



Montessori Society AMI UK

Do Young Children Need Computers?

By: Lori Woellhaf



We've all faced the seduction of the educational software advert that promises to transform our children into technically savvy adults:

'At Leapfrog we believe that kids don't just grow up, they think up..with Clickstart, you're practicing computer skills, numbers, letters, shapes, the stuff you're going to need for preschool.'

Governments everywhere are pushing computer literacy and use in classrooms. We are fed the arguments that computers improve both teaching practices and student achievement. There is an urgency to their

demands that computer literacy should be taught as early as possible, to 3 year olds; in order that children are ready to become tomorrow's work force in an increasingly high-tech world.

If you find yourself succumbing to this pressure and ready to rush out and buy your child the latest Leapfrog, or his first Apple, you may want to check out first a 99-page report called 'Fool's Gold: A Critical Look at Computers and Childhood.' It was written by a group called the Alliance for Childhood, which includes 75 educators, child-development specialists and physicians - many of them nationally renowned leaders in their fields - plus a handful of technology experts. The report calls into question an assumption almost universally accepted among mainstream political leaders, the education establishment and, of course, the high-tech community: that the more computers we put in our schools and homes, and the more our children get to use them, the better off they will be. We need to ask 'Is there research that shows such computer use benefits my child?' On the contrary, over the past few decades, the accumulation of opinion - from scientific researchers to computer professionals - actually warn of the detrimental effect of computer use on early childhood development. While an 'impassioned argument', the report is 'thoroughly grounded in the scientific understanding of human development.'

Neurological research confirms Montessori's observation that different developmental issues are primary at different ages. In preschool children, sensory and motor skills, and the neural regions most related to them, are paramount. By pushing computer use at such a crucial stage for brain development, we are depriving our child's intelligence of the actual food it needs for optimal growth. Fool's Gold asserts that children need to learn their way first around the real world - 'their bodies, their communities, nature - not cyberspace; they need hands-on experience, not simulations and content delivery, however rich in multimedia flourishes.' At the time when the child's brain needs to be absorbing how the natural world works, and adapting to human culture of its place and time, computer use can prevent the link. The report quotes from an article published by the National Science Board,

'Computing and cyberspace may blur children's ability to separate the living from the inanimate, contribute to escapism and emotional detachment, stunt the development of a sense of personal security, and create a hyper-fluid sense of identity.'

The educational psychologist Jane Healy spent years doing research into computer use in schools, and expected to be blown away by how children's learning had been enhanced by computer use. She found exactly the opposite, and was dismayed by the lack of research, and how children's use of so-called educational software showed dubious value for learning. While she remains positive about some forms of computer use for older children, Healy is upset that preschoolers are being urged to log on. She feels strongly that 'time on the computer might interfere with development of everything from the young child's motor skills to his or ability to think logically and distinguish between reality and fantasy'. Her book *Failure to Connect: How Computers Affect Our Children's Minds for Better and Worse*, is an objective look at both the benefits and problems of computer use at home and in school, and their impact on children's health, creativity, brain development, social and emotional growth.

Montessori talked about the ordering that takes place in the first 6 years, during which the child works to create the mental structures and classifications into which to sort all the impressions that he is absorbing. Computer scientist David Gelernter says that instead of bombarding children with more information through internet access, we need to help them develop the ability to intellectually manage such complex data pools. He maintains that children need less surfing, as they already have more data than they know how to handle: 'Virtually everything the Internet is selling, our children already have too much of and are choking on. What they most need', he says, 'is persistence, concentration and careful analysis, none of which they will learn by surfing the Internet.'

It is striking how people who have achieved immense success in the technological field – innovators and pioneers of new forms of computer use – come from a Montessori background, where they did not use computers in their early childhood experiences. Even more striking, when we look at the work of such Montessori graduates as Jeff Bezos (the founder of Amazon), Jimmy Wales (founder of Wikipedia), Sergey Brin and Larry Page (founders of Google) is how their advancements seem to reflect their childhood experience of ordering, sorting, searching through and classifying information. Only now they are doing it on an immense scale, and have designed ways of helping other people to do the same. According to Google lore, Larry Page and Sergey Brin, co-presidents of Google, were not very fond of each other when they first met as Stanford University graduate students in computer science in 1995. They soon found a common interest: retrieving relevant information from large data sets.

Some of the most passionate arguments against computer use in early childhood come from people who are technology experts themselves. Peter Nitze, global operations director at AlliedSignal (an aerospace and automotive products manufacturer), made just that point in speaking about his own elementary education in a hands-on environment that de-emphasized technology: 'If you've had the experience of binding a book, knitting a sock, playing a recorder, then you feel that you can build a rocket ship— or learn a software program you've never touched. It's not a bravado, just a quiet confidence. There is nothing you can't do. Why couldn't you? Why couldn't anybody?'

Fool's Gold urges parents to consider 'what every experienced technology instructor knows: all of these skills can be taught in a one-semester course for older students. Must kindergarten students really be trained to operate high-tech machinery to get a jump start on job skills? Is our economic outlook really so desperate and the development of our children's autonomy so inconsequential as that?'

Some computer experts go even further, and attribute their success in their field to their Montessori education, and not to any childhood computer classes. Mark Malsee reports in *The Story of Sergey Brin: How the Moscow-born entrepreneur cofounded Google and changed the way the world searches*: 'He [Sergey Brin] gravitated toward puzzles, maps and math games that taught multiplication. I really enjoyed the Montessori method, he tells me. I could grow at my own pace. Brin adds that the Montessori environment—which gives students the freedom to choose activities that suit their interests—helped foster his creativity.'

On the Barbara Walters ABC-TV Special "The Ten Most Fascinating People of 2004" Larry Page and Sergey Brin, credited their years as Montessori students as a major factor behind their success. They said that it was going to a Montessori school where they learned to be self-directed and self-starters; that Montessori education allowed them to learn to think for themselves and gave them freedom to pursue their own interests. Will Wright, designer of the groundbreaking computer game The Sims, has said 'Montessori taught me the joy of discovery...It showed you can become interested in pretty complex theories, like Pythagorean theory, say, by playing with blocks. It's all about learning on your terms, rather than a teacher explaining stuff to you. SimCity comes right out of Montessori—if you give people this model for building cities, they will abstract from it principles of urban design.' It is thought-provoking that even in such a field as computer games, which have a reputation for being violent, war-oriented, and competitive, a former Montessori child instead develops a game oriented towards building a community.

Will Wright's actual TED speech included an introduction of how his own Montessori education was 'the high point of my education'. He reports that when he became a computer game designer he became very interested in Maria Montessori and her method, how she 'found very valuable for kids to discover things on their own rather than being taught these things overtly. She would design these toys where kids in playing with the toys would actually come to understand these deep principles about life and nature through play. And because they had discovered these things it really stuck with them so much more. And also they would experience their own failure . . . that was very important. So the games that I do I really think of more as modern Montessori toys. And I really want them to be presented in a way more where kids explore and discover their own principles.' To the Montessori community, that sounds pretty familiar!