apparently idealistic projects raise a host of other questions and concerns related to how educational systems function and how learning occurs. Although some may hope that certain ICT applications could be a potential "silver bullet" to resolve issues related to education both nationally and globally, the realities involved in adopting these applications are much more complex. With regard to a system like education, one that functions often more ecologically than like a machine, the introduction of new tools, no matter how technologically advanced, may have a wide variety of consequences.

All of the authors in this chapter consider how and why information and communications technologies are being used in education today and what some of the effects of this use might be. Diane Ravitch, in her essay "Promise and Peril," considers how it is impossible to generalize regarding the use of technology in education since some applications have had very positive effects while others appear much more threatening. In his essay "Mobile Phones, Digital Media, and America's Learning Divide," academic S. Craig Watkins writes about the ways in which technology may not be so much changing things in education as reflecting how much things stay the same: The digital divide between those who have access to specific types of technology and those who don't reflects the learning divide that has existed for more than a century in the United States. Andrew Delbanco compares current technological initiatives related to education to those from the past in his article "MOOCs of Hazard," proposing that many nontechnological factors related to the state of higher education today may make today's technological projects succeed in a way those from the past did not. Responding to the reality of MOOCs in higher education, members of the Philosophy Department at San Jose State University lay out the educational and social justice issues at stake in their adoption in their "Open Letter to Michel Sandel [Regarding His JusticeX MOOC]." Finally, in "Video Games and the Future of Learning," David Williamson Shaffer, Kurt Squire, Richard Halverson, and James Paul Gee consider the ways in which video games incorporate many features of ideal learning environments.

Diane Ravitch
"Promise and Peril"

2013

Diane Ravitch is Research Professor of Education at New York University. She is the author of more than twenty books. Her most recent include *Reign of Error: The Hoax of the Privatization Movement and the Danger to America's Public Schools* (2013) and *The Death and Life of the Great American School System: How Testing and Choice Are Undermining Education* (2010). The recipient of numerous awards, including the Delta Kappa Gamma Educators' Award, and the Distinguished Service Award from the National Association of Secondary School Principals in 2011, Ravitch also publishes work frequently on her website, which received 8.3 million page views in 2013. In this essay Ravitch considers the promise and perils of technology as it is currently being used in education.

What have been the effects—both positive and negative—of various technological tools on your educational experience?

Technology is transforming American education, for good and for ill. The good comes from the ingenious ways that teachers encourage their students to engage in science projects, learn about history by seeing the events for themselves and explore their own ideas on the Internet. There are literally thousands of Internet-savvy teachers who regularly exchange ideas about enlivening classrooms to heighten student engagement in learning.

"Technology is transforming American education, for good and for ill."

The ill comes in many insidious forms.

One of the malign manifestations of the new technology is for-profit online charter schools, sometimes called virtual academies. These K-12 schools recruit heavily and spend many millions of taxpayer dollars on advertising. They typically collect state tuition for each student, which is removed from the local public schools' budget. They claim to offer customized, personalized education, but that's just rhetoric. They have high dropout rates, low test scores and low graduation rates. Some have annual attrition rates of 50 percent. But so

long as the virtual schools keep luring new students, they are very profitable for their owners and investors.

Another dubious use of technology is to grade essays. Major testing companies such as Pearson and McGraw-Hill are using software to score written test answers. Machines can grade faster than teachers, but they cannot evaluate factual statements or the imaginative use of language. A student may write that World War II began in 1839, and the machine won't object. Students will learn to write according to the formula that the machine likes, at the expense of accuracy, creativity and imagination. Worse, the teacher will abandon the important job of reading what his or her students write and will be less informed about how they think. That is a loss for the quality of education. Frankly, it is a problem with online assessment in general, as the job of testing is shifted from the teacher to a distant corporation; the last round of state testing saw computer breakdowns in several states. In addition, it is only a matter of time until students hack into the tests.

5 The most worrisome use of technology is to accumulate and store personal, confidential data about every public school student. The Bill & Melinda Gates Foundation put up close to $100 million to create the Shared Learning Collaborative, now called inBloom, with partners Wireless Generation (owned by Rupert Murdoch's News Corporation) and Carnegie Corporation. It will gather student data from several districts and states, including New York, Georgia, Delaware, Kentucky and Louisiana (some of these states are reconsidering because of objections from parents). The data will be stored on a cloud managed by Amazon. On the cloud will be students' names, addresses, grades, test scores, disability status, attendance, program participation and many other details about students that teachers and schools are not allowed to release.

Who needs all this personal information, and why is it being shared? Advocates say that the goal is to create better products for individual students. Critics believe that the information will be given or sold to vendors, who will use it to market products to children and their parents. No one knows whether the data will be secure; snoops frequently hack into databases and clouds.

Until recently, the release of personal student data without parental consent would have been prohibited by a 1974 federal law known as FERPA (the Family Educational Rights and Privacy Act). In 2011, however, the U.S. Department of Education revised the FERPA regulations, making this data project legal. The electronic Privacy Information Center (EPIC) has sued the

Department of Education in federal court for watering down FERPA and allowing students' data to be released to third parties without parental consent.

Here is the conundrum: teachers see technology as a tool to inspire student learning; entrepreneurs see it as a way to standardize teaching, to replace teachers, to make money and to market new products. Which vision will prevail?

Analyze

1. What, according to Ravitch, are some innovative uses of technology by teachers?
2. What three uses of technology in education does Ravitch express concern about?
3. What are the stated and proposed benefits of each of the three?
4. What are the specific drawbacks of each according to Ravitch?
5. What is FERPA and how does its repeal relate to the inBloom initiative?
6. According to Ravitch, what is "the conundrum"?

Explore

1. Review the three dubious uses of technology that Ravitch discusses in her article. In a short essay, explain which of the three you believe is of greatest concern. Why?
2. In response to Ravitch's essay, reflect on what has been one of your best and one of your worst educational experiences involving technology. In one or two pages, describe each. Then, read over what you have written and compare these experiences to one another. What distinguishes them? What factors contributed to the success of one experience? What factors contributed to the lack of success of the other?
3. The emergence of for-profit online charter schools and machine-grading are two specific concerns expressed by Ravitch in relation to technology and education. Do some research on one of these issues. Then, based on your research, write a letter to Ravitch in which you describe your findings, your sources for these findings, and how your findings either confirm or contest her concerns about online charter schools or machine-grading.