

Oversold & Underused: Computers in the Classroom

T. A. Callister, Jr.
Whitman College

Main Article

Larry Cuban, in his latest book, *Oversold and Underused*, asks a straightforward question: “Are computers in schools worth the investment?” (p. 175) His answer, as one might suspect from the title of the book, is no, they are not worth it. Cuban then sets out to demonstrate this using a combination of case studies, classroom observations, on-site surveys and statistical data, all mixed with a liberal helping of historical background.

Cuban’s first chapter, his introduction, begins with a brief history of educational reform. He argues that up until the previous couple of decades, school reforms that were meant to solve problems, real or imagined, were fundamentally egalitarian and democratic at heart — they acknowledged and respected the democratic purposes of schools. Says Cuban: “Education was one and the same with the public good” (p. 8). Beginning in the mid-1980’s, however, things began to change. Schools were seen as having a pivotal role in the U.S. economy (at the time, mostly in the negative sense of perpetuating mediocrity) and school reform began to be seen as a means to maintain the country’s economic well-being and global preeminence. This change, according to Cuban, has had an important downside: “. . . this economic justification for schooling, coupled with faith in technical solutions for complex problems, has overwhelmed the civic and moral purposes for schooling children and youth that dominated throughout most of U. S. history” (p. 7). This is a concern Cuban returns to at the end of his book.

If schools are to focus on economic concerns, patterning themselves on corporate models, then what better tool to accomplish such reforms than the computer? According to Cuban, in the last decade a “disparate but powerful ad hoc coalition” of computer boosters have united around three goals for the use of computers in schools: make schools more efficient and productive, make teaching engaging and connected to real life, and prepare students for the workplace of tomorrow.

Accomplishing these goals requires: 1) creating a new technological infrastructure where all schools are “wired” and students have access to computers and related devices, and 2) an educational infrastructure where computers are integrated into the curriculum and teachers are trained and prepared to teach with technology. This, in turn, requires a massive investment in technological and educational resources. Cuban cites figures that estimate that expenditures on the technological infrastructure alone reach several billion dollars annually.

And thus the question: is it worth it?

The next four chapters provide several case studies of the use of computers in Silicon Valley schools. Silicon Valley was chosen because of its location as the epicenter of technological innovation; a place where “technology cheerleaders and resources are abundant” (p. 18). Certainly, reasons Cuban, if the use of computers shines anywhere, it will shine here. Within Silicon Valley, seven preschool and kindergarten

sites, two high schools, and one university, Stanford, were chosen for investigation^[1] using two guiding questions: how often and in what ways are computers being used in classrooms, and how has the availability of computers changed approaches to teaching and learning. In a few cases, Cuban presents vignettes of creative and innovative uses of computers in teaching -- ways in which the computer has actually changed what happens in the classroom. Overall, however, his conclusions for all three levels of schooling are essentially the same: the educational use of computers is limited and their use has little effect on classroom practice. In addition, Cuban found that there is no clear evidence that computer use increased students' academic achievement.

In his fifth chapter, Cuban attempts to “make sense” of the outcomes of his study — outcomes that indicate that the extensive access to computers, software and training opportunities, contrary to boosters' expectations, have done little to significantly change classroom practice and that the small percentage of teachers who actually do become proficient with computers use the technology primarily to “maintain existing classroom practices” (p. 171). Cuban begins by defending those who most often are blamed when reforms don't work out — teachers. He makes the case that the teachers he studied responded no differently than teachers have responded historically to technological innovation (he uses the examples of film, radio, and instructional television), and that these teachers responded no differently than other professionals respond to technological innovation (here he examines at some length the work of engineers and primary care physicians). Cuban then formulates three possible explanations for the under use of computers: “the slow revolution” (technological innovation takes time to get everyone involved and trained — we should be patient), “the historical, social, organizational, and political contexts of teaching” (the structures and historical legacies of schools make change very difficult), and “contextually constrained choice” (the notion of teacher autonomy and the degree to which teachers ask about and act on practical matters in their teaching, which would include their concerns about the reliability of computers or the amount of time needed to learn to use them well). As much as the boosters of computers may favor the “slow revolution,” Cuban argues, a combination the latter two reasons are more persuasive in explaining the outcomes he found.

