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Recasting Distance Learning with Network-Enabled Open Education: An Interview with Vijay Kumar

by James L. Morrison and Vijay Kumar

Vijay Kumar, senior associate dean for undergraduate education at MIT and director of MIT's [Office of Educational Innovation and Technology](#), gave the opening luncheon speech at the recent [Campus Technology Conference](#) in Boston. Afterwards, I interviewed Vijay in depth about one of the topics that he covered in his speech regarding distance learning and open education.

James L. Morrison [JLM]: Vijay, I understand that your presentation was based in part on a newly released book that you co-edited for the MIT Press entitled *Opening Up Education* (Iiyoshi and Kumar 2008) and in part on your work as an advisor to India's National Knowledge Commission.

Vijay Kumar [VK]: Yes. I did draw upon the book, which is now available from [MIT Press](#) in print and in an [open-access edition](#), and on my recent experience in the Indian context. The book, sponsored by the [Carnegie Foundation for the Advancement of Teaching](#), is a selection of essays by prominent practitioners of open education who have been engaged in leading these initiatives since MIT launched [OpenCourseware](#) (OCW), the intent being to examine how these initiatives can collectively make a difference in transforming education.

The [National Knowledge Commission](#) was appointed by India's prime minister Dr. Manmohan Singh to examine issues related to improving and scaling educational opportunity in that country by focusing on the processes of creating knowledge, accessing knowledge, preserving knowledge, and delivering knowledge. The commission's recommendations addressed a variety of topics and issues, including distance education and institutional governance. The particular aspect that I worked on was open and distance education, specifically the opportunities that the open-education movement presents for rethinking how we do distance education.

JLM: Vijay, please give us your perspective on open and distance education and how open education relates to distance education.

VK: The whole idea behind distance education has been to take education to people who cannot come to the university because of work, or because they live too far from a university, or because they do not have enough money. Various countries have tried to address the problem of access to education by using the postal service, as the [U.K. Open University](#) did in the beginning; interactive telecommunications, as they did in the University of Maine system and in other places around the world; and now the Internet. Open-education efforts, as exemplified by MIT's OCW initiative or the many other initiatives that have sprung up since, make course content and other materials from educational institutions freely available on the Web for direct use or for repurposing for different contexts.

The increasing capabilities of the Internet coupled with open educational resources offer new dimensionality to distance education by enabling extensive access to globally created educational resources to serve the knowledge needs of diverse communities. These resources combined with distance-education technologies offer the possibility of delivering interactive educational experiences in flexible formats, both formal and informal, and fostering communities of engagement in learning. In fact, open courseware brings us closer to the vision of lifelong learning than ever before.

JLM: In fact, in your speech, you noted that 160 major institutions are currently offering their

materials on the Web.

VK: Yes. These initiatives take various forms, from published versions of full courses like those offered in MIT's OCW to peer-reviewed materials for specific courses and programs as in [Merlot](#) from the Cal State system, and they cover a range of disciplines, such as engineering, public health, and social sciences. But they all try to ensure that a collection of rich educational resources—including full courses, course materials, modules, textbooks, streaming videos, tests, software, and even laboratory experiences—is freely available.

For instance, when MIT put all of its course materials on the Web for free, it meant that you didn't have to be an MIT student to use the materials. Mind you, we did say very clearly that while those materials are an important part of the MIT educational experience, they are not all of the MIT educational experience. You don't get all of the benefits associated with registered enrollment at MIT.

JLM: This means that MIT professors don't respond to questions about their material.

VK: Right. However, in my talk today, I illustrated how professors in various countries are using MIT courseware as models for their syllabi and curriculum. In addition, students around the world are using the materials as supplements to what they get in the classroom. Open education enables students to review a particular institution's materials or a particular repository's materials and say, "Well, this material is good for this topic, but I want to go to University X's site for that topic." In effect, learners can construct their learning experiences around a variety of choices.

