

How Technological Change Impacts Education

We know what we are, but know not what we may be.
Shakespeare

I think most of us agree that a college education is not only important, it is necessary - even more so as the world moves forward. Among the forces driving change is technology; few could argue otherwise. The rapid pace of change has impacted every aspect of our lives – and will continue to do so. The following table shows some of the trends and events that are the result of technological change; to say the least, they are altering our world.

Trends and Events That are Changing the World			
	1985	2005	2025
Cell phones in use	25,000	195 million	?
PC penetration	8%	58%	?
Internet hosts	<2,000	394 million	?
5-yr survival rate for:			
Prostate cancer	76%	98%	?
Ovarian cancer	40%	53%	?
RFID tags (% of products)	-	<1%	?
<i>From INSTITUTE FOR THE FUTURE BOOMERS: THE NEXT 20 YEARS</i>			

Although we sometimes tend to think of it in terms of the “toys and gadgets” that result from advances in computing power or capabilities, technological change represents much more than that. The following “broad” definition seems to capture the full import of change: *All technical, economic, and social changes that alter the way in which resources are used ... both in production and consumption.* At the time he wrote this - 1950 - S.E. Johnson, an economist with the USDA, was referring to the future of rural life in America.

Move ahead sixty years - how has and how will technological change impact higher education. If we think of this in terms of production and consumption – how can educators supply what students need?

In one sense technology has enabled the University of Phoenix to become the largest accredited private university in North America - and the leading online university. In 2008 there were 345,300 students being served on more than 200 campuses and

learning centers. Perhaps Hutinger had this in mind when she wrote “*Technology provides access to learning but does not control it.*”

In another sense, the explosion of information has complicated the situation. For instance economists estimated the total production of new information created in 2000 to be 1.5 exabytes. If you can get your mind around it, an exabyte is equal to 1 billion gigabytes. At the time (2000) this was about 37,000 times as much information as found in the holdings of the Library of Congress. ***In one year!*** A few years later they estimated the total annual production of new information to be 3.5 exabytes. This lends credence to the notion that professional knowledge will become obsolete almost as quickly as it's acquired.

John Podesta, the White House Chief of Staff under Bill Clinton, has suggested that *the American workforce is steadily becoming less educated relative to our global peers and competitors, just as better and more diverse educational opportunities are essential for our workers to maintain their justifiably famous productivity, flexibility, and ingenuity.* This is a call for action!

Technology, globalization, competition and accountability are impacting culture and civilization the world over. And with the extraordinary pace of change, (higher) education and lifelong learning have become increasingly important - not just to operate the toys and gadgets that have been spawned, but to maintain relevancy. Moreover, to make a difference in the second decade of the 21st century and beyond, we are well advised to listen to the words of Nelson Mandela - *Education is the most powerful weapon which you can use to change the world.* Hopefully, our students can grasp the significance of their opportunity, and we can stoke the flames inside.