UBC Masters of Education Technology
ETEC 511: Foundations of Educational Technology

Assignment 2: Scholarly Paper

TECHNOLOGY EDUCATION: A HUMAN APPROACH

ROLE OF EDUCATION AS GUIDE AND MENTOR FOR THE DEVELOPMENT AND INTEGRATION OF OUR TECHNOLOGICAL, SOCIAL AND PERSONAL REALMS.

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In the digital age, technology and the internet dominate our learning environments, our workplace, and our homes. How we use and interact with technology is changing how we see ourselves and interact with one another. In the context of rapidly changing and expanding technological frameworks we must identify practices that sustain our sense of what it means to be human. Our sense of identity and the richness of our social connections play a critical role in our mental and physical development and are key factors in our success, survival and happiness. Education has played a key role in identifying and establishing healthy life practices in the past and can continue to so in the digital age. It offers a rich environment for the development of the self and provides many opportunities for the rich social interactions.

In this paper, I argue that technology is a tool, not a prime mover. This is a critical distinction for our success and potential in current and future contexts for if it is *our* use of technology that is responsible for both negative and positive outcomes in the virtual and real worlds, then we need to look far beyond identifying barriers and impediments that delay or oppose technological process. We must "wear [our] technological clothes lightly' when approaching technology and society (Selwyn, 2012) and be aware of factors and influences that drive our use and design of technological frameworks and applications.

This study could include a huge array of topics and issues. Ethics, politics, ecology, health and spiritualism are but a few. While I acknowledge the linkages and implications that exist in the context of self-awareness, education and technology, this paper, for reasons of brevity and focus, introduces a few of the many ideas, concepts and case studies that illustrate the role for education in the development of their identity and use of technology. This training or education will allow them to create rich social connections and establish life-long skills necessary to thrive and adapt to change.

In this paper, I will explore the rationale for the development of self, the unique role of education in our society, the reasons why intervention and education is necessary and the ways in which needed technological competencies, understanding and balance can be integrated into our curriculums.

THE RATIONALE FOR SELF AWARENESS

In The *Whole-Brain Child*, neuropyschiatrist Daniel Siegel presents four distinct areas of the brain. He, argues that each area must be addressed, developed and supported in order to support the integration necessary for a healthy well adjusted adult to emerge from childhood (2012). This 'integration' of the different parts of our brains that govern logic, emotion, survival and planning is assisted in focused and guided dialogues that are 'learner-centered', supportive and repetitive. These authentic interactions allow the child to make sense of their world and themselves; it encourages them to reflect on events, explore their reactions and share the experience with another. Ultimately, it asks them to build an awareness of themselves and develop empathy and understanding for others. Training occurs 'in place' or as part of the daily life experiences of the child (Ibid.).

The physiological maturation of our brain lasts well into our third decade (Siegel & Payne Bryson, 2012). During this period we form important connections, abilities and skills that assist us in our life pursuits and relationships. Our failure to develop these core skills and self awareness can result in serious health and mental issues (Maich & George, 2009). We build our identity through our experiences and the stories told we tell and share with others. How these stories are told, in tone, context and medium, greatly affects our sense of who we are and our sense of our own value and potential (Forney & Gilbert, 2013).

We must also acknowledge that not all important cognitive 'goings-on' are in the present contents of our consciousness. These hidden parts of our mind play a very important role in the

determination of our mental characters (Clark, 2003). We must see our tendency to be affected by random thoughts, personal and cultural memes and forgotten experiences. Understanding our own complicated, layered self will provide the framework we need not only to understand and connect with others, but to clearly see the external world and the constructs we live and work within.

THE UNIQUE ROLE FOR EDUCATION

John Dewey, the great 20th century American philosopher and educator wrote that *"Education is not a preparation for life; education is life, itself"* (1910). Dewey saw the value in experiences most take for granted—the everyday, simple tasks and activities of a child's life. He emphasized the need for children to play and direct their own learning through experiential, guided exploration and activity (Early Childhood Today Editorial Staff, 2000).

