The amount of teacher and administrator training is woefully inadequate to the task of lifting their knowledge to the point where they understand both the necessity and potential power of learning enabled through new information technologies. Schools do not devote enough attention to preparing educational personnel, who in most cases did not have any ex-
There are So Many More than Three Barriers

Exposure to learning resources such as the exponential riches available on the World Wide Web during their own high school or college experience. (The WWW was only invented in 1993 and was not very prevalent in schools for several years after that, meaning that most educational personnel in the schools today had little or no experience with technology in either high school or college.)

Editor’s note: Recent studies indicate that approximately 85% of teachers have little or no effective professional development in the use of technology in instruction and assessment and, alarmingly, other studies indicate that it takes an average of five years to get them to a level of competence in using technology in their teaching.

Educational leaders are often “missing in action” when it comes to creating a pervasive environment from which to teach and manage instruction through educational technologies.

The notion that the education community seems to embrace “that the funding for needed educational technology is going to have to be ‘in addition’ to other funding” relegates this urgent funding need to one of a “superfluous add-on.” These essential tools for 21st century learning should have a high priority in all mainstream budgets. The education community itself has not made a strong case for raising technology costs to a high budget priority—possibly higher than textbooks, subscriptions for print media, and so forth.

The expertise used by schools to provide comprehensive planning for technology-assisted education is not usually up to the task. Too often it is vendor-product-driven, and too often it lacks the range of education and technology knowledge and experience needed to accurately determine its fit with the infrastructure and educational needs of the school. How often has a high-level business analyst been coupled with a high-level software architect to evaluate needs and design a system that will meet the unique needs of schools and districts? What usually happens is that there is a focus on hardware (which in and of itself is the wrong starting point), and the expertise often comes from the sales force of various vendors. By being unwilling to pay for high-quality evaluations on the front end, schools waste more dollars with systems that either do not work as they were promised, or they create unintended and convoluted repercussions throughout other parts of the technology infrastructure.

SOLUTIONS

- Demand better quality teacher and administrator training.
- Educate the public as to what is at stake if we neglect to make proper investments in technology-assisted learning (competitiveness and productivity).
- Commit adequate financial resources to re-engineer the schools (this means substantial reallocations in some instances).
- Convince the public and policy-makers that schools need to invest more on the “front end” of information technology decisions—which starts with securing strong front-end talent, especially related to network and architectural analysis and design. This should help schools and districts reduce total project costs, because it will help get things done right, sooner.
- Schools need to approach investments in technology by pushing the financial returns much harder than they have in the past. Smart businesses do not make investments because they have a notion that something will work. Rather, they have spent a lot of time understanding the return-on-investment. I have seen schools be far less demanding in this regard.
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