This is the real transformation opportunity: Universities are constantly adding quality open courseware that allows more choice, which means that distance education, which has typically been treated in the formal education structure as a second-class citizen, can be as good as or even better than what we expect of a traditional formal education experience. Look at what open education provides: just-in-time education and more focused learning experiences.

I talked about the long tail today. The phrase "[the long tail](#)" was coined by Chris Anderson (2004) to describe the niche strategy of businesses that sell a large number of unique items in relatively small quantities. In our context, the long tail refers to the possibility of creating customized educational experiences, niche education for different communities. John Seely Brown and Richard Adler talk very eloquently about this in their article "Minds on Fire: Open Education, the Long Tail, and Learning 2.0" (2008). From the resources that are available through open education initiatives, educators and learners around the world can build customized educational experiences with much more facility than they previously could. Educators no longer have to provide a standard one-size-fits-all delivery model of distance education (à la Henry Ford) but now can shape the learning experience for different topics, for different thematic approaches, for different kinds of learners. Thus, recasting distance education in the context of open education provides the opportunity for distance education to move beyond second-class status and serve a much broader and richer segment of the global community.

This wonderful abundance of resources is available anytime, anywhere, and largely for free, and they provide a lot of flexibility for a range of uses. Faculty members can use them to model curriculum. Self-learners can use them to update skills and explore new areas. During the dot-com bust, we noted significant activity on MIT's OCW from people who were looking at those offerings to update their knowledge for particular topics and competencies. Open education is adding a lot of functionality to what we typically think of as distance education.

JLM: Are the materials offered on OCW sufficiently detailed that students not enrolled at MIT can actually update their knowledge and skills from that material?

VK: On the MIT OpenCourseWare page, each course includes a syllabus, lecture notes, assignments, and in some cases video-based lectures.

JLM: Using open courseware is something like auditing a class, then, where students can sit in the back but not turn in assignments.

VK: That's a perfect analogy. One of the images that we used to describe OCW was “Imagine the notes taken by the best student in the class.” It is very rich in its content.

JM: Please describe the scope of current open courseware initiatives.

VK: There is a lot going on, and there are many open courseware and open educational resource initiatives besides MIT's OCW—[Rice's Connexions](#), Carnegie Mellon's [Open Learning Initiative](#), public health materials from [Tufts University](#) and [Johns Hopkins](#). Vietnam has [OpenCourseware](#); China has a program called China Open Resources for Education ([CORE](#)). In India, the seven Indian Institutes of Technology ([IIT](#)) and the Indian Institute of Science ([IISc](#)) have collaboratively created the [National Program in Technology-Enabled Learning](#), which consists of 129 Web-based courses and 110 video-based courses, all in English and free to anyone who wishes to access them.

Many of these institutions are participating in the [OpenCourseWare Consortium](#), which is extending the reach and impact of open courseware by encouraging the adoption and adaptation of open educational materials around the world. The [Hewlett Foundation](#) has sponsored many of these initiatives.

JM: What were the origins of MIT's OCW initiative?

VK: OCW started the way many things start in higher education, with a faculty committee. In the fall of 1999, MIT's President and Provost charged the MIT Council on Educational Technology with determining two things: How is the Internet going to impact education, and what should MIT do about it? At that time, many schools had launched e-learning and e-content initiatives with a view to using the Internet to cash in on their intellectual property. After a year of research and analysis, the committee concluded that the numbers just didn't add up; a revenue-generating distance-education model wasn't viable for MIT. At that point, they refocused on the MIT [mission](#)—“to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.” They also reflected on the interviews they had conducted of MIT faculty members and were impressed by how passionate faculty members were about teaching. And that's how the idea, a very simple but very big idea, was born—by connecting MIT's mission with the faculty's passion for teaching and the power of the Internet. Why not use the Internet to give our teaching materials away?

JLM: What will open courseware mean for the future of higher education?

VK: The longer-term implications of OCW and similar initiatives can be really profound. Chuck Vest, MIT's president from 1990 to 2004, presented a vision of a meta-university. I heard this first from him at the [SAC Snowmass](#) conference in 2005, but he describes what he means in a subsequent article entitled “Open Content and the Emerging Global Meta-University” ([2006](#)). The meta-university is where much of higher education worldwide can be constructed or enhanced through resources made freely available to the global community. Traditional universities cannot do this. In order to scale excellence, network-enabled open education has to be the central modality for delivering quality education, and this is how we have to recast distance education.

