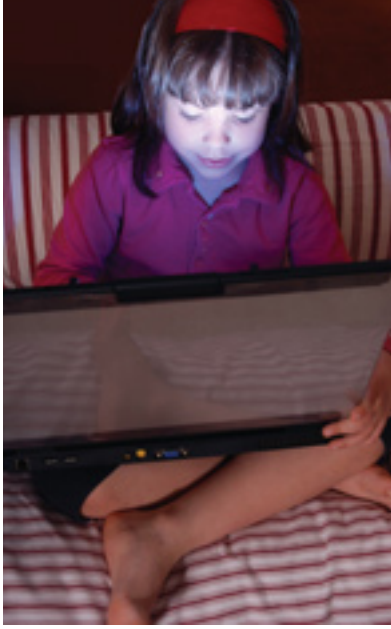
Does not compute

Dr Aric Sigman looks at the effects of Screen Technology in Early Years Education



The British government now considers ICT as a "development matter". As part of the EFYS (Early Years Foundation Stage), from the early age of 22 months, children should *"Show an interest in ICT. Seek to acquire basic skills in turning on and operating some ICT equipment".* This is not a requirement and interestingly Britain's best independent pre-schools do not subscribe to this belief.

Parents and teachers are being increasingly encouraged to believe that information presented on screens is more engaging, leading to greater learning in children. The term 'interactive' is used, giving the false impression that existing methods of teaching and learning are not, or are less so. And there is an implicit message that not exposing young children to this screen technology puts them at a disadvantage. It is also implied that if children do not get used to screen technology early on, they will in some way be intimidated by it, or be less competent at using it later. However, new research has found that even Rhesus monkeys are comfortable with, and capable of using, the same screen technology that children are exposed to.

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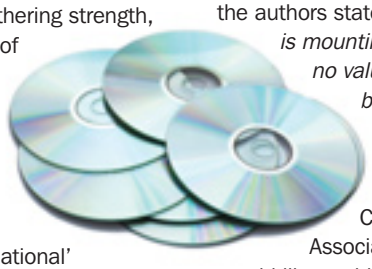
While this trend in introducing screen technology in early years education is gathering strength, a growing body of empirical evidence is providing a very different picture.



The young children's 'educational' television and DVD market has allowed some to believe that learning and experiencing via a screen, rivals, and often exceeds, the process of learning via real-life interactions. Yet for example, recent studies find, *"When learning from videos is assessed in comparison to equivalent live presentations, there is usually substantially less learning from videos."* And a phenomenon called the *video deficit* is being used to describe the observation that toddlers who have no trouble understanding a task demonstrated in real life, often stumble when the same task is shown onscreen.

Another study published in the medical *Journal of Pediatrics* found that the use of educational DVDs might actually retard young children's language development. This screen technology showed no positive effects on young children. And there were no benefits whether the children watched 'educational' or 'non-educational' media or adult television programs such as *The Simpsons, Oprah*, and sports programming. Whether parents sat and watched the screen with the children also made no difference to the outcome: for every hour per day spent watching specially developed educational DVDs, children under 16 months understood an average of six to eight fewer words than children who did not watch them. One of the authors stated, "*The evidence is mounting that they are of no value and may in fact be harmful."* A study recently presented to the International Communication Association says: *"We would like to think it could work, that Teletubbies and other programs can teach initial language skills. That is not true."*

While playing computer games are thought to be more stimulating than watching television or DVDs, evidence indicates that even this so-called 'interactive media' is associated with limited neurological activity in children. For example, a study looking at differences in cerebral blood flow between children playing computer games and children doing very simple repetitive arithmetic adding single digit numbers found that computer games only stimulated activity in those parts of the brain associated with vision and movement as compared to arithmetic-stimulated brain activity. Adding single digit numbers activated areas throughout the left and right frontal lobes. Playing computer games did not. The findings were described by the World Federation of Neurology as *"alarming … computer games stunted the developing mind … halting the process of frontal lobe development … the implications are very serious … children should also be encouraged to play outside with other children, interact and communicate with others as much as possible'.*

The media prominence of Harry Potter has caused many to labour under the misapprehension that children are reading more. The opposite is true. Early exposure to, and increasing time spent watching screen technology is strongly linked to a significant continuing decline in time children spend reading books. Pre-school children spend now three times longer in front of a television or computer than they spend reading. And those with a screen in their bedroom are less likely to be able to read by age six. Television viewing among children under three is found to have "deleterious effects" on mathematics ability, reading recognition and comprehension in later childhood.

The National Foundation for Educational Research recently reported that for the first time *"Comics are the most popular reading material … they are now the favourite … enjoyment of reading stories and information books has fallen…".* ICT use was cited as one of the causes. And it's not a coincidence that Britain's 2008 SAT results revealed that more than a third of 14-year-old boys have a reading age of 11 or below, and more than 1 in 5 have a reading age of nine.

Parents and teachers can be assured that children will not lose out if we limit their exposure to ICT during their early years. Most importantly, Montessori schools can feel confident that their current approach of no or low ICT in the early years is best and they needn't change their position. We should in effect 'cordon off' the early years and provide a buffer zone where a child's cognitive and social skills can develop without the distortion that may occur through premature use of ICT. We should all be reminded of the ancient medical imperative: "First do no harm". Next month, I'll be discussing the positive choices and alternatives to ICT in early years education.

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