

Technology at Work

It's essential to have students use technologies in the classroom that they will encounter in the business world.

by Lee Schlenker and Adam Mendelson

The nature of business has radically changed in the past few decades. The image of the nine-to-five office has been increasingly replaced by the notion of a business staffed by part-timers and consultants working on an as-needed basis. For many, “work” is no longer a physical place they go to perform professional tasks, but rather an activity that can be conducted from any place at any time.

Enabling this far-flung modern workplace is a whole host of technologies, from e-mail to cell phones to Web conferencing to process management software. To be successful in business today, every executive must be comfortable with many of these new technologies. And business schools—whether they are enrolling first-year MBAs or customizing programs for high-powered executives—must prepare students for workplaces that will only become more dependent on IT.

Many schools have added technology components to their programs. But we believe these computer-aided programs are valuable only when they link content and software directly to real-world business. We refer to this approach as *work-based pedagogy* that relies on *authentic technology*. By teaching students to use workplace technologies most effectively, we can better prepare them to work, communicate, and interact in the 21st-century workplace.

Imperfect Approaches

Work-based pedagogy is built on the premise that management education should focus on the imperfect realities of the workplace rather than on the idealized models of best practice. Too often, management education operates on the principle that there is “one best way” of doing business. Local context and culture are considered anomalies that should be controlled and corrected, an attitude that ignores the realities of chaotic markets—that is, markets operating according to a kind of ordered chaos. Students are taught how to manage under perfect conditions, which rarely hold true in the real world.

Management education also is justly criticized for spending too much time teaching students about explicit practices and not enough time teaching them how to apply those practices in the workplace—in effect, concentrating on *know that* instead of *know how*. Work-based pedagogy places much more emphasis on *know how*. Schools that follow a work-based pedagogy embrace several guiding principles:

- They base learning objectives on authentic, on-the-job skills, tasks, or projects that are collaborative and cross-disciplinary.
- They design activities to help learners understand specific industries, markets, and organizations in terms of space, time, and culture.
- They develop course content that enables learners to acquire skills and knowledge applicable to future tasks.
- They make sure learning outputs are of intrinsic value to each student’s work environment.



We believe that technology should not be used to make the classroom more virtual, but to make the classroom more **corporate**.

In its purest form, work-based pedagogy is used in EMBA and customized executive programs. Participants first analyze specific practices at their own companies, then compare and contrast their situations with those of their classmates. Next, they collaboratively develop measurement instruments that they can take to actual work environments, and they often receive faculty coaching on specific work challenges.

Work-based pedagogy also can be found in full-time MBA programs, especially those that require students to develop business plans that span multiple disciplines. In those cases, students are not just coming up with justifications for their proposed businesses, but discovering how the inner workings of any enterprise are interrelated.

We must point out that there is no cookie-cutter approach to designing a curriculum around work-based pedagogy. We also acknowledge that incorporating business environments into the MBA program is much more challenging than teaching the program in a more traditional way. Nonetheless, we believe it is essential for business schools to teach their classes with technologies that are authentic to the workplace, not the university.

Technology at School

We feel that, to date, not enough schools are using technology in a way that supports work-based pedagogy. Most information technology has been applied to distance learning programs that push learning outside of the classroom into the realm of “free time.” We believe that technology should not be used to make the classroom more virtual, but to make the classroom more corporate. If learning is to be linked to authentic work situations, the technologies that support learning must also be authentic—that is, native to those situations.

This is more complicated than it seems. Because today’s workplace technology is constantly changing, companies continually invest in more computer literacy training for their employees. But because this training often takes place in isolation, without reference to a company’s specific business challenges, it rarely improves individual performance. Not only that, it takes individuals out of the workplace during the training period, leading to an even greater loss of productivity.

Certain technologies regularly used in the classroom are also of questionable value. Tools that have been specifically designed for education—such as learning management systems and virtual classrooms—require students to acquire specific skills that don’t translate to the work environment. We don’t believe that, from a business standpoint, it makes much sense for students to learn those tools.

In contrast, corporate portals and online collaboration tools are becoming standard in the business world. Not only will these tools support online learning, but they will practically be part of the woodwork when students enter their professional environments. Thus, it’s easy for schools to justify the time students need to invest to become familiar with these technologies.

