

Why Philosophers of Education Should Care About Technology Issues

Nicholas C. Burbules

University of Illinois, Urbana/Champaign

There are several different genres one can choose from in serving as a PES respondent. One is the “Yes, but...” form of response. Another is the “Yes, and...” form of response. My comments on Doug Kellner’s essay fall into the latter category. He has put some important issues on the agenda about the impact of new information and communication technologies in education which require serious philosophical attention. His most important point, I think, is that we need to get beyond the technophilic and technophobic dichotomy and adopt instead an engaged, critical stance toward these changes. My basic purpose here is to extend this argument, to suggest why philosophers of education need to engage these issues critically *and* productively.

I want to emphasize two basic perspectives on these new information and communication technologies: first, that we must address the new possibilities for learning with and through these technologies, while realizing that they are not neutral, not just mediums through which information flows; and second, that we need to emphasize the importance of learning *about* these technologies — learning what they can *and cannot* do for us educationally, learning about their unintended consequences and effects, and learning about how these technologies change us and not only serve our purposes. These are the kinds of fundamental questions about which we philosophers are trained to think.

Here are a few of the profound and complex philosophical questions raised by new information and communication technologies in education:

Ontological issues: What does “virtual reality” mean? In what ways does the *virtual* represent a category of being and action different from the conventional dichotomy of the real versus the artificial, or imaginary?

Epistemological issues: How does information become knowledge? How can the tools and resources made available through new information and communication technologies support new ways of constructing knowledge? In what ways do networked systems foster *distributed* systems of knowledge?

Ethical issues: What does the interconnection of digital records of our financial transactions, purchasing habits, medical records, travel, online communication, Web browsing, and so on, portend for our sense of privacy? Should school, teacher, and student educational records be made more easily available or more protected? Should these cases be treated differently? Do traditional categories such as “public” and “private” help in capturing these issues? What dangers does a networked system of personal information pose?

Identity issues: What are the boundaries of your “self” when you are online? How is an online identity or persona different from one’s “true” self? What happens when people start *preferring* their online identities or personae?

As philosophers of education, we need to recognize that we are in the midst of a *transformative* moment in education. I do not think that most people realize how thoroughgoing a set of changes educational practices and institutions are going through, and how quickly it is happening. As Kellner says, these information and communication technologies have enormous implications for the organization of schools, for funding opportunities, for new forms of pedagogy, for new approaches to curriculum, and for the relation of schooling to work and other life opportunities.

Neither Kellner nor I are celebrating all of these changes. But it is not simply a matter of saying whether this is for better or for worse — in many ways it may turn out to be for the worse. The dangers are just as momentous as the opportunities. But that is all the more reason why we need to engage them, even if it is more knowledgeable to criticize them.

Let me itemize just five of these dangers:

(1) We are on the verge of creating an information caste society — more than just a “digital divide,” a permanently two-tiered division on a global scale: between a wired community having access to education, employment prospects, cultural resources, avenues of political participation, and opportunities for social interaction that are qualitatively and quantitatively superior to those of the have-nots; and a wider population who act primarily as online consumers, if they have access at all. Worst of all, because of the nature of the opportunities and experiences available online, those “in the loop” will gain even further advantages over time, leading to an enduring, self-perpetuating division and stratification.

(2) We are also witnessing a vast commercialization of education, at all levels, and a blurring of the boundaries between educational resources and advertising through corporate-sponsored content. Education is increasingly regarded as a potential for-profit enterprise, certainly at the post-secondary level, but also through private schools and for-fee training opportunities available to K-12 learners as well. Many of these alternatives are available online, where the language of marketing, deregulation, and brand-name recognition has fallen easily into the discourse of educational entrepreneurship. Online education has the potential to increase access to learning opportunities; but if it takes overly commercial paths, it could have the opposite effect instead.

(3) One aspect of this commercialization will be a rise in *edutainment*, hybrid products designed to attract and hold the attention of a media-savvy, wired generation. There will be a closer link to popular culture: for example, using fictionalized historical narratives like “Amistad” as part of a history lesson, taking advantage of Sesame Street’s curriculum *and* very popular product tie-ins, making rap videos a part of the social studies classroom. With these relationships will come new occasions for exploiting the curriculum for commercial purposes — hence Kellner’s important concern with *critical, multimedia* literacies, helping students to become more discerning and resistant to such forms of manipulation.

(4) Online education and the increased use of information and communication technologies in schools will mean greater choice and access to quality materials *for some*. I think we are likely to see a vast deregulation and decentralization of educational providers. In this new world, distinctions like public/private, government/industry, or secular/parochial will be harder to maintain.

(5) The four walls and the daily schedules of schools will no longer be the boundaries of educational activity and opportunity. The trend toward deinstitutionalization will mean more possibilities, but less clear lines of accountability. The ideal of the public, common school system will eventually become an anachronism, I believe.

At the same time, *and sometimes in the same respects*, these new information and communication technologies introduce some exciting educational possibilities (and here again I will stick with five examples for symmetry):

(1) Information and communication technologies can provide more opportunities for constructivist and problem-oriented learning: using simulations, exploratory environments, giving learners the chance to make connections and not only absorbing content decided by others.

(2) Information and communication technologies can provide more opportunities for social learning, creating a *collaborative space* in which participants can interact, sometimes over a global distance, with common resources, texts, models, or learning environments, and learning with and through interactions with other learners who are different from them.

