

# Technology and Education: Leapfrogging from Present to Future

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Let us suppose we can create a computer on an implantable chip and that this device has access to the wireless, broadband world. We would essentially provide learners with access to all information known to humans. Furthermore, suppose that learners had access to intelligent “bots” that were able to access and sort this information, carry out intricate calculations, and display results in numerous forms from simple printouts to manipulable 3D holographic displays.

The possibilities of such a chip are not out of the realm of the possible. But the really important issues are only partly technological. Rather, one must consider whether we will take the giant cultural leaps such as device implantations, enhancing humans well beyond the capabilities that go into such devices today. And we have the question of whether such devices, implantable, wearable or handheld, should be provided to youth, even to children at the preschool level.

As the power and capability of these devices advances from the crude handheld devices of today, it is understandable that they will become available to the consuming public for commercial and recreational uses. While the societal ramifications of bringing this power to the education of future generations around the globe, the potential costs of such devices dramatically change the opportunities of individuals to access information in both breadth and depth at a very early age.

While the technology looms large, in reality it is pointing to issues that we are failing to confront today, even in a world awash in information and the tools to locate, access and apply it. We have seen negative implications of information availability. For example, individuals have gathered materials on the production and deployment of weapons of destruction from simple explosives to nuclear weapons in a briefcase. The response has been reactionary, with attempts to filter, censor or limit access. The counter

response has been to ascertain ways to circumvent such obstructions or to demonstrate that such attempts are futile.

What many people tend to ignore –including school leaders- is that the technologies are becoming ubiquitous, often flying in the face of nominally prohibitive costs. Handheld devices with PDA and wireless capabilities are becoming standard tools that children and youth are smuggling into schools. Thus, the technology adoption profile of most schools is accelerating the schools' obsolescence. Simply put, the rate of adoption is mismatched with the needs of society.

What technology is pointing to is not the ability to bring more of the same or a more efficient delivery of the same into education. Rather, the technology is making visible that what the schools are equipped to deliver does not meet the needs of society, particularly within the K-16 spectrum. Not only is the technology making such fundamental flaws self-evident, *it is also providing paths that allow the current system to be circumvented*. These dynamics go well beyond current alternatives such as charter schools, home schooling, and the myriad of special programs that now serve as metaphorical bandages.

A few years ago over 100 public school administrators participated in an exercise that explored scenarios, wherein students could be equipped with handheld devices that would prompt them with answers to questions and problems. The administrators were asked to assess the realistic possibility of such devices being available in the schools. At about the same time, Palm was donating a large quantity of their hand held units to both K-12 schools and universities. The Palm devices, while not the sophisticated units of projected futures, temporally preempted the policies of the administrators who, by and large, did not support the rapid deployment of such devices. This, despite data that showed the majority of these same administrators supported the educational utility of such devices.

Technology mimics the magician's skill to surreptitiously slip the rabbit into the hat. If one worries about the next "big thing", then the changes that are already occurring can be ignored and illusion transforms into delusion, incompetence, and obsolescence. Leapfrogging and the early technologies to support it are already here. The schools risk untimely acceptance of this reality only in the future, when artificial intelligence and other currently over-the-horizon technologies are hitting the marketplace.

Then the unnecessary cycle of being out-of-phase with reality can begin again.

Together, we must learn to interrupt this cycle. Our children, youth, and the rest of us deserve it.