

Technology will change universities as it changed the music industry

By Stephen Toope, Special to The Globe and Mail April 25, 2013

The world's media recently reported how a new approach to online learning – called massive, open, online courses (MOOCs) – allowed a 12-year-old girl from Pakistan to study subjects like astrobiology from the world's top universities. The story captured our attention, hinting at how education might open doors in ways unimaginable just a few years ago.

While the potential for change is dramatic in developing countries, new learning technologies have the power to revolutionize life for Canadians, as well.

A recent Statistics Canada survey suggests that as many as one third of Canadians have unmet learning needs. That is, because of family responsibilities, demands of work, or the challenges of location and time, many Canadians are unable to pursue the educational path they imagine for themselves.

How many great teachers have we missed in our elementary schools, because life circumstances prevented them from earning credentials? What about the mother who might make a terrific psychologist, but must also care for a disabled child? Are there entrepreneurs among us who could transform their rural communities, if they could gain competitive business skills? And could your bus driver be the next great Canadian novelist, if only she could get a boost from inspiring creative writing coaches?

MOOCs are certainly opening our eyes to the possibility of addressing these needs. They may also be the tail that wags the dog. The technology is evidence of dynamic forces at work to dramatically change higher learning.

Four factors are rapidly taking us beyond the tipping point for major change in postsecondary education: advances in understanding how people learn; transformative technologies; a shift in demand for new learning options; and rising costs for the current bricks and mortar model.

What is at play here is similar to the upheaval we've seen in the book, music and video industries. Technologies are driving dramatic new ways of enjoying these creative materials. The winners are almost everyone: There is massive access now to the very best works of art. But with the new forms of access come new forces of change, and pressure for the creators of these materials to rapidly adapt to new forms of content created in different ways and by almost anyone.

The analogy is imperfect, however. Education is not a product to be passively consumed. Just as people still want to attend a concert, go to a high-quality bookstore, or prefer to see a hockey game in person rather than on TV, there will still be a place for physical classrooms and the exciting face-to-face experiences of learning.

However, the factors mentioned above are pushing us to adopt more effective teaching methods like "flipped" classrooms, where students review material online, and spend valuable class time

in discussion and analysis. They are pushing us to make more use of blended learning, which involves a varied mix of technologies outside and inside class time. And they are pushing us to offer more high quality fully online programs. All together these represent an approach often called flexible learning.

The challenge will be managing this profound change. Professors are not dispensers of information. They are guides through the growing vastness of information – provokers of critical thought and analysis, facilitators and mentors who can effectively channel discussion so that the learning becomes a personal and a shared effort.

For those who are passionate about education, the possibilities of change outweigh the anxieties. After leading UBC's first MOOC on game theory, a course that attracted 130,000 learners, Prof. Kevin Leyton-Brown, an associate professor of computer science, enthused that he had four times as many Canadians in his course than he had taught in 10 years as professor.

Seven years ago Nobel Laureate Carl Wieman chose UBC to host his initiative to enhance undergraduate science education by building on research in pedagogy and brain science. Over the past ten years, UBC has rebuilt its medical faculty to double the number of students through an innovative distributed education model, using technology to train doctors at sites across British Columbia.

We don't know yet what the future holds, but I invite universities across our country to join with us to embrace the challenge to develop innovative learning opportunities. Together we can open worlds to 12-year-old Pakistani girls and boys. But we can also unleash a new level of creativity and potential for Canadians.

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