In the model established by Dewey, experiential learning, kindness and diversity are key elements of education (The University of Chicago Laboratory Schools, n.d.). For Dewey and the many educators that have since adopted his philosophy and methods, the two main goals are: (i) to create individuals who can investigate, reflect, creatively adapt and address complicated issues; and (ii build connected, supportive communities of lifelong learners (Ibid.).

The importance of our ability to work together and create connections that are rich and authentic cannot be overstated. We are 'radically social animals' that seek out social contact and thrive in community based social structures (Slade, 2012). We must devise educational structures and techniques that allow us to understand and maintain our self and our social connections within technological structures. We do not need to change our behavior to make our technology work better but to change technology to better fit or supplement our needs. Education practices like those proposed

by Dewey would put humans in back in the driver seat. Technology, interactive or not, is an artifact of human thought and should not constrict or define our identities or our relationships (Lanier, 2010).

LOST IN THE MACHINE

The selves we create or construct reflect the patterns of opportunity that our social, physical and technological environments provide. To a large degree, we live within the frameworks of the technology we inherit. We are also builders who constantly add, adapt and create new technologies. The rate at which our digital technologies can expand and embed themselves into our worlds far surpasses our ability to plan or predict their eventual application or impact (Lanier, 2010).

Jaron Lanier in *You Are Not a Gadget* provides the metaphor for this tendency as kneeling to plant a seed and having the tree grow so fast that swallows your village before you can rise to your feet (2010). This tendency, which is known in the computer world as Moore's Law, causes tiny, seemingly inconsequential decisions at the design and implementation stages to amplify and 'lock-in' as rigid structures and rules (Ibid). MIDI was a digital pattern built to represent musical notes on a keyboard. It was not designed to decipher or incorporate the curvy transitional notes of a singer or saxophone but despites its original intent, it quickly became the standard scheme to represent music in the digital world. Despite huge efforts to replace it with a more representative model of music and sound, it remains entrenched or locked-in to the patterns and structures that use it across software platforms and digital environments (Ibid.). Our digital musical experience is rigidly bound by the rigid key up / key down musical grid of MIDI.

If we accept that the designs we create trigger a different potential from the human user and that we are the product of our experiences and environment, then technology and its propensity to 'lock-in' and filter

diminishes rather than expands our potential and creativity. Filtering and customization create a similar effect. Our filters and customized virtual pages and search agents offer us more of a less extensive range of options. The richness of semi-random explorations in the physical realm is lost in custom search, filtered news feed and set of similar twitter minded tweets (Clark, 2003).

Even more sinister than loss of freedom and a narrowing of choice are the risks that exist for our personal security and online identities. In the digital world, a mistake made in a rash or thoughtless upload or comment can haunt and define an individual for life. Constructed, edited and hidden identities online may allow us the freedom to explore new ways of being but they also create dangers and risks at a scale and degree that are new to human interactions. Recent tragedies like that of Amanda Todd, where uneducated and unsupervised use of technology, a single reckless act, and the exploitation by another culminated in the ultimate tragedy of a young woman's act of suicide. What started as a harmless medium for self-expression very quickly led to high risk online behavior in an unsupervised environment where Amanda was highly vulnerable to online predators and exploitation (The Sextortion of Amanda Todd, 2013).

A 2010 study by the Kaiser Foundation looked at a national sample of more than 2,000 youth in the United States and found that children between the ages of 8 and 18 have an average media exposure of 7.5 hours per day. When the effects of multi-tasking and multi-technology use are incorporated, total media use is equated to 11 hours per day (Rideout et als., 2010). More than 8 of 10 students have access to internet at home (up from less than 5 of 10 in 1999) and roughly one-third of children have technologies in their bedrooms. Two-thirds of youth own cell phone devices, many of which can now access the internet, play audio and video files and double as a web cam and a camera (Ibid.). Armed with these devices and access, a vast majority of youth are now interacting online for a large part of their young lives in largely unsupervised environments.

