

Bringing School Change Through Technological Determinism

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Technological determinism as described by Warschauer, is a phenomena in which “the mere presence of technology leads to familiar and standard applications of that technology, which in turn bring about social change” (2003, p. 44). With this in mind, technology has been seen as a universal change agent for education (Selwyn, 1999). School districts everywhere have spent untold amounts, anticipating that these large investments would bring profound changes to student learning. However, this has not necessarily been the case; studies we have determined that technology adoption in classrooms is not wide-spread and has been problematic (Bauer & Kenton, 2005; Cuban, Kirkpatrick, & Peck, 2001; Hennessy, Ruthven, & Brindley, 2005). As with other areas within our society, technologies’ ability to affect social change has been fraught with debate (Chandler, 1995).

Barriers to Technological Determinism

At the heart of technological determinism involves reductionism, where complex issues are reduced to a part or parts (Chandler, 1995). Schools and education systems are complex entities, by reducing barriers to simple entities, we ignore important causal factors. Hence, many studies identify the lack of wide-spread technology adoption are attributed to teacher attitudes and beliefs (Cuban et al., 2001). Although a factor in educational technological determinism, there are also other variables in play.

Rapid changes in technology, which causes users to falter (Brand, 1999), creates a cycle of adoption, learning, and dismissal. In addition to changes in devices and software, there is also the complexity associated with media formats. As software evolves through the adoption cycle, users are constantly exposed to new media. Integrating these new formats and tracking them is a paramount task for most educators. Schools possess a diverse library of resources ranging from VHS cassettes to digital media servers. Coupled with technical difficulties between

incompatible software, hardware, and maintenance, these complexities have led users away from unfamiliar technology. As a side effect of these rapid changes, teachers often have very little input into the decision making process (Sugar, Crawley, & Fine, 2004). With limited input and autonomy, teachers feel a sense of helplessness in their control of technology. In order to overcome these complexities, holistic approaches look at the interconnections associated with the broader phenomenon (Chandler, 1995).

Developing Educational Uses

Educators' use of technology as a management and communication tool has resulted in efficiencies toward electronic recording keeping, communication, reporting, etc. Due to questions of reliability, schools duplicate the information they are asked to collect, store, and manage. This duplication of information resides on both computers and in paper. As a throwback to the past, paper files have become our modern day equivalents of symbolic objects for authenticity (Ong, 2002).

However, as much as school and other traditional institutions have straddled the line between paper and digital, the rest of the world has been rapidly moving towards a digital only environment. Google is a prime example. Having developed the resources and technology to gather the world's books and make them universally available (Kelly, 2006), Google is poised to become the iTunes of books. Combining their expertise to search, manage, and organize, Google is revolutionizing our ability to access knowledge. This directly impacts users because it then becomes Google who manages the obscurity; charged with the task of seeking out and obtaining permission for copyrights (Kelly, 2006). I feel that this significantly impacts schools in a positive manner.

Kelly (2006) hints that as a result of Google's actions, books liberated from copyright will become commonplace. This freeing of copyright has already begun voluntarily through Creative Commons licensing. Other initiatives, such as authors donating work into the public domain and the ultraistic intentions of open textbook initiatives serve to offer schools freely accessible content. As Google develops their repository of knowledge, I see teachers using this to their advantage as a collaborative action research tool. In addition to Google, educators are enabled by the proliferation of social media tools to pursue scholarly topics, along with planning for classroom instruction.

In this case, it is as McLuhan (1967) stated in reference to the medium; technology has the ability to enact social change. Writing is a technology that has been limited due to universalism (Chandler, 1995). In the past, writing has happened in classrooms with limited ability to create authentic situations. With the advent of word processing and Web 2.0 technologies, technology has revolutionized the art of writing. These are serious tools, enabling students to develop their ideas in the same manner as professionals. Ong's (2002) assertion that writing as a technology can only happen with the assistance of tools has never been truer. It is my opinion that writing can be a tool to create social change in two ways; i) as a metacognitive tool and, ii) through a critical literacy approach.

Because "writing is a solipsistic operation" (Ong, 2002, p. 100), it is important that educators consider this aspect in promoting writing's role in metacognition. Use of technologically enhanced tools such as blogs and wikis not only create one's ability to develop thoughts in a literal manner, it also allows for others to question and comment. Creating these opportunities allows the author to further explain and develop ideas.

In addition to making writing a reciprocal process, blogs and wikis have also been significant in enabling writers to expand boundaries in terms of audience. The audience for our writing is now far reaching; creating globally connected readers. It is through this affordance that students have a writing platform to develop critical literacy. By bringing social change through writing, we speak to “Multiliteracies” (The New London Group, 1996). It is through students’ critical participation as writers and their effect on audience; which will enable social change. Writing therefore plays a greater role in technological literacy.

I surmise through this “soft” view of technological determinism (Chandler, 1995), that new changes in technology may alter my perspective on technology’s ability to impact the classroom. However, this time has not yet arrived. In conclusion, although technology can be the lever for creating societal change, it still requires a conscious guide.

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