How Long is a Cyberspace Year?


When I was a child, I was told that a year in a person's life is like six or seven years in the life of a cat or a dog. What this meant to me was that cats and dogs don't live as long as people.

However, there is a slightly different way of looking at this idea. One can talk about a "cat year" or a "dog year" as being about two human months in length. Cats and dogs grow up faster than humans. Their "years" pass more quickly.

Recently people have begun to talk about a "cyberspace year" and to ask the question, how long is a cyberspace year? The suggestion is that the rapid change in cyberspace seems to make cyberspace years pass very quickly.

**Researching the Cyberspace Question**

I decided to do some research on this topic. My first research involved seven students in a graduate seminar that I teach. I discussed the idea of a cyberspace year with the students, and I asked each to give an opinion on how many months there are in a cyberspace year. The conclusion was that a cyberspace year is about three months long. That is, things seem to change in cyberspace about four times faster than in ordinary "human space."

I also asked my students for their opinions about the length of a year in "education space." Here, it was made clear that we were talking about change, and how rapidly our education space is changing. The conclusion was that an education-space year is about 36 months in length. That is, while changes in cyberspace are going on perhaps four times faster than changes in human space, changes in education are going on about one-third as fast as in ordinary human space. Therefore, in the opinion of these students, the relative rate of change in cyberspace and education space differs by a factor of 12.

A sample size of seven doesn't make for a very convincing experiment. So, I repeated the experiment with the 50 or so people—mostly school administrators—who were attending a special symposium at a computers-in-education conference. Their opinion was that a cyberspace year is about two months in length, while an education-space year is at least 36 months in length. That is, in their opinion, the rate of change in cyberspace is at least 18 times faster than the rate of change in education space.

Wow! That is a large difference. My two "research" studies suggest that educators feel that things change in cyberspace between 12 and 18 times faster than they change in education space.

You may want to do some of your own research on this. Try out this idea on some of your colleagues and compare their opinions with the data I gathered.

**Change in Business and Industry**

If cyberspace and education space were totally unrelated, you might ask, "so what?" But, cyberspace has to do with people and machines communicating with each other. It is like a virtual library where information and telecommunication technologies can be used as aids to
solving problems and accomplishing tasks. Cyberspace and education are certainly closely related.

It is clear that our education space is making some progress in using the information technologies. We have far more microcomputers, CD-ROM drives, scanners, printers, and Internet connections than we had a few years ago. An increasing number of teachers are learning how to help their students learn about information technologies.

However, it seems clear that the pace of change in the information technologies is far faster than it is in education. That is, the "state of the art" of the information technologies is pulling away from our education space. Moreover, the pace of change in the use of information technologies in business and industry exceeds the pace of change in schools. There is an increasing gap between the information technology knowledge and skills that business and industry leaders would like our school graduates to have, and their actual knowledge and skills.

Eventually the pace of change of cyberspace and the information technology will slow. For example, in the semiconductor industry, sales have doubled approximately every 5 years for the past 35 years. At the same time, our purchasing power in the area of technology (i.e., number of components that can be bought on a dollar-for-dollar basis) has doubled in less than two years. This level of growth cannot continue indefinitely.

However, there is good reason to believe that this level of growth may continue for another 10 to 20 years. Thus, unless there is a drastic increase in the pace of change in our education space, the gap between the state of the art of the information technologies and the way they are used in our education space will continue to widen. Graduates from our educational system will be less and less prepared to function effectively in the work world.

Change in Education

It would be nice to close this discussion with a few simple solutions to the problem I have raised. Unfortunately, I don't know any simple solutions. We know that the pace of change in education can be greatly increased, because we can find examples of individual teachers and small groups of teachers who have done so. We know that far more staff development is needed than is currently available. (There is considerable support for the idea that about 30% of the total school budget for information technologies should be allocated to professional development.) We know that there needs to be a substantial increase in the amount of funding that schools have available for information technologies. (An increasing number of states are passing legislation specifically designed to increase funding for information technologies in schools.)

There are two bright spots that deserve mention. The International Society for Technology in Education (ISTE) is a member of the National Council for the Accreditation of Teacher Education (NCATE). Through ISTE's work, NCATE has instituted some information technology literacy requirements for all preservice teachers in programs that NCATE accredits. In addition, ISTE has just received a planning grant from the National Aeronautical and Space Administration (NASA) to begin work on developing national information technology standards for students. As these standards begin to emerge, many schools will use them as guidelines in making modifications to their curricula. The dual approach of preservice standards for teachers and national standards for students will make a significant contribution to improving our educational system.
Retrospective Comment 8/31/08

When this editorial was written, the idea of a Cyberspace Year was receiving quite a bit of publicity. For some reason, this is no longer the case. People accept and expect rapid ICT. Most people accept that they cannot keep up with the changes.

In some vague sense, there is a parallel with the “I can’t do math” mentality that many people in this country have adopted. It is something to brag about, rather than to be ashamed about and working to remedy. Somewhat similarly, people tend to brag about not being to understand computers very well, and that they don’t know nearly as much as their relatively young children.

It is obvious that our educational system has not given up on the idea of integrating routine use of ICT throughout curriculum, instruction, and assessment. However, it seems to me that the rate of progress continues to be slow.