Massive open online courses are forcing a rethink of university teaching.

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on educational technologies, MOOCs (massive open online courses) herald a new dawn of extramural and intramural teaching, which promises flexibility of offering and renders geographical location irrelevant. For others, they represent the further commodification of the academy, spelling the death of the traditional higher education model and, by extension, the end of the road for the face-to-face lecturer. So, which is it? Are MOOCs examples of innovative digital disruption, or harbingers of digital destruction? And what are the implications for pedagogy?

Online learning is not new. Distance-learning institutions such as Open Polytechnic, Massey University and the trail-blazing Open University in the UK have for some time exploited the capabilities of e-learning, and incorporated online learning techniques into their standard teaching models. Innovative teachers at more traditional-model institutions have also experimented with moving their teaching partly or wholly online, using features such as wikis, computer-marked quizzes, podcasts and audiocasts as part of their teaching methodology. For some time, these forays remained outliers and were often viewed with suspicion. However, in the past few years the traditional global tertiary education market has caught up with this innovation and, in some quarters at least, has adopted it wholeheartedly. Most universities now acknowledge the need for a level of digital interactivity in their teaching, and are slowly coming to terms with this shift—most notably in the widespread adoption of the flipped classroom (a model in which students study before class, usually by watching lecture-style videos online and undertaking set reading, then apply that learning in in-class projects and activities). The move online has also raised questions of scale and reach, with the realisation that many of the resources being developed for small inhouse cohorts could potentially be applied to an external audience of tens (or even hundreds) of thousands. MOOCs have been gradually entering the wider tertiary market, but the past couple of years have witnessed a sudden proliferation both in the range of courses being offered and the number of students signing up for them—hence “massive”. Indeed, this explosion in providers, focus and undertaking set reading, then apply that learning in in-class projects and activities).

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FOR SOME COMMENTATORS

Though many universities are experimenting with online teaching and learning, in the past two years a number of key providers have begun to shape the overall picture. Some of these are from the privatised US tertiary market. Coursera and Udacity both have their origin in Stanford University academics, whilst edX grew out of MIT and Harvard. Coursera boasts more than 200 partner institutions and around seven million users, while not-for-profit edX has about 50 partners and two million users. Germany’siversity is a commercial MOOC provider, while FutureLearn—which grew out of the UK’s Open University and now has 40 partners (including the University of Auckland)—is launching somewhat cautiously, with initial course registrations capped at about 10,000 students. The courses offered across this suite of providers are as varied as those offered by any traditional university and range widely across disciplines, from the fundamentals of global energy business and street-fighting maths to applied cryptography, Dante’s Divine Comedy and even dental photography. (The University of Auckland plans to launch its first two FutureLearn MOOC courses—academic integrity and an introduction to data analysis—in late 2014.) These formal MOOC providers, which typically present courses created and delivered by their partner institutions, are also supported by originators of other reusable digital resources, such as the phenomenally successful TED Talks series.

Key features of a typical MOOC

- Entirely online/digital
- Free to students
- Requires no previous qualifications to study
- No limitation on age or geographical location of students
- Asynchronous—student studies at own pace
- Communication is via email or discussion forum
- Teaching materials usually consist of videos, audios, lecture recordings, online quizzes and activities, forums and readings
- Some use of immersive synchronous social networks, for example Second Life
- Principally uses peer-marking model and/or computer-marked assignment for formative assessment
- Main lecturer(s) supported by a number of facilitators
- Not usually credit bearing
- Any certification rewards participation and completion rather than grade
- Current participation analytics suggest that only a proportion of those who register start each course, and then a successively smaller proportion completes each assessment point.
- There are currently low rates of completion.

University of Auckland/FutureLearn MOOCs

The first two courses produced by the University of Auckland in partnership with FutureLearn will be delivered later in 2014 and are open for registration now.

