Stephen Marcus

Computers and English: Future Tense . . . Future Perfect?

Efforts to predict the future of educational computing are particularly chancy, given its rate of change. To paraphrase Alfred Bork at the University of California, Irvine: “By the time the technology’s free of bugs, it’s obsolete.”

So you can make a monkey out of yourself trying to predict the future of computers in the teaching of English. Since that’s what I regularly spend part of my time doing, it’s of only small comfort to know that at least I’m in good company—for the ancient Egyptians, the god of text and writing took the form of a baboon.

Mentors aside, I took part in a “Delphi Study” about three years ago to predict changes (either positive or negative) that might occur during the next fifteen years resulting from the impact of technology on the teaching of writing. What follows is an update and expansion of that original study, along with some comments based on recent events. In later sections of this discussion, I’ll suggest some ways to anticipate previous crises and to make the most of the inevitable.

People will stop confusing real paper with virtual paper. Most of us still think of a word processor as merely a means of producing a printed document. That’s like thinking of film as a way to document plays, which after all don’t have montage, closeups, split screens, and so on. Technology that allows the creation of hypermedia (i.e., extended, interlinked “documents” that include sound, animation, graphics, and video) produces “writing” that exists as process, not product. At the very least, as William Miller predicted to the Modern Language Association (1983), “scholarly publishing...will [move] to a paperless, computerized mode, and university administrators will shake their heads in wonder at the antiquated humanists who insist that a large share of the library’s resources be spent on books and magazines so clearly doomed to physical extinction.”

Grading will become more dependent on the kinds of data available from style checkers. All of the controversy about style checkers doesn’t seem to deter efforts to develop more of them. Some research suggests that teachers grade papers on completely different dimensions of writing; nevertheless, style checkers will continue to be a particularly “easy sell” to those who have a penchant for quantifying information.

More education will take place in the home through instructional databases and telecommunications networks. Many of these will be provided by commercial sources, not educational institutions. These developments will be intensified as companies take savvy approaches like America OnLine, in which a telecommunications system is presented within an entertainment metaphor. The growth in tele-commuting (i.e., working at home on computers tied into office systems) will help establish norms for tele-education systems.

Writing labs will become like studio art courses, in which instructors can monitor and give immediate feedback on students’ developing texts—and have their advice almost as quickly incorporated into the emerging documents. This may sound pretty good, but some teachers are troubled by the consequences. They think students become too dependent on easy access to teachers’ help in all stages of the composing process. In addition, some teachers who want to see discrete “drafts” of students’ writing complain about no longer being sure how to define such a “draft,” given the rapidity with which students revise their work. Other teachers aren’t sure who should be getting the grade in such “collaborative” writing environments.

Software that generates its own text will change the nature of writer-text-reader relationships. Early plans for IBM’s EPISTLE project envisioned the computer’s reading incoming letters, taking note of key words, and generating memos based on the stored writing style of the person responsible for the reply. While this work remains uncompleted, it has in its own way been anticipated by the automatic signature machines already widely used.

Spelling and style checkers will make it even harder to convince students to learn many of the basic skills.
Unfortunately, just as a great many teachers are still unsure about the power relationships between computers and people, students are prone to thinking that the machines will solve their problems. This is an issue of attitudes and expectations as much as technology.

Handwriting will degenerate for more students. In general, it will develop as one of the fine or applied arts. There are reasonable people who question the need for students to learn handwriting (as opposed to printing) in the first place. The increasing accessibility of software that allows and encourages people to "design" their documents may lessen many people's willingness to depend on—or develop—their handwriting, the legibility of which is most probably a source of indifference or shame. The recent interest in "stylus" technology and handwriting recognition software may serve to standardize script rather than allow us our scribal idiosyncrasies.

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Readers may want to fine-tune, omit, or add certain items—as well they should. It is, in fact, less important whether such predictions are accurate than that by concentrated efforts to articulate them, they aid any novice oracle in applying focused attention and insight to a problematic but fascinating field.

