

Technology and the future of education

by Ira Nayman

TORONTO (CUP)— You log on to your personal computer and check your mail. You quickly eliminate everything that contains the phrases,

"Makes a fine addition to your collection..." and, "You may already be a winner..." (You have a filter program, but those damn advertisers always seem to be able to stay one step ahead of it.) There's a letter from Professor

Sakawa at the University of Tokyo; she has some suggestions for improvements to your first-term essay on German Expressionist films. One of your TAs in England has sent a letter suggesting where you can find the latest information on quasars. Just another typical morning at Virtual University.

Is this vision of the future of education fanciful? Perhaps. But as technology is integrated into the classroom, the learning process itself will change.

"I think there will be an extraordinary transformation of higher education," said H. Michael Stevenson, Vice-President of Academic Affairs at York University.

Three different uses for the computer are currently being introduced into education: hypertext, hypermedia and networking with remote computers. All three are available at some universities, including York.

Hypertext allows you to select individual words and phrases in a text and access additional information about them.

Say you are studying Shakespeare's Antony and Cleopatra. In hypertext, you could access: definitions of Shakespeare's archaic words and phrases, historical texts on the characters on which

Shakespeare's were based, other fictional accounts of the story, a large number of critical analyses, and even quotations from subsequent works that quote Shakespeare's play.

Best of all, you can access whatever information interests you most, in any order you choose.

George P. Landow, in the book, *Hypertext: The Convergence of Contemporary Critical Theory and Technology*, suggests that hypertext will necessarily change learning from the largely passive experience most students currently go through to a more active experience.

"Students making use of hypertext systems participate actively in two related ways: they act as reader-authors, by choosing individual paths through linked primary and secondary texts, and by adding links and texts to the document," he wrote.

Hypermedia is a combination of multimedia (including text, still photographs, animation, film, music and narrative and other media) and hypertext. As with hypertext, the viewers choose which information to access depending on their needs and interests. The difference is that hypermedia offers a richer source of material.

Say you are studying a hypermedia version of Shakespeare's Hamlet. From the text, you could access: drawings of the original Globe theatre, a variety of performances of selected scenes from the play, recreations of performances from Shakespeare's time, and text versions of the history of the Danish people.

Kim Veltman, director of the Perspective Unit at the University of Toronto's McLuhan Centre in Culture and Technology, has been developing a hypermedia program called SUMS (System for Universal Media Searching). Veltman hopes a trial CD-ROM program on Leonardo DaVinci will be available to the public by the autumn, although he ultimately sees students accessing hypermedia through their computer from on-line databases at museums and other sites.

Veltman argues that hypermedia programs like SUMS offer a lot more than traditional teaching materials: copies of original texts, simultaneous translation between languages, charts and graphs for which students can determine the parameters.

"The whole point is that the computer doesn't just reconstruct what was in the book...it makes it come alive in a new way," he said.

Veltman believes that the different paths hypermedia allows students to follow will create "a contextualization that has never been done before."

Instead of focusing on individual facts or the single interpretation of the professor, students will now be able to explore their subject in a more complex way.

One other use of computers which will have an impact on education is access to computer networks, particularly the Internet.

Eventually, students will be able to access all of the information in their and other institutions' libraries, as well as free and commercial databases. Students will also be able to send questions to any professor or other student who has an e-mail account anywhere in the world.

Most organized information is still not available on the Net, the vast information space that includes bulletin boards, free services like the Internet and commercial services like America Online.

Seymour Papert in wrote *Wired*, the hip magazine about emerging technologies, that "it will take time for the vast quantities of information available in print to be recast. But it will happen."

Students will be given more control over their education with the convergence of these forms of technology, and with more exotic forms such as video conferencing and virtual reality just around the corner. The education system "is moving towards individualized learning," said Professor Stevenson.

In particular, "Computers enable students to pursue important and deeply personal projects," Papert wrote in *The Utne Reader*. "Using them can open kids to a greater variety of ways of knowing."

This will require students to develop new academic skills: they will have to learn how to sift through and evaluate the contents of a vast information pool, whereas before they were trained to passively accept information from professors and textbooks.