EDUCATION AS GUIDE

In the 2013 -2014 Service Plan Report of the BC Ministry of Education, a high quality education is defined as one which

> *"… enables learners to realize their full potential and contribute to the well being of our society by developing the foundational skills of reading, writing, and math, as well as other essentials necessary in the 21st century, such as self-reliance, communication, critical thinking, inquiry, creativity, problem solving, innovation, teamwork and collaboration, cross-cultural understanding, and digital and information literacy. (British Columbia Ministry of Education, 2013)"*

This is an ambitious and commendable goal that explicitly supports the development of our identities, our social skills and our competent use of technology. But, how do we accomplish such goals in the framework of technological and virtual worlds? We need to ensure that the education system, its processes, strategies, technologies and ability to assess and adapt are also part of our study. This will build a model of education that not only demonstrates and promotes self awareness, but also creates culture of education that is curious, critical, collaborative, innovative, digitally literate and adaptive.

In such an environment, technology would not define or direct education. Technology would assume a supplemental role as medium of communication, information resource and powerful search engine. The virtual world would be made to complement, but not replace the real one. A constant practice of applying technology to real world needs and applications would ensure that this relationship is realized. This will make it possible for youth to see the boundaries of any given technology, allow them to identify and create alternatives as well as exploit the synergistic relationships between real world activities and virtual world applications (Clark, 2003).

The Inquiry Hub or IHub is a pilot project located in Coquitlam B.C. It is a small, informally structured high school based on an open learning concept. Students use technology to supplement their learning and projects on a daily basis. This balance between real and virtual establishes a practice of use and ensures that students remain connected to their peers, their teachers and the larger community. Online activities are complemented with guided, highly interactive, hands-on classes designed to encourage social interaction, promote experiential learning and self-directed study. The virtual world is used as a tool and student's practice finding and applying what is learned online to real world projects and problems [D. Truss, Vice Principal, personal communication, October 28, 2013].

IHub is a great example of how education can guide the use of technology and ensure that rich social interactions are preserved and technology is seen and used as a tool that aids not replaces activities and interactions of the real world. It is a place-based learning model where students have the opportunity to "think independently (inquiry), collect, analyze, synthesize, and critique information (data), address community opportunities and concerns, and create knowledge and innovative ideas" (Fly, n.d.). Given that children are spending so much of their time in virtual worlds, it is highly appropriate that teaching occur in the place where they are most frequently to be found.

Just as healthy lifestyle lessons on nutrition and physical exercise are introduced into the classroom (British Columbia Ministry of Education, n.d.), healthy and safe of use technology could be incorporated into the daily practices and discussion. Tough topics like sex education and addiction are discussed with intermediate and high school students in focused in-class discussions (British Columbia Ministry of Education, n.d. b). Info packages about the content covered in these discussions are disclosed in letters sent home to parents who are invited to discuss their own concerns and questions with the teacher, administrator or school counselor. A similar forum and process could be used to address issues like cyber bulling, provide guidelines for safe online practices and promote a healthy, balanced use of the

technology. Students could participate with peers, parents and teachers to develop and live by 'media plan' of their own creation. A plan recently recommended by the American Academy of Pediatrics in reaction to the negative impacts it has identified from the overuse and addiction to entertainment and online media (Healy, 2013).

CONCLUSION

In *Fool's Gold*, Steve Talbott of NETFUTUR writes that, "Our failure to recognize the truth about the technological forces we are dealing with prevents us from bending them more effectively to our own ends. We must recognize that the underlying forces of disconnection are fully as powerful as the forces that are bringing us together" (2000). The costs associated with failing to identify the risks and limitations of technological frameworks are high. Youth will be ill-prepared and at risk in the technological world they inherent. We will fail to realize our educational goals without the inclusion of a study of both ourselves and the technologies that now exist in our every environment. Education can provide a strong guiding role in the development of our identities, our social connections and our understanding of technology and best use guidelines. "Know thyself; Know technology (Clark, 2003)" and the world of possibilities is truly endless.

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