The future of literacy—that is, the nature and proficiency of reading and writing skills—is as uncertain now as it has always been. Pessimists note that history provides ample evidence for questioning the desirability of "technological progress." In fact, when I first started working in the field, most English teachers proudly turned their backs on the future, ignored the present, and faced the past with hope and determination.

The optimistic view, of course, is that computers and related technologies are providing new and increasingly rich environments that both enhance and transform students’ capacities. The stability and vitality of the profession depend on talented teachers who acquire an informed exuberance. As usual, they'll be a major force in making the most of what the technology and their students offer them.

Having suggested some possible future effects of technology on reading and writing, I'd like to recommend some books to help us prepare for the near-term and distant future.

To begin, I'll briefly describe several different "reports," each of which provides a compelling account of some of the foundations of our future. This is a partial reading list for those who wish to understand the source, nature, and direction of trends in hardware, software, and "neural wetware" (i.e., our own brains). Each book could be described in the same terms Sherry Turkle uses to characterize the "holding power" of computers. These books fascinate, they disturb equanimity, they precipitate thought.

I'll also note two books that focus specifically on technology and writing. These texts make direct and revealing connections between technology and teaching.

*Machines Who Think*, by Pamela McCorduck (W. H. Freeman and Co.). Can machines think? Well...can human beings fly? The answers to both questions depend on the level of abstraction at which they're asked and on the historical moment in which they're posed. McCorduck addresses the issues of "artificial intelligence" (AI) at a variety of levels, and she does so at a time when AI has undergone a quantum jump in sophistication. She explores the major objections to the very notion of AI and provides a fascinating history of attempts to refute them. She traces AI's roots in philosophy, ethics, religion, literature, psychology, and the arts (as well as the sciences), noting that AI practitioners are "as lively a group of poets, dreamers, holy men, rascals and assorted eccentrics as one could hope to find—not a dullard among them." Her account tells us as much about our own intelligence as about the capacities of our artifacts to mirror, or mock, or surpass us.

*The Second Self*, by Sherry Turkle (Simon and Schuster). Turkle provides a Piagetian study of people and computers. Her focus is on "the machine as it enters social life and psychological development....The question is not what will the computer be like in the future, but what will we be like?" While McCorduck's work focuses more on the major figures in AI development, Turkle provides extremely rich and provocative insights into the broader computer-using culture—including the kids in our classes. She identifies stages of people's concerns (e.g., metaphysics, mastery, and identity) and qualities of each stage (e.g., hard and soft mastery). She articulates the broad dimensions of people's relationships to the technology and the nuances of these relationships. Her writing, like McCorduck's, is informed with intelligence, sensibility, and humor. Both authors appear quite distinctly as real persons writing about other very real people, and the tales they tell are clearly worth hearing.
Are Computers Alive? by Geoff Simons (Birkhauser). Even if you’re comfortable with typical dimensions of AI development, you may experience some difficulty with notions of computer chips based not on silicon but on carbon-based life forms, of robotic sexuality and reproduction, of civil rights for computers, and of computer liberation. Simons isn’t uncomfortable. He is chief editor of England’s National Computing Centre. His “central thesis [is] that computers and robots . . . can be properly regarded as emerging life forms.” The arguments against computer life will be frequently addressed in this book, until it is clear that they have been outflanked by events. Simons’s book is at times hard to like and difficult to accept, but it is a valuable resource and protection against easy answers to difficult questions. “We will soon not be asking whether computers and robots are alive, but what sort of life they represent.”

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The Robots of Dawn, by Isaac Asimov (Doubleday). This is a science fiction novel. On its own, it wouldn’t necessarily stand out as a guidepost to the future. In the context of Simons’s book, however, it provides an intriguing vision of a society trying to resolve its attitudes about technological life forms—dealing with most of the very issues that Simons raises. As a kind of murder mystery, Asimov’s book, in part, struggles with the question of whether a robot can be said to have been “killed,” as opposed to merely destroyed, damaged, or demolished. The story is filled with events in which robots are victims of a kind of “racism.” The cultural milieu is such that, while robots are treated as “second-class citizens,” they are by that very fact taken to be in some meaningful way “alive.” Asimov’s and Simons’s books thus make a fascinating pairing. One might respond to Simons’s scenarios by asserting that “by no stretch of the imagination could this guy’s ideas be taken seriously.” Asimov’s imagination, however, is more than equal to the task, and he does us a service by exercising it with his usual story-telling power.

