Educating A Global Workforce
E-learning moves beyond “diploma mills” and toward the future
By Heather Skyler

“Imagine a white board in a classroom, and everyone has an arm long enough to write on that board,” said Wayne Pferdehirt, director of engineering degree programs at the University of Wisconsin, Madison.

This metaphor is a good one for the direction on-line education (or e-learning) is taking. While there still are many standard programs where students read material and test online, or watch lectures on a computer screen, some degree programs are moving beyond static education toward a dynamic alternative.

It’s a natural reaction to be skeptical of e-learning degree programs. Since their appearance in the mid 1980s, they have been met with muted approval. But the notion that e-learning equals ‘sub-par’ has been slowly reversing, and some e-learning programs have gained immense respect. In fact, two of the country’s leading-edge e-learning programs can be found right here at the University of Wisconsin, Madison.

IB went in search of what e-learning looks like today and how it is preparing the workforce of tomorrow.

DIGITAL NATIVES
Most of the people who read this magazine are not digital natives. Author Mark Prensky coined this term to describe the students of today, the first generation of people to have grown up surrounded by and using computers, video games, digital music players, video cams, cell phones and all the other accoutrements of the digital age. These
students are “native speakers” of the digital age, and for them, e-learning is a natural and logical extension of their world.

The rest of us, according to Frensky, are “digital immigrants” and always will be. We have adopted and adapted to the digital age but will always have a bit of the old world about us. The new tools will never feel quite as natural, say, to a Boomer as they do to a Gen Y native.

This new breed of student has not just adopted technology as its learning tool, but has shaped the way technology is used. Jon Aleckson, CEO of Web Courseworks, a Madison-based company that provides custom course development services and products, explained that social constructivist theorists believe learning is very self-directed and takes place through social networking or conversation. “We have a generation of learners who are very active on the Internet and who have the ability to learn from each other. We all know the biggest teacher right now is Google. We also have Wikipedia. There is this grassroots movement of learning tools on the web and everyday people add to it.”

The idea of learning as a collaborative conversation is nothing new – think of the Socratic dialogues – but the Internet has opened up and expanded this method with new tools. A mere 20 years ago, it was difficult to imagine discussing an issue or theory with people in China, Ireland and Canada simultaneously, all without needing to leave your office. Discussion boards, chatrooms, wikis and social networking sites have now made opportunities like that possible.

Now apply that possibility to education, and you have a network of potential learners that exceeds all former expectations and takes global learning to a whole new level.

**ENGINES AND MBAS**

Even if digital immigrants will never be quite as “at home” in the digital landscape as the natives, many of the students – and most of the professors involved in e-learning – are digital immigrants, and they are managing to adapt to these new tools... and to flourish!

One place where e-learning is flourishing is at the UW-Madison’s College of
Engineering. Engineers are technical people by nature, and in today's workplace, many engineers need to work and consult with peers all across the globe, so it makes sense for some of their degrees to be online.

The Master of Engineering in Professional Practice (MEPP) is a two-year degree designed for the engineer who wants to advance his career as a technical leader — for whom an MBA isn't the right fit. The program targets technical proficiency in project management and other key leadership and business areas, while preparing engineers for the challenges of the global marketplace.

Carl Vieth, assistant faculty associate in the College of Engineering explained, “It's designed for people who are going to be the next chief engineer or programmer in a technical organization. It's a hybrid between a technical Masters in Engineering and an MBA, and our students are from industries ranging from aerospace to food processing to the military.”

The UW College of Engineering also has a newer four-year online program called the Master of Engineering in Engine Systems (MEES). Now admitting its fifth class of students, the first class from MEES graduated in May.

Pferdehirt said, “This is for students who want to lead engine development projects, either redesigning old or designing new engines. The degree provides the technical and management skills to lead a team in everything required to develop a new engine. It's a really unique program; there's nothing like it in the engine industry.”

The people who migrate to both of these degree are full-time, working engineers who tend to travel a lot and can't be married to a campus, so the online format is an ideal fit.