Network-enabled open education has particular significance because open-education resources mean more than the content of a course; they include a variety of resources that support learning—interactive content, simulations, and hands-on activities. We include, for example, [MIT's iLab](#) project that came out of the [iCampus](#) initiative. iLab provides access to real labs over the Internet. We can have students in Singapore and Sweden using network analyzer equipment and other labs at MIT and elsewhere through their Internet browsers. When I was working with the Knowledge Commission in India, we had live demonstrations of iLabs that were set up at the University of Queensland in Australia.

Mind you, we are not talking about simulations; these are real labs. Think about the empowerment. Think about the fact that now when we talk about distance education, we're talking about accessing not just content but real, first-hand, hands-on experiences. We are talking about a world where content can be supplemented by laboratories sewn into an educational experience.

Look at it this way: The fact that students have iLabs on the Internet means 24/7 availability of labs that many students typically wouldn't have access to, even on campus. But there's another kind of richness. Multiple communities around the world who might be working on the same lab can now share and discuss information derived from lab activities. This is why I say that network-enabled open education can provide education as good as, if not even better than, we have in traditional settings and that it has to become the central modality for delivering education that is excellent at scale.

JLM: The open education that you describe certainly meets the objectives of enabling students to become independent learners competent in accessing, evaluating, and communicating information, but with that kind of sharing, it can also develop students' competency to work with people in other cultures.

VK: Absolutely. And there is another aspect to this. Some people say, "Well, engineering and science, it's all the same. It's context independent." I don't think so. One of the things that network-enabled open education offers is the ability to customize learning experiences. Materials that were created elsewhere can be localized and contextualize, which is to say that neutral scientific concepts can be explained using illustrative examples that are pulled from the local environment and, as a result, very context dependent. It is not enough to make resources available; we need to create facilities so that teachers anywhere in the world can bring their local experience, their local examples, to their students.

The sweet spot of opportunity that network-enabled open education presents for distance education is blended learning. We have learned a lot from situated learning experiences about the value that hands-on experiences bring to situated learning, the kinds of communication that happen, the kinds of idea generation that happen through rubbing shoulders, rubbing elbows, working face-to-face. Now, with the affordances of networks and software, we have the opportunity to build unique blended experiences that intelligently combine the situated learning experience of formal education with the other value affordances of social networking and open-education resources. This is a transformational opportunity.

Another sweet spot is boundaryless education. It's boundaryless not just in terms of transcending geographical boundaries, but in that a lot of separation between outside and inside, between community and cloister, between research and learning, between experts and laypeople, is shrinking in very interesting ways. A lot of those traditional boundaries are getting much more permeable because of the kinds of things that networks and open resources enable. For example, there are some folks who create sense-making documents around scientific concepts and discoveries and post them on social networks and other Web 2.0 venues so that people like you and me can understand the significance. [AcaWiki/iCommons](#) is an example of such a resource; [Jove](#), with more Web 2.0 features, would be another great example. Suddenly, very powerful scientific notions with implications for our lives are made meaningfully available to us. There's a lot of research that we fund, as the public, as taxpayers, that is put out in a form that doesn't make sense to us. There are communities that are translating that, doing some sense making around that, so that laypeople can understand the significance of the work.

That's the kind of shared, collective knowledge space that that this whole business of network-enabled open education is catalyzing. The networks bring people together, the open part makes these resources widely available and accessible, and the confluence of these two is leading to all kinds of boundarylessness. I believe these are real expressions of public science.

JLM: Vijay, as a fellow futurist, you know that the definition of an event is a confirmable, unambiguous occurrence that causes the future to be different. The MIT OpenCourseware Initiative,

followed in short order by so many leading institutions around the world opening up their classroom materials on the Internet, was surely an event. We are all the better for it.

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