With students directing their own education, some critics have suggested that professors will no longer be necessary. Most, however, see a continuing need for them.

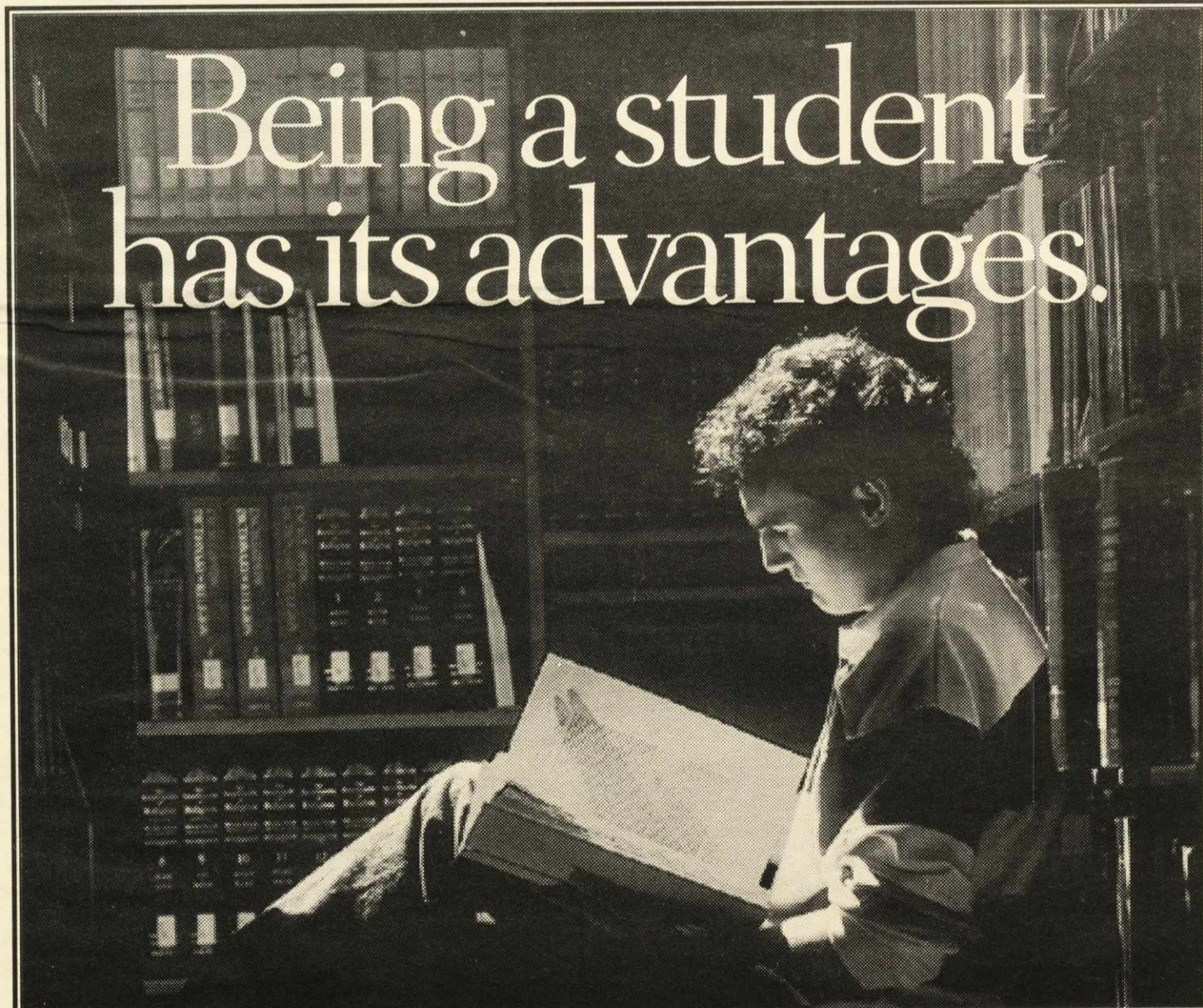
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