*Inside*

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# Risks of E-Education

Some universities and other institutions are offering or contemplating courses to be taken remotely via Internet, including a few with degree programs. There are many potential benefits: teachers can reuse collaboratively prepared course materials; students can schedule their studies at their own convenience; and employees can participate in selected subunits for refreshers. Society might benefit from an overall increase in literacy—and perhaps even computer literacy. Online education inherits many of the advantages and disadvantages of textbooks and conventional teaching, but also introduces some of its own.

People involved in course preparation quickly discover that creating high-quality teaching materials is labor intensive, and very challenging. To be successful, online instruction requires even more organization and forethought in creating courses than otherwise, since there may be only limited interactions with students, and it is difficult to anticipate all possible options. Thoughtful planning and carefully debugged instructions are essential to make the experience more fulfilling for the students. Furthermore, for many kinds of courses, online materials must be updated regularly to remain timely.

There are major concerns regarding who owns the materials (some universities claim proprietary rights to all multimedia courseware), with high likelihood that materials will be purloined or emasculated. Some altruism is desirable in exactly the same sense that open-source software has become such an important driving force. Besides, peer review and ongoing collaborations among instructors could lead to continued improvement of public-domain course materials.

Administrators might seek cost-saving measures in the common quest for easy answers, less-qualified instructors, mammoth-class sizes, and teaching materials prepared elsewhere.

Loss of interactions among students and instructors is a serious potential risk, especially if the instructor does not realize that students aren't grasping what is being taught. This can be partially countered by including some live lectures or videoteleconferenced lectures, and requiring instructors and teaching assistants to be accessible on a regular basis, at least via email. Multicast course communications and judicious use of Web sites may be appropriate for dealing with an entire class. Inter-student contacts can be aided by chat rooms, with instructors hopefully trying to keep the discussions on target. Also, students can be required to work in pairs or teams on projects whose success is more or less self-evident.

E-education may be better for older or more disciplined students, and for students who expect more than just being entertained. It is useful for stressing fundamentals as well as helping students gain real skills. But only certain types of courses are suitable for online offerings. Unfortunately, courses emphasizing memorization and regurgitation, or courses that can be easily graded mechanically by evaluation software fall into this category. Such courses are highly susceptible to cheating, which can be expected to occur rampantly whenever grades are the primary goal, used as a primary determinant for jobs and promotions. Cheating tends to penalize only the honest students. It also seriously complicates the challenge of meaningful professional certification based primarily on academic records.

Society may find that electronic teaching loses many of the deeper advantages of traditional universities where smaller classrooms are generally more effective, and where considerable learning typically takes place outside of classrooms. But e-education may also force radical transformations on conventional classrooms. If we are to make the most out of the challenges, the advice of Brynjolfsson and Hitt ("Beyond the Productivity Paradox," *Communications*, Aug. 1998, p. 49) would suggest that new approaches to education will be required, with a "painful and time-consuming period of reengineering, restructuring, and organization redesign…"

There is still a lack of experience and critical evaluation of the benefits and risks of such techniques. For example, does e-education scale well to large numbers of students in other than rote-learning settings? Can a strong support staff compensate for many of the potential risks? On the whole, there are some significant potential benefits for certain types of courses. I hope that some of the universities and other institutions already pursuing remote e-education will evaluate their progress on the basis of actual student experiences (rather than just the perceived benefits to the instructors), and share the results openly. Until then, I vastly prefer in-person teaching coupled with students who are self-motivated. **C**

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