“We have one current student,” said Pferdehirt, “who works for John Deere and lives two weeks of the month in Iowa and two weeks in Brazil. He said he couldn't have gotten his masters with any other type of degree, and that his air time was much more productive because he could work on his laptop.”

While many of the current students live in the U.S., Pferdehirt said they just accepted a man — who is the head engineer for a railroad in India — into the MEES program. “He said he looked online and couldn't find anything else like it!” and the MEPP program just admitted its first student from China, a female engineer.

**THE NUTS AND BOLTS**

Both the MEPP and the MEES are lockstep programs. Students do meet each other — and their professors — during a week-long stint, but this is the only time there is face to face interaction.

“It's a very demanding week,” said Pferdehirt. “I liken it to spice when you're cooking; a little goes a long way but adds a lot of flavor to the rest of the year.”

During the rest of the year, a typical week in both programs requires listening to pre-recorded material, readings from a textbook, a homework assignment, and work on a group project. An online discussion thread carries throughout the week. Pferdehirt said, “These online discussions are quite different than a discussion on campus where some twenty-year-old student can only offer possible answers to a question. Now we have people
at 30 different companies who have real life experience talking about a workplace issue that affects them.”

Rick Geisheker, a new graduate from the first MEES class and a principal engineer at Briggs & Stratton, said, “Everyone is contributing real world experience and there’s pretty much an immediate opportunity to apply the knowledge as it’s being taught.”

The only hour during the week when a student has to be “present” is the weekly web conference, during which there might be a student presentation, a case study discussion, or a guest speaker invited from anywhere in the world. Pferdehirt described one web conference during which the instructor leading the class was in remote China and connected via audio. The guest speaker for the course was a man who had just set the land record for diesel and was in the U.K. Pferdehirt participated from Madison, and the students were all across the U.S.

“We’re able to offer a level of educational experience that is very difficult to replicate using other means,” said Pferdehirt.

**DRAWBACKS?**

Though the overwhelming response to both of the UW programs is positive, a few very minor drawbacks were noted. Pferdehirt said, “The most common thing folks miss – they can’t read body language. They need to develop different ways of understanding what is and isn’t happening during a class discussion, for example.

“On the other hand, folks feels less inhibited about participating. In a classroom, gregarious folks can really dominate, and this happens less online.”

Buchta thought the only potential drawback was “people confusing the UW program with diploma mills, but there’s never really a question here because the UW has immediate credibility. Besides, that problem would be transitory because once the degree is granted, no one will know it was done virtually.”

Geisheker said (assuming you have good connectivity) there are no drawbacks at all. “Once a while you get the glitches that come into the system and it’s difficult to keep the flow of class going – a bad cell phone connection, etc. – but these instances were very rare.”
CONNECTED AND GLOBAL

While time and flexibility are obvious assets of these two programs, feeling more connected to both professors and students – as well as more at ease in the global community – are two important perks.

Norman Buchta, a graduate of the MEPP program and senior engineering application specialist at General Mills, said he feels more connected to his instructors and classmates than he ever did as an undergrad.

“There are still people out there who don’t feel doing it virtually is the same as having to go to class and look your professor in the eye, but I feel very connected because I have to interact with all of them.”

“On average, I talk to a professor or other students up to six times a day via email or discussion threads.”

Geisheker said he’s also more engaged because he has to participate and collaborate. This collaboration takes place across great distances, and students leave both programs more prepared for an increasingly global marketplace.

Vieth said, "They learn how to manage documents across distance, how to create and lead teams at a distance. It’s built right into the curriculum of these programs. There’s coursework on international engineering so people can learn to manage in a cross cultural way."

“The curriculum design is project-based. Content is delivered in a non-live format, but the instruction happens in the application to a live project. Engineers all over the world have to start learning to work with each other, and these students come away with the skills to work at a distance and engage a global team.”

Right now, there are not many graduate degrees fully online. The UW-Whitewater has an award-winning online MBA program, the UW-Madison is planning to start a Master’s in Advanced Computation in the Fall of 2008, and Herzing College has plans to launch an online MBA in business management and health care management, possibly in 2008.

What’s your opinion about online MBA programs? Put it in a Letter to the Editor!