In his final chapter, Cuban returns to the theme raised in his introduction. Says Cuban: “Contemporary reformers have forgotten the democratic mission at the heart of public schooling, ignored the critical importance of social capital in strengthening civic behaviors, and proven too narrowly committed to technocratic solutions of school problems . . . ” (p. 192). This, he states, “tempts” him to call for a “moratorium on buying more computers for K-12 schools.” The billions of dollars spent on technology might better fund a host of more socially relevant reforms such as smaller class sizes, renovations of dilapidated schools, and better pay for teachers.

In the end, Cuban predicts that the promoters of computers will have their way — the slow revolution argument will prevail and every student will eventually have a networked computer. However, because of the structure and historical legacies of schools, computers will bring about no fundamental change in teaching practice. Furthermore, without attention to the work of teachers and the broader social and democratic goals of schools, says Cuban, “our current excessive focus on technology use in schools runs the danger of trivializing our nation's core ideals” (p. 197).

It is hard to disagree with Cuban's arguments about the use of computers in classrooms. Day-to-day direct teaching in schools across the country has probably changed little despite the emphasis placed on technology in the past decade or so. Clearly the “revolution” in education to be brought about by computers has not materialized, and as Cuban predicts, most likely will not. And there are many in government and business — not just computer advocates — who believe schools should serve more of an economic purpose than a social or civic one. But it is unclear that these arguments necessarily support his conclusion that computers are a waste of resources. Cuban states that teachers largely used computers to prepare for classes rather than

for direct instruction (p. 85) and that most teachers adapted the computer to support current practices (p. 97). It seems reasonable that many teachers might well consider classroom preparation, including the gathering of information from the Internet and the communications possible via email, to be an important part of their teaching. It also seems reasonable that teachers might welcome new and innovative ways to help them continue to teach in ways they deem best for their students and themselves. To write off computers because they have failed to revolutionize what goes on in classrooms seems at best to represent a narrow view of the entirety of the teaching process. To suggest a moratorium on the acquisition of computers (interestingly only in K-12) because some of their advocates are more concerned with economic rather than democratic reform seems short sighted. There was no indication that the teachers Cuban studied favored economic goals over democratic ones in their teaching.

Certainly computers often sit idle in classrooms, but then so do many books in the library. That does not mean computers, or books, are useless. And certainly schools have important non-technology funding needs. But it is a tricky calculus to weigh perceived utility against perceived wants. By viewing computers from a dichotomous perspective of good or bad, Cuban falls into the trap of having to dismiss computers because they have not produced the outcomes claimed for them by an overly optimistic group of computer advocates, or because computers are perceived by some to advance economic goals over democratic ones. Is there no middle ground?

Cuban's book is about two things:

- 1) The tendency of computers to foster a change in the focus of school reform from democratic goals to economic ones, claiming that "no tool is better suited for those economic ends than computers" (p. 11)
- 2) The failure of computers to make any significant change in students' academic achievement or teachers' classroom instruction.

In the book, however, it seems as if the latter issue washes out the former. It is not clear how the use of computers in the schools Cuban studied advanced economic goals over democratic ones, only that they failed to effect much change. According to Cuban, if computers were used in the ways that boosters advocate they should be used, economic goals would come to the fore. But if computers are underused, or used by teachers to facilitate existing practice, what then? Are computers in the hands of teachers, who operate in an environment of "contextually constrained choice" serving aims that are less economic and more democratic? Can computers serve social and civic aims despite their economic genesis? These are important questions that lie beneath the surface but are not sufficiently addressed.

Although Cuban's argument about the computer's role in a troubling refocusing of school reform could have been made stronger, he has demonstrated what many already suspect — computers have made much less impact on classrooms than many once predicted they would. For those who need a well-conducted empirical demonstration of this, Cuban's book is the place to turn. For those "slow revolution" computer advocates who continue to believe that the computerized educational revolution is just around the corner, Cuban's book is strong repudiation of that view.

[1] Cuban justifies the selection of preschools and kindergartens and not elementary or middle schools in an appendix. He claims that evidence indicates that access, amount of computer use, and the kind of use in upper elementary school grades and high schools is much the same.

