

INTRODUCTORY NOTE: David Gelernter is a professor of computer science at Yale University. He published this piece in The New Republic in 1994.

COMPUTERS JUST CAN'T STACK UP TO BOOKS

Computers should be in the schools. They have the potential to accomplish great things. With the right software, they could help make science tangible or teach neglected topics like art and music. They could help students form a concrete idea of society by displaying on-screen a version of the city in which they live--a picture that tracks real life moment by moment.

In practice, however, computers make our worst educational nightmares come true. While we bemoan the decline of literacy, computers discount words in favor of pictures and pictures in favor of video.

While we fret about the decreasing cogency of public debate, computers dismiss linear argument and promote fast, shallow romps across the information landscape.

While we worry about basic skills, we allow into the classroom software that will do a pupil's arithmetic or correct his spelling.

Take multimedia. The idea of multimedia is to combine text, sound, and pictures in a single package that you browse on screen. You don't just read Shakespeare; you watch actors performing, listen to songs, view Elizabethan buildings.

What's wrong with that? By offering children a candy-coated presentation, multimedia is guaranteed to sour them on unsweetened reading. It makes the printed page look even more boring than it used to look. Multimedia only increases the odds against reading.

So what if the little nippers don't read? If they're watching Olivier instead, what do they lose? The text, the written word along with all of its attending pleasures. Besides, a book is more portable than a computer, has a higher-resolution display, can be written on and is dirt cheap.

Hypermedia, multimedia's comrade in the struggle for a brave new classroom, is just as troubling. It's a way of presenting documents on screen without imposing a linear start-to-finish order. Disembodied paragraphs are linked by theme; after reading one about World War I, for example, you might be able to choose another about the technology of battleships, or the life of Woodrow Wilson, or hemlines in the '20's.

This is another cute idea that is good in minor ways and terrible in major ones. Teaching children to understand the orderly unfolding of a plot or a logical argument is a crucial part of education. Authors don't merely agglomerate paragraphs; they work hard to make the narrative read a certain way, to prove a particular point. To turn a book or a document into hypertext is to invite readers to ignore exactly what counts--the story.

The real problem, again, is the accentuation of already bad habits. Dynamiting documents into disjointed paragraphs is one more expression of the sorry fact that sustained argument is fading rapidly.

Another software species, "allow me" programs, is not much better. These programs correct spelling and, by applying canned grammatical and stylistic rules, fix prose. In terms of promoting basic skills, though, they have all the virtues of a pocket calculator.

Prose-correcting programs are also a little ghoulish, like asking a computer for tips on improving your personality. On the other hand, I ran this essay through a spell-checker, so how can I ban the use of such programs in schools? Because to mis-spell is human; to have no idea of correct spelling is to be semi-literate.

There's no denying that computers have the potential to perform inspiring feats in the classroom. If we are ever to see that potential realized, however, we ought to agree on three conditions.

- First, there should be a completely new crop of children's software. Most of today's offerings show no imagination. There are hundreds of similar reading and geography and arithmetic programs, but almost nothing on electricity or physics.

Also, they abuse the technical capacities of new media to glitz up old forms instead of creating new ones. Why not build a time-travel program that gives kids a feel for how history is structured by zooming you backward? A spectrum program that lets users twirl a frequency knob to see what happens?

- Second, computers should be used only during recess or relaxation periods. Treat them as fillips, not as surrogate teachers. When I was in school in the '60's we all loved educational films. When we saw a movie in class, everybody won: Teachers didn't have to teach, and pupils didn't have to learn. I suspect that classroom computers are popular today for the same reasons.

- Most important, educators should learn what parents and most teachers already know: You cannot teach a child anything unless you look him in the face. We should not forget what computers are. Like books--better in some ways, worse in others--they are devices that help children mobilize their own resources and learn for themselves.

The computer's potential to do good is modestly greater than a book's in some areas. Its potential to do harm is vastly greater--across the board.

ESSAY TOPIC

Why does Gelernter criticize the use of computers in our schools? What do you think of his views? Write an essay responding to these two questions. Be sure to develop your essay by discussing specific examples drawn from your own experience, your observations of others, or any of your reading--including "Computers Just Can't Stack up to Books" itself.