Written by **Sam Blumenfeld** on June 18, 2012

Can Computers Educate?

This article was written on a Dell computer, programmed by Microsoft. I stopped using a typewriter years ago when I found out how easy it is to use a word processor, where errors can be easily corrected, and revising text is as easy as pie. Since I am a chronic reviser of just about everything I write (and rewrite!), I consider the word processor to be a Godsend. So, I have nothing against computers and technology, since I find myself a happy beneficiary of this wonderful advance in human capability.

I have also surfed the Internet and gleaned much useful information from the Web. Friends have sent me information, which they have gotten off the Internet and printed out. Accessibility to data is the great gift of the Internet, which keeps expanding each day. For example, just today I received an email commenting on an article of mine posted just the day before. They had found it on a blog that covers the particular subject I was writing about.

But when it comes to a need for an in-depth study of a subject, books are still the greatest depositories of knowledge and wisdom that we have. Books are the most convenient permanent carriers of knowledge. You can carry them anywhere, and you don't need batteries or an outlet or a modem; you can flip through pages, look things up in an index, or slowly and deliberately absorb the words and thoughts of others who speak to you through the printed page.

There are few things more beautiful than an antiquarian book, written a century or two ago, yet speaking directly to the reader from across time in the voice of a human being long departed from earthly existence. You can't get the same feel, the same connection with the past through a computer. The computer can show you a picture of an antiquarian book, but it doesn't give you the experience of holding that book in your hand, reading its ageless story, being drawn back into time past. An antiquarian book is indeed a time machine.

Also, back in the remote past, letter-writing was the only way of communicating with others. Thus, we have thousands of great letters from prominent individuals from ancient times through the first half of the 20th century telling of everyday events, some historical but most mundane, which give us the flavor of life back then. Today, the email has replaced letter writing with abbreviated words and sentences, made for quick perusal and response. The beauty of language has given way to the equivalent of grunts and groans. Email has given rise to the easy communication of trivia that clogs our computers.

Yes, the computer has its place and its uses, but when it comes to education, what indeed is its value? Schools proudly show pictures of students sitting in front of computers, learning. But what are they learning? When you bring the computer into the classroom, you can't help but think that it is a substitute for a teacher. It might be a good substitute for a bad teacher, but I still like the idea of a real live human being teaching children the basics: reading, writing, and arithmetic. But clever software developers have created programs that teach reading and math. How effective they are is another story. But with so many badly trained teachers in our progressive schools, they might welcome these

computerized programs so that they can conduct their classes as facilitators instead of teachers.

Has the computer become another edu-fad that neither teachers, nor administrators, nor students know quite what to do with? Many believe that, with or without computers, the teacher is still the most important person in the classroom. But if the teacher does not know how to integrate the computer with classroom learning, all that expensive equipment will be a huge waste and could wind up in the closet with the old movie projectors.

Back in the 1940s, I was taught touch-typing in junior high school. Acquiring that skill made it possible for me to do better schoolwork and also qualify for many future jobs for which a typing skill was a clear asset. But there was never any illusion that learning to type replaced learning basic academic skills.

Homeschooling parents find that they can easily integrate the computer with their family learning program because they generally use the computer after they teach the basics. First they make sure that their children can read, write, and do arithmetic before using the computer as a means of obtaining information. Also, homeschoolers generally recognize that the child should first be taught touch-typing before being let loose in front of a computer keyboard. If the child is permitted to develop the bad habit of hunt-and-peck, which is what is now happening in many first-grade classrooms where children are put in front of computers, then the child will not become very efficient in word processing.

The question then becomes, should the computer be used to replace the teacher, or should the child merely learn how to use a computer? The computer can teach, provided it has the right software. But what subjects should the computer teach? Nowadays, with instruction being provided by lecturers through the Internet and YouTube, the computer can become a virtual classroom. Distance learning is making it possible for college students to get their degrees without ever attending a real campus.

