Education: in transition from remembering to thinking.

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20th century education focused on memorizing and those with good memories scored well on exams. We memorized math tables, spelling of words, scientific and mathematical concepts. 21st century education has the opportunity to take advantage of the availability of pervasive computers containing reliable memories connected by the internet. Those that do not shift their dependence from biological memory to internet-memory will be at a competitive disadvantage.

Libraries today are book- and journal-centric. Everything in the library revolves around access to these books and journals. Library specialists have been trained to reduce the time required for us to locate relevant material, no matter whether it is out of date or not. If one walks into any medical school library - no longer is it the focus of learning. The number of jobs for shelving used material is decreasing simply because books are used less frequently than in times past.

The library of tomorrow will be internet-centric, becoming the focus of producing knowledge units that meet our needs. Just as in the past, sometimes we prefer to search the internet-memory ourselves and perhaps serendipity will smile. Other times we use search tools. Current Contents was a frequently found paperback in any researcher's office during the 80s. It is rarely seen today. The library specialist will be the individual that produces uptodate knowledge units that we can draw on as we face our daily problems.

Clearly, education, as we have known it, cannot avoid adapting to the internet era. Our learning paradigm will shift from content mastery, dependent of memorizing a large number of often unused facts to problem-based learning, where we learn a little more than is necessary to solve the problem. The library, the traditional focus of learning will shift from book- and journal-centric to internet centric. The library, as we know it, with study carols, tables and pleasant views of the campus will evolve to windowless rooms computers, mass storage devices and network routers. The library specialists will fill the role of knowledge access facilitators and consolidators so that we spend less time plowing through low yield information.

What are the signs of the change? The internet has leveled the information access playing field so that information is no longer limited to monasteries and libraries. Computing costs are negligible so that computers and the internet are accessible in the poorest regions of India. Computer speed that increased to the point where high speed analysis of potential chess positions leads to matching the capabilities of the greatest chess grandmasters.

Educational reform starts in the home, where parents must equipped their children will access to the world's information stores. Education continues in the schools were we can compress the 12 years of primary and secondary education required to memorize basic information to perhaps 6 years of understanding basic concepts and our human memory is replaced by the internet memory. Education continues within our universities and professional schools, where we can produce workers that can make significant contributions to society with less faculty and less time than at any time in the past. Why? Because the repetitive actions needed to memorize and then understand will be replaced by the repetitive actions needed to simply master concepts within the context of our internet memory.