(3) Information and communication technologies can provide more multimedia learning opportunities, especially through *visualization* technologies that allow experimentation with new ways of representing information — for example, *Mathematica*, which allows learners to *see* changing mathematical relations as you input new variables, or dramatic representations of literary texts (observing film clips of different interpretations of a scene from Shakespeare). What might it mean to reconceive much of education around primarily visual, as opposed to text-based, media?

(4) Along with visualization also comes *virtualization*: access to learning environments that can only be experienced online (remote instruments that allow learners to observe or measure phenomena they could never witness firsthand, increasingly rich and complex *simulations* of scientific or social situations, or three-dimensional virtual spaces or objects that can be explored in an open-ended way).

(5) The term “distance education” to describe these new learning opportunities is increasingly anachronistic. Distance is no longer the primary factor in determining access to educational opportunities or resources. An important learning opportunity, then, involves interaction, communication, and shared experiences across a global scale, and exploring the possibility of new forms of community, the new public spaces that can be fostered in the networked world.

These sorts of changes, whether one criticizes them or celebrates them, or sees in them the potential for both good *and* bad educationally, need to become more central to our concerns as philosophers of education, I believe. They need conceptual and normative analysis and critique, and we need to be involved with the discourses about *where* and *how* these new technologies can be educationally productive. I say this with some urgency, because I am not sure that most people realize the scale, scope, and speed of the changes we are talking about. These changes are happening very rapidly, and in a self-accelerating way: they build upon themselves, exponentially.

I was at University of Illinois when the first experimental web browser, Mosaic, was being developed there and distributed for free use in 1993 or 1994. Within *five years*, every major corporation had a web site, enormously wealthy and influential web companies like Yahoo or Amazon had sprung into being and become household names, every political candidate needed to have a web site, and we decided that every school had to be wired into this thing called the World Wide Web. Think about it: *five years*. Does anyone think they have a clear idea of what these changes will look like five years from now?

In closing let me mention a few very important future trends you may or may not be aware of, whose implications for education are far from clear today:

(1) Access to much higher bandwidth connections, sometimes called the Internet 2, will allow for the transmission of much larger amounts of data, including real-time high-quality video streaming. There will be less reliance on text-only or voice-only communication, and more audio-visual conferencing; as well as access to rich visual resources, very large amounts of data, and highly complex, interactive simulation environments.

(2) More and more people will have cable or DSL access that can be open 24 hours a day, seven days a week. This continuous access will turn the computer into more of an appliance, where you look for phone numbers, recipes, weather reports, news updates. For students, this will mean that the opportunity for learning can extend far beyond the limits of the school day.

(3) A “computer” will cease being seen as a separate, stand-alone invention. Information and communication capabilities will be integrated into more and more technologies: refrigerators, bathroom scales, clocks, automobiles, and so on. For example, cars will include directional programs that will identify your location and recite precise directions to the nearest hospital when you need one, or the distance to the next gas station on the highway; your refrigerator will help you identify how long certain items have been sitting on its shelves. “Ubiquitous computing,” as it is called, means a fundamentally different way of interacting with the tools and appliances of our daily lives, and of their interacting with each other.

(4) As just noted, these systems will be highly interconnected: cell phones and personal digital assistants (PDA’s), for example, will be integrated with wireless Internet access, and through the network to myriad other information

and communication systems. You can leave home and check to make sure you turned the coffee-maker off; or you can order a cappuccino at Starbucks, have your credit card automatically charged for the purchase, and pick it up at the drive-through window; or it can alert you when certain items you buy routinely are on sale at the grocery store. The benefits here for convenience and for real savings in cost will make such resources irresistible (for those who can afford them).

(5) Finally, we are already seeing the rise of a generation of “digital youth,” young learners for whom these changes are entirely familiar and taken-for-granted. I do not think we have ever witnessed such a period, in which students have vastly better knowledge and skills in an educationally important area than the teachers who are responsible for their learning. For this generation, interacting with information and communication technologies means something very different than it does for their elders: they use them differently and perceive them differently. This is a generation who, across global boundaries, are in many respects much more like each other than they are like their grandparents within their own societies. The educational implications of this shift will be profound.

In conclusion, I think that for people who are reflexively skeptical — and rightly so — about education’s relentless search for the Next New Thing, the typical responses to these trends is either “it is not anything *fundamentally* new” or “it is a passing fad, like educational t.v.” Frankly, I think this attitude is reinforced by people being intimidated by this whole new vocabulary and set of skills. So it is easier to discount its importance. Computers can have a way of making intelligent people feel very, very slow and stupid, and we do not like that. Besides, who has the time to learn how to make a web page? Do I really want to be receiving a hundred email messages a day? Or, another typical response is, I do not do technology, I do X — moral education, critical thinking, feminism, or epistemology.

That is a mistake. First of all, this is not educational t.v., and it is not going away. As Kellner notes, we are in the midst of a transformation of work, culture, and social life — and very little, certainly not the world of education, will look like it does today ten years from now. Second, it is precisely those who study moral education, critical thinking, feminism, and epistemology who need to be concerned with the ramifications of these new technologies. The access and equity issues alone are crying out for philosophical clarification and advocacy. If we do not do this, who will? And if not now, when?