The Man Who Mistook His Wife for a Hat, by Oliver Sacks (Harper & Row). Those of you familiar with this book may well wonder why I’ve included it here. It deals, after all, not with artificial intelligence but with aberrations in real intelligence, the “inconceivably strange . . . world of the neurologically impaired.” These patients are “travellers to unimaginable lands—lands of which otherwise we should have no idea or conception. . . . The scientific and the romantic in such realms cry out to come together.” This book does not relate directly to the future impact of technology. Instead, it serves both to remind us how fragile and precious are our capacities for consciousness and thought and to keep us humble as we presume to decide what the future (or for that matter, the present) can or cannot hold. Sacks’s accounts illustrate the tenuous nature of how “what makes sense” depends to a great extent on the idiosyncrasies of what we’re using to make sense with.

Even with provocative and illuminating resources we have the problem of deciding how to focus our attention, how to structure our reading of current events and developing trends—particularly as we attempt to understand and make good use of developing technology. One useful device has been provided by Paisley and Chen in a Stanford University study of “Children and Electronic Text” (Institute for Communication Studies, 1983). These researchers framed a series of questions about the effects of present and future technologies on literacy. Their overall question was this:

Who learns what from which technology and with what effects on other learning and behavior, and when does this all take place?

This framework is useful for organizing and understanding the developments we see reported everywhere—in newspapers, teacher-training center newsletters, professional journals, and in our every-day experience. In elaborating their framework, Paisley and Chen discussed the following clusters of questions:

Who? That is, what socioeconomic groups are acquiring access to the technology? In what gender ratios? Which groups are making use of public access systems (including libraries and museums)? Within social groups, what are the roles and personality types of those making greater or less use of the systems?

Leans what? That is, what content sources are available and which ones are actually being used? What levels and kinds of learning are being attained? What benefits are being derived from casual versus directed use of the systems? What unintended learning outcomes are evident?

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merly served by the Area III project. Source of matching funds: UC Davis University-School Programs.

John Dorroh (Mississippi State University Writing/Thinking Project). Grant: $750 (375/375). Purpose: To support the publication of key excerpts (Golden Lines) from the journal expressive writings of students in high school science classes. Likely source of matching funds: Bryan Foods and Blazon Chemicals.

Ronald Tirpak (Pennsylvania Writing Project). Grant: $1000 (500/500). Purpose: To support the initial development of a school-wide Writing Strategies Center by the four NWP Teacher Consultants who teach in the same Swarthmore, Pennsylvania school. Likely source of matching funds: Ridley School District.

Carolyn Tragesser and Susan Hodgins (Northwest Inland Writing Project: University of Idaho). Grant: $2000 (1000/1000). Purpose: To support the publication of a school-wide literary magazine and related activities for seventh, eighth, and ninth grade students in Moscow, Idaho. Likely source of matching funds: Community Service Groups and local school district.

Jennie Kirby (Chicago Area Writing Project). Grant: $1000 (500/500). Purpose: To support the publication of a student poetry anthology and to support related poetry club activities in an inner city, low income, low performance Chicago school. Likely source of matching funds: George Gershwin School.

Annie Smith (Mississippi State University Writing/Thinking Project). Grant: $2100 (1050/1050). Purpose: To support a teacher research project involving both parents and students and to examine the impact on student attitudes toward writing by video-taping low-achievement students reading and performing their own written pieces. Likely source of matching funds: Chapter I.

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LETTER TO THE EDITOR
Dear Editor:
For a phenomenological study of the writing process and its psychological effects on writers, I am soliciting narrative accounts from anyone who wishes to contribute to this project. Direct quotations from material I receive and use will be fully acknowledged. Also, I will reimburse you for postage costs. Please send narrative accounts to John Warren Van Ness, Box 245, Auburn, IA 51433. And thanks in advance for your participation and comments.

Sincerely,
John Warren Van Ness

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Reference

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