Such distance learning is now possible for K-12, making the classroom obsolete. But for the present, most children are still in schools with computers on their desks. If we review the edu-fads of yesterday, we recall that educators once believed that motion pictures would be the great tool for teaching. But for many kids, sitting in the dark simply put them to sleep, and much of that expensive equipment eventually wound up in closets gathering dust.

According to a report by the Benton Foundation, “Even the staunchest advocates of computer networking in education concede that in most places technical problems, inadequate training, and insufficient time for teacher to figure out ways to integrate technology with the curriculum have combined to thwart the dreams of reformers for a technology-driven overhaul of the education system.”

Undaunted by these problems, former Vice President Al Gore called for a computer at every desk, which was music to the ears of every computer company CEO. Joseph Bauers, in an article entitled “Information Superhighway May Be Road to Nowhere,” writes:

The underlying fallacy is that information equals education. … The computer … is not an information filter but a pump, relentlessly spewing forth an overwhelming barrage of data. To students who are too easily distracted, the computer is the perfect distraction machine. … Computer producers have been smart, operating as would any competent drug dealer: They gave away the first machines to the schools. Now hooked, school districts find themselves on a path of endless upgrading. The initial capital outlay, which is astounding, sets school districts on a course of spending that ultimately must take dollars away from other things. … Some schools are eliminating entire programs like art, music, and industrial education so they can spend more on computers. And in doing so, they are paying homage to a machine that has proved nothing as an instructional tool.

Apple Computer was one of the first companies to give schools free computers in the hope, of course, of finding a great market for their products. But even Steve Jobs, the legendary founder of Apple, had second thoughts about the use of their computers. He said in an interview in *Wired* magazine (Feb. 1996):

> I used to think that technology could help education. I've probably spearheaded giving away more computer equipment to schools than anybody else on the planet. But I've come to the inevitable conclusion that the problem is not one that technology can hope to solve. What's wrong with education cannot be fixed with technology. No amount of technology will make a dent.
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> It's a political problem. The problems are socio-political. The problems are the unions. You plot the growth of the NEA and the dropping of SAT scores, and they're inversely proportional. The problem is bureaucracy. …
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> There are solutions to our problems in education. Unfortunately, technology isn't it. … We can put a Web site in every school — none of this is bad. It's bad only if it fools us into thinking we're doing something to solve the problem with education. … Historical precedent shows that we can turn out amazing human beings without technology.

Apparently Mr. Jobs had acquired some wisdom about education which his colleagues in the computer industry would just as well keep to themselves. In 1996, the nation's K-12 schools spent an unprecedented $4.34 billion on computers, an amount that was expected to double by the year 2000. Indeed, there's gold in them thar schools!

Are kids performing better in school with computers? We get conflicting reports. Back on Feb. 30, 1997, Debra Saunders wrote in the *Milwaukee Journal*:

> Computers won't help kids who can't read. … Some teachers see computers as mind numbing toys with negative effects on young minds akin to those produced by watching too much television. … The *Los Angeles Times* recently reported how one local elementary school spent $500,000 and six years in state grant money on computers [but the school's test scores showed no improvement].

David Moursand, a professor at the University of Oregon who has written extensively on computers and education, provided this insight into how computers are used in the schools:

> My first big insight into using technology in education was for teachers not to waste time teaching things that could be better done using a machine. I felt that they should be using that time to teach more advanced ideas. That didn't actually happen. You can go into an elementary school today and find superb teachers still teaching children how to do long division! Their answer now is that they teach them how to do it with pencil and paper first, and then how to do it with a calculator. So what that says to me is that just because technology can do something there still exists resistance to make fundamental changes to the curriculum. This resistance seems to be due to the testing system as much as teaching practice. Over the past 15 years, there has been a gradual integration of calculators into the math curriculum that has occurred as the price of calculators has dropped dramatically and their functionality has continued to increase.

The latest efforts to spread the use of computers in education is being advanced by MIT professor Nicholas Negroponte, presently on leave, who founded One Laptop per Child, a non-profit association dedicated to providing every child with a laptop. We have still to see what the children are learning with their laptops. Negroponte's organization is very vague about what is in the laptops. We'll try to find out for a future article.