Data to Insight: An Introduction to Data Analysis
Start date: 6 October 2014 | Lead educator: Professor Chris Wild, Department of Statistics. More information can be found at: www.futurelearn.com/courses/data-to-insight

Academic Integrity: Values, Skills, Action
Start date: 10 November 2014 | Lead educator: Dr Jason Stephens, School of Learning, Development and Professional Practice. More information can be found at: www.futurelearn.com/courses/academic-integrity
clear benefits. The open nature of the courses, which enables students of any age, life stage, educational and work background, and geographical location to access courses from some of the world’s most prestigious universities, clearly has a profound contribution to make towards the agenda of widening participation. Indeed, the potential of the MOOC to give almost anyone access to learning resonates with Austrian philosopher Ivan Illich’s oft-quoted definition of how an educational system should “provide all who want to learn with access to available resources at any time in their lives; empower all who want to share what they know to find those who want to learn it from them; and, finally, furnish all who want to present an issue to the public with the opportunity to make their challenge known” (Deschooling Society, 1971). Theoretically, anyone can find their way to a rigorous, interesting course taught by leading academics amongst a cohort of motivated, like-minded learners. The asynchronous nature of MOOCs—where students are not generally expected to be active at specific times of day or to adhere to particular deadlines—is particularly appropriate for students who work full-time and for returning learners with care or other responsibilities. Students with mobility issues are well-served by MOOCs, as are those with sensory impairments (or those with certain disabilities, for learners with sensory impairments (or those for whom reading onscreen is simply not their preferred learning style), online courses without significant accessibility support remain inaccessible.

The claim that the present generation of students are all digital natives (a phrase used alarmingly cavalierly and with imprecise definition), and as such function best in a digital environment, is too often offered without clarification or caveat. The sort of critical thinking we expect from our students would suggest that this is not a uniform condition; that the same variety of expectation and expertise demonstrated in any other educational context is equally true for online or e-learning, regardless of the extent to which students are apparently welded to their smartphones. Another potential obstacle to greater global student access is the absolute requirement for a computer which meets a minimum specification, a reliable electricity supply and relatively high speed broadband internet access. The latter is not a given even in a developed nation such as New Zealand, and is even more problematic elsewhere in the globe.

This online model has

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S O, I F T H E Y A R E N O T

the panacea for all educational ills, where does that leave MOOCs in the tertiary education sector? How do they fit, and what opportunities can they offer to institutions who take the plunge? One potential benefit of MOOCs is as a space for innovation. As a teaching medium currently without truly fixed rules there is an opportunity for experimentation and risk-taking that may be eroded as conventions develop and become entrenched. They constitute a locus for institutional and individual academic development; a place to validate and evaluate different models of teaching in a reasonably controlled environment. The potential is there to design and deliver courses drawing on varied rules there is an opportunity for experimentation a teaching medium currently without truly fixed resources to support that model.

With this question of support and scalability comes the issue of how universally a MOOC model can be applied. Inevitably, there are some disciplines for which an unmediated online format simply won’t work. Business Schools, for example, may be able to develop rich and rigorous resources for the vast majority of their departments and content areas which students are well able to work through at their own pace and which could ultimately lead to a qualification. However, the same cannot necessarily be said for medical schools and other healthcare disciplines—MOOCs in dental imaging notwithstanding.

Quite apart from the practical and pedagogical obstacles to MOOC function, perhaps the largest challenge facing MOOC platform providers is the issue of monetisation. Based as it is on the OER (open educational resources) movement, in which teaching and learning resources reside in the public domain and are freely available for educators and learners to use and adapt, the idea of charging for content is anathema to many of those involved in the creation of the MOOC. However, there remain other possibilities for generating income which some platforms are exploring. Central to this exploration is the ‘freemium’ model in which, whilst central content remains free, payment is required for certification, subsequent extension courses, or secured assessment leading to qualifications. Other possibilities include developing spon-

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sored content to serve specific employers who would pay for employees to undertake it or for access to graduates. Alternatively, they might use MOOCs as free “funnels” to attract students who are then upsold into paid-for courses once they have developed a relationship with an institution. At this early stage in the development of MOOCs, such questions are still being debated and explored. Businesses such as Facebook and Spotify, which developed successful profit-generating models, having initially created high customer value but with no obvious revenue paths, demonstrate the potential for adding commercial viability to an existing product through carefully targeted development. The level of interest indicated by course registrations suggests that this is equally possible with MOOCs.

