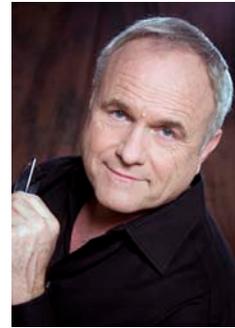


The Emerging Technology Disaster in Early Childhood Education

Commentary by
Michael Mendizza

On Fast Companies' Article - A is for App

See: <http://www.fastcompany.com/magazine/144>



To the Editor of Fast Company, Anya Kamenetz, the author, and Paul Kim, CTO, Stanford University School of Education, quoted on the cover.

Just look at Eliana and Germma Singer on the cover, both age three – so cool, so hip, learning their ABCs on the iPhone - the next Technopolitan cover girls. Next to them bold – red “The Real Smart Phone Revolution, How Tech Is Making Kids Smarter Everywhere.”

Sirs and madam, technology cannot and does not make kids smarter. Nothing can be further from the truth. Intelligence is innate, not learned or accumulated, and universally present in every cell of the body and all of nature. To suggest that an iPhone will improve this vast innate intelligence is dehumanizing. How dare you? ^{1, 2}

Rather, technology is causing the human brain and everything attached to it to become more like the technology it is interacting with – more conditioned and mechanical, especially when this brain-machine-intercourse is encouraged, as your cover story does so well, early in the development sequence. ^{3, 4, 5}

The field of epigenetics, now well established, is based on the fact that genetic expression is triggered by the environment. Human beings have altered the world and their brain-behavior-development is being sculpted by those changes – from the inside out. Change the environment and you change the brain that interacts with that environment. The two, brain and environment, are inseparable, two sides of a single coin. The weaver becomes the web. ^{6, 7}

In the 1950s television was rolled out and marketed as the next ‘revolution’ in education. It did not happen. In fact, study after study links prolonged exposure to television to a long list of personal, social, educational and health ills. Next we were SOLD on the idea that computers in every classroom would revolutionize education.

Then it was the internet. Now it is personalized iPods and Palm Pilots, crammed full of video games disguised as so called 'educational' applications – branded with headlines – *How Technology Could Unleash Childhood Creativity – and Transform the Role of the Teacher*. How dare you? ^{8, 9, 10, 11, 12}

Your article, a facsimile of countless before, refers to our beloved Sesame Street. After millions of public funds invested in this so called early literacy TV hype, not one study of which I am aware confirms that Sesame Street improved literacy. On the contrary a number of studies demonstrate that children who watched this TV bonanza the most had the lowest literacy scores. The same can be said for the more recent hybrid Baby Einstein. A class action suit was filed against this exploitive corporate baloney for false and misleading advertising. ¹³

The Campaign for a Commercial-Free Childhood (“CCFC”) asks the Federal Trade Commission to bring an action against Baby Einstein and Brainy Baby for engaging in deceptive acts and practices in violation of Section 5 of the Federal Trade Commission Act.

The American Academy of Pediatrics (“AAP”) recommends “no screen time” for children under age two, including television or videos promoted for that age group. Despite this recommendation, companies have aggressively marketed videos for children under two, making over one billion dollars from the sales of these videos. Companies such as Baby Einstein and Brainy Baby have capitalized on parents’ desires to give their very young children a leg up on learning and development by deceptively and falsely marketing their videos as educational and beneficial for infant development. ¹⁴

A few years ago I sat across the table with the former Superintendent of Public Education for the city of Houston. 'Teachers are incompetent,' he railed. The only hope for schools, meaning children, is pre-programmed instruction delivered by computers, he said – adding his voice to the corporate choir led by the major manufacturers and a myriad of producers of so called educational applications then being sold to Houston schools and schools like them all across the globe.

Tragically his statement is true when we realize that the goal of public education are standardized human beings that do as they are told by conforming to the pre-programmed agendas driving the system. I appreciate you believe that the herald coming of a techno-revolution in education will reverse this. I'm not so sure. ^{15, 16}

And just how well have the preceding technological revolutions in education done? Almost half of all public high school students in the US fifty largest cities fail to graduate. 1.2 million public high school students drop out every year. An American teen attempts suicide every 76 seconds and I assure you these drop out and suicide rates are NOT because these young people are technology and media deprived. ¹⁷

What about our sacred ABCs? By 1940, well before television and computer screens, literacy as a national number stood at 96 percent for whites and 80 percent for blacks. Four out of five blacks were literate in spite of all disadvantages. Six decades later, the Adult Literacy Survey and National Assessment of Educational Progress reported a 40 percent illiteracy rate for blacks – doubling the earlier deficiency – and a 17 percent rate for whites, more than quadrupling it. Yet, the money spent on schooling in real terms had grown 350 percent. The more costly, professional and techie education has become the lower the literacy and higher the dropout and suicide rates. So much for Sesame Street, Baby Einstein and the next technological revolution in education. ¹⁸

