

Remotely controlled

Dr Aric Sigman reports on a wide range of research which shows that television viewing for young children seems to damage their future learning abilities.

Considering the significance, there has been little mention and few people realise that France's government has recently banned French channels from airing TV shows aimed at children under three years of age. It has declared, "Television viewing hurts the development of children under three years old and poses a certain number of risks, encouraging passivity, slow language acquisition, over-excitedness, troubles with sleep and concentration as well as dependence on screens ... even when it involves channels aimed specifically at them." Following hot on the heels of this, two major unrelated scientific review studies have concluded that television harms child development. The author of one, published in the medical journal *Acta Paediatrica*, didn't mince his words: "Infant TV viewing is associated with delayed language, with shortened attention spans and with delayed cognitive development. The scientific evidence of benefit is just not there and the best available evidence suggests harm." While the US National Institute of Health and Yale University have just published an analysis of 173 studies over the past quarter of a century and three-quarters of all those studies have found that increased media viewing is associated with negative health outcomes for children and adolescents. All of these findings occur irrespective of the 'educational quality' of what a child watches.

Even background television greatly disrupts younger children's ability to play, concentrate and learn, with "serious implications for subsequent cognitive development", according to a study recently published in *Child Development*.

Television, DVDs and computer games are increasingly seen as causing damage to future school performance and eroding measures of creativity and imagination in children.

One of a number of examples is found in a longitudinal study appearing in 2005 in the *American*

Archives of Pediatrics and Adolescent Medicine, concluding that "television viewing in childhood and adolescence is associated with poor educational achievement by 26 years of age.

Early exposure to television may have long-lasting adverse consequences for educational achievement and later



socioeconomic status and wellbeing... the effects may be long-lasting."

The authors describe a 'dose-response' relationship between the amount of television watched and declining educational performance, which has biological plausibility. Significant long-term effects occurred even at so-called modest levels of television viewing of between one and two hours per day. They also wrote, "the overall educational value of television viewing was low... These findings offer little support for the hypothesis that a small amount of television is beneficial."

Attention problems

Along with the studies of the effects of TV on education are more specific studies finding a direct link between television viewing in children and significant attention problems.

A dose-response relationship also appears in all these studies.

But why? Today, there are far more zooms, pans and edits than ever before. Along with TV displacing key educational and play activities, this increased audio-visual stimulation may harm the child's rapidly developing brain.

Rapidly changing images, scenery and events, colours, and high-fidelity sounds are highly stimulating and extremely interesting. TV is the flavour enhancer of the audiovisual world. Little in real life is comparable. TV may

overpay the child to pay attention to it, and in so doing it may physically corrupt the reward system underpinning their ability to pay attention (to a teacher or book) when the screen is off.

This overpayment appears to come in the form of the neurotransmitter, dopamine, seen as rewarding us for paying attention, especially to things that are novel and stimulating. Screen entertainment causes our brain to release dopamine and, for example, ADHD is linked to a change in dopamine functioning.

Young children's brains are referred to as being plastic in that their shape and the way they actually function are powerfully influenced by the things they experience every day or by the lack of things they experience every day. As most children are spending increasing daily hours in front of screens at younger and younger ages, screen exposure is having a disproportionate influence on the plastic brain in the developing child. Therefore, it is imperative that teachers, parents and policy makers ensure that children, particularly those of Montessori school age, have very limited access to electronic media and are allowed to develop to their full potential. What this means in practice is that children should not have screens in their bedrooms and schools should not be seduced into believing, under any circumstances, that TV screens in any way rival a teacher.

As children increasingly face a two-dimensional screen-based virtual world, the evidence clearly points to redressing this imbalance by strengthening the role of real-world 3D play and learning in their lives. We only need to think of our own upbringing as a source of inspiration. ■

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