to the baby. They are followed up by a team of health professionals including a physiotherapist and psychologist at four, eight and 12 months, then at three, five and eight years.

Early indications are that reading is "really encouraging neurological development, so it's stimulating nerve pathways and nerve growth at a time when the brain is growing rapidly." (*The Australian*, 10 September 2005)

There is still some debate about the degree to which reading actually stimulates the growth of synaptic connections, or simply provides a positive environment in which child and caregiver are building their relationship and the child is feeling nurtured by the spoken word. In any case,

the fact that reading to babies and young children is of benefit to them, is not disputed.

Conclusion

Good quality educational television programs have been shown to have some benefits in the development of preschoolers' cognitive skills, including the development of oral language, literacy and numeracy understandings, and understanding of the world around them. Some computer programs may also assist in the development of these skills. However, heavy exposure to television including when the television is often on as background, is negatively associated with these skills. Most researchers agree that although good quality television programs and computer software can provide some opportunities for stimulating imagination, the nature of television itself, particularly in large quantities, will diminish creativity. Play with peers using real life materials and interaction with human caregivers are the best foundation for developing good cognitive skills.

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