Why is the United States slipping farther and farther down the human development scale – leading the world in prison populations? It is a failure to develop the social-emotional-sexual intelligence upon which intellectual cognition rests. Technology simply can not and does not develop this foundation. ¹⁹

Rather, especially during the critical early years, technology displaces the nurturing experiences necessary for this basic foundation to develop. More technology introduced earlier in the developmental sequence will make matters even worse. ^{20, 21}

Perhaps a decade ago friend and mentor Joseph Chilton Pearce, author of numerous books on child and human development, was invited by physicist Fritjof Capra to a symposium of world class computer, education, media and human development visionaries to explore the explosion of screen based technologies pouring into education, and by implication into the early childhood. I tagged along as a guest. After several days of interdisciplinary inquiry the group unanimously recommended – ‘the less screen time the better – up to age eleven.’ Why age eleven?

Each age and stage of a child’s development mirrors a corresponding development in the brain. You do the math. The 5,000 to 6,000 hours of screen time the average five year old has spent with corporate media and technology – means 5,000 to 6,000 hours not invested in other activities, running, jumping, playing with pets, digging a hole to China, gazing into the eyes and touching other human beings and nature resulting in, among many other things, the obesity, ADHD and the early diabetes epidemic which can all be related to screen time. The myopic screen-thumb sensory deprived conditioning this screen time implies etches it way into the developing brain, preventing the development of the full spectrum sensory-emotional-empathic foundation upon which an entire lifetime and future society will rest. ²²

The brain of the early child is packed with neural connections waiting to be activated by real life 'experience.' Nature assumes by age eleven that this developing brain will have experienced the living environment and built neural 'structures of knowledge' in that brain based on these experiences. Around age eleven a chemical is released that dissolves the un-myelinated neural mass, meaning potential. This brings that brain to order, in sync with its world, based on what has been experienced. And there you have it.

In terms of neural development a screen is a screen. Each time the developing brain encounters a screen it defaults to the neural pattern established for 'screens' which means, again in terms of full neural development, the 5,000 to 6,000 hours of screen time a child spends in his or her first five years - might as well be the same program repeated again and again. Program content is almost irrelevant.²³

Another emerging field of study is exploring a new and historically unprecedented phenomena brought about by a failure to develop kinesthetic imagination, a development failure also related to screen time. The body as it moves and interacts with three dimensional world develops an inner imagining capacity that corresponds to this three dimensional reality. Screens are two dimensional. Interacting with a screen requires only finger-eye coordination, not the full spectrum three-dimensional capacity that swinging on a rope and splashing into a pond demands. As a result this three dimensional kinesthetic imagination in the post 1970s Nintendo-computerized brain is less developed than in previous generations.²⁴

What researchers are discovering is that cognitive imagination, which, after all, is the core capacity schooling is intended to develop, is grounded in this deeper, more fundamental kinesthetic imaging making capacity. Imagine what happens when this three-dimensional kinesthetic foundation fails to develop fully - if you can. (Hint: two dimensional thinking, perfect for computer games, rather than three dimensional thinking necessary for human interaction with the living world.)²⁵

By every measure whatever is being represented on the screen is a sensory-deprived experience compared with the living, three dimensional, sensing, feeling, dynamic natural world.²⁵

Virtual reality is sensory deprivation and the more the young developing brain interacts with this sensory deprived experience the more mal-nourished, and therefore the less physically, socially, emotionally, and sexually developed that brain becomes.

So called education has been a clever ruse to promote and impose all sorts of behavior modification products and techniques on the hearts and minds of children. The goal of most parenting and educational models is conformity. The massive promotion of technology being the new savior of just about everything creates a powerful adult expectation. Little league and adult-organized sports did the same thing. Children are compelled by nature to become that expectation. Corporate induced pressure is enormous. ²⁸

You are doing every child and the future world a disservice by encouraging Eliana and Gerra Singer, age three, to digitize their brains before they are fully humanized. The tragic deception promoted by your and all the generic ads, commercials and articles that preceded it, is that technology can replace direct, full spectrum, tactical, social-emotional intercourse with a living, fully human model environment. It can't! ²⁹

Please encourage adults, parents and teachers to NOT hold technology up as an altar of expanded human intelligence and potential. Leonardo da Vinci did not have an iPod. Einstein and Maria Montessori did not use computers. Benjamin Franklin and Abraham Lincoln did not go to school. Warren Buffet did pretty well not going to college.

Allow young children to fully develop their billions of years of innate potential by experiencing and cultivating a deep-empathic relationship with the real living three dimensional world and upon this fully developed human foundation – after age eleven - appropriately incorporate your for profit corporate virtual reality as tools to expand their connectivity – which is very different from creativity.

Failing to do so closes the doors of perception and many of the undreamed of possibilities those un-programmed dreams represent.

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5. **Magic Trees of the Mind :**
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