Another topic of some contention is the branding potential of individuals and institutions. Whilst a successful and popular MOOC can contribute a great deal to an institution’s teaching brand, a MOOC model that centres the promotion of a course on the international reputations of ‘star’ academics ultimately risks strengthening the profiles of those academics at the expense of others—including other staff working on the course—in a way that may redirect some of the brand bounce the institution may otherwise have enjoyed. This question of how institutions can manipulate the branding opportunities MOOCs offer is further complicated by the issue of whether a future which potentially allows students to choose individual courses from different providers to create a programme or qualification—a scenario currently being explored by a number of providers and partner institutions—risks undermining university brands and compromising quality assurance.

The higher education market’s wider state of flux, as funding models undergo dramatic change, raises an even more fundamental question: what is university education now for? If there is tension between a notion of learning
for knowledge’s sake and teaching skills that will enhance employability, perhaps MOOCs are able to serve both aims by shifting some of our expectations about what is practicable and desirable. That this shift is perceived as disruptive to the traditional model of higher education teaching arises in some respects from the more generalised theory of disruptive innovation proposed by Harvard Business School academics Joseph Bower and Clayton Christensen (‘Disruptive technologies: catching the wave’, Harvard Business Review, January-February 1995, pp. 41-53), which suggests that new market innovations may initially appear at odds with a business’ core product. MOOCs fall within this definition in that it is unclear whether they constitute a technology that will ‘stick’ in the environmental landscape and meet learning needs, or to what extent they will undermine universities’ core business model of selling largely face-to-face, on-campus, taught credit-bearing courses. Such a trajectory, however, is not without its critics, which include one of the world’s most influential strategy theorists, Harvard Business School’s Michael Porter. The debate between Christiansen and Porter was recently featured in the New York Times, with Porter advocating that premium institutions such as Harvard resist the temptation to follow others into MOOC territory, where a price premium is anything but assured.

If Porter is wrong, and the theory of disruptive innovation is correct, then the most appropriate response to the threats and opportunities that MOOCs present is for higher education institutions to create autonomous units where exploration, experimentation and innovation can be undertaken, and positive developments rolled out, alongside the dominant business model. However, this would require a level of investment that may be beyond the reach of many institutions. Another challenge in maintaining traditional models of education, while simultaneously embracing new approaches, is the inevitable culture clash between the ‘new’ and the ‘old.’ Fortunately there is a metaphor for doing it constructively: the ‘ambidextrous’ organisation. Developed by Michael Tushman (also at Harvard) and Charles O’Reilly (at Stanford), the metaphor suggests that an organisation can, and should, support the tried and true (and profitable) lines of business, while actively pursuing new ways of doing things. The ambidexterity metaphor can help each subculture see the value of the other in relation to the overall goal of long-term competitive success.

So, are MOOCs the heralds of a new model of higher education or not? Ultimately, there are so many different potential sectors and needs to be met, that most likely there will not be a single one-size-fits-all model, but a multiplicity of approaches for which the appropriate funding models, frameworks and quality assurance processes will need to be developed within institutions. Face-to-face teaching will never disappear, as learners will always be individuals who need tailored support, and there is a qualitative, experiential side to on-campus learning that many will continue to want to experience. The model of face-to-face pedagogical contact will instead be developed, extended and augmented by models of online and blended learning that will require educators to embrace flexible and accessible models, but which in turn will open up institutions to a more diverse and far larger group of potential students. Universities will continue to make themselves relevant in the digital world, and students and employers will continue to benefit from that. What may begin as challenging and disruptive will swiftly become integrated into the rich tapestry of educational experience embedded in the academy. Ultimately, MOOCs may well have the potential to disrupt our habitual models of learning and teaching, but perhaps that is no bad thing.

KEY TAKE-OUTS

- In recent years Massive Open Online Courses have become hugely popular, with a proliferation of providers, course offerings and student enrolments.

- By offering access unconstrained by location, cost, time or circumstance, MOOCs make a profound contribution to the agenda of widening participation in education.

- Aside from the pedagogic issues it raises, a major challenge for providers is to generate income from the MOOC platform. Some are exploring a ‘freemium’ model, requiring payment for certification or extension courses.

- Ultimately, MOOCs are likely to develop alongside the evolving model of face-to-face and flipped classroom teaching rather than replace it, and open up institutions to a larger, more diverse group of potential students.