That’s the approach in the Global Executive MBA program at the University of Navarra’s IESE Business School in Barcelona, Spain. Students use a combination of standard Microsoft products for a course on project management, learning a framework that they can apply to actual projects at their real-life workplaces. Teams of students track their progress using Project; they share resources and collaboratively produce deliverables using SharePoint and Office. They maintain regular communication asynchronously through Outlook and synchronously through Messenger. Many of these basic communication tools are already familiar to participants, while the advanced collaborative tools are ones they are likely to encounter once they’re in the workplace.

We also believe that the technology used in a classroom should be determined by the project, not by the technology available. This is especially true for EMBA programs where the participants are working executives who face practical challenges at the office. We don’t try to force specific technologies into learning activities that don’t require them, nor do we opt for more advanced technologies simply because they exist. For example, if students are involved in a project that requires frequent real-time meetings, traditional teleconferences may be more appropriate than Internet-based communication tools.

MIT’s Sloan School of Management in Cambridge, Massachusetts, delivers its executive MBA program using only pervasive technologies that participants will encounter in the workplace. Sloan’s high-velocity EMBA students are not patient with technology hurdles, and the school did not want to attempt to customize its complex learning platform for each class. Instead, it has adopted a simple blogging system in several programs. The chosen blogs can distribute postings by e-mail, so the participants can choose this familiar mode if they prefer. As blogs gain more traction in the corporate world, these executives will find themselves already familiar with this common collaborative interchange.

Content Is Key

Choosing the content for work-based pedagogy is just as essential as choosing the technology, because real-world business is complex, cross-functional, and often hard to

In the working world, these technologies are only a means to an end— not the end in itself.



decipher. Ideally, work-based learning revolves around four types of content:

- Theoretical frameworks provided by faculty that can be used in real work situations.
- Output generated when teams or individuals work to put theory into practice.
- Relevant work done by previous students who have applied similar frameworks and theories.
- Related content from students' own organizations, especially in EMBA classes.

Obviously, this approach will require some customization of content and technology systems for each institution, although schools won't always be able to provide solutions that translate directly into the real world. However, as students interact with each other and external content providers, they'll learn the organizing principles of knowledge management—and they'll become familiar with the technologies that will enable them to share content. As a result, they'll not only gain insights into the best ways to manage knowledge when they're in a work setting, but they'll understand what tools to use as they do so.

For example, in graduate courses on process improvement held at EM Lyon in Ecully, France, students map both the formal processes and informal networks to be found in workplaces. They rely on tools typically found in office settings, such as Qualigram process mapping software and OSSAD modeling language, which is the standard in Europe. They also employ an array of Microsoft products: Office Suite software for documents and spreadsheets, Groove software for collaborative efforts, and SharePoint portals for connecting workspaces. Of course, they also communicate more


informally through e-mails, blogs, and podcasts. The class is designed to demonstrate the difference between the perfect processes possible in theory and the reality of the workplace. Students explore competing visions of how work is done now and how it might be done better in the future.

While the ideal content delivery platform at school would be the same system students will use at work, that might not be feasible in all situations, particularly if the company relies on proprietary knowledge or technology. In this case, students can use tools such as Web searches, industry reports, journal articles, and government reports to learn about their industries. At the same time, students can learn that the "perfect" information isn't always available. Instead they must know how to use imperfect information, which is often subject to the real-world constraints of the workplace.

In fact, many existing IT case studies can be quite misleading, because they seem to demonstrate that managers can rely almost entirely on enterprise systems when they need to gather information to help them make decisions. In reality, most managers draw data from a variety of sources, and only some of that information has been captured electronically. An important part of any manager's job is to learn to put the pieces of diverse, often partial, and sometimes contradictory information into a meaningful coherent whole.

Moving Forward

We believe that business schools must provide a richer educational experience for students through the liberal use of authentic technologies throughout the curriculum. Moreover, schools must provide not only the content and the technology, but the contextualized learning experience that teaches students how to apply the technology.

Yet, as in the working world, these technologies are only a means to an end—not the end in itself. Even as students become familiar with these work-based tools, they will not be focused primarily on understanding the features and functions of new software. They'll be learning to use these tools within their specific organizations and industries as they communicate, innovate, and market in the 21st-century world. 

Lee Schlenker is affiliate professor in information systems management at EM Lyon in Ecully, France. Adam Mendelson, who designed and managed e-learning initiatives for IESE Business School in Barcelona, Spain, is now researching educational technology at the University of California in Berkeley. Toby Woll of MIT's Sloan School of Management in Cambridge, Massachusetts, also contributed to the research done for a longer paper on this topic.