Covid-19 and the Future of Online Learning

Now we can all teach online! But what happens next?

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Covid-19 has improved not only our skills in learning technologies but also our awareness of the possibilities. How should we in higher education be responding to the significant changes that are happening worldwide in online learning?

Introduction

Models of distance education stretch back to the 18th century. Correspondence courses that developed in the 19th century were highly successful and lasted well into the 20th century, when they started to absorb technological solutions such as radio in the 1930s, TV in the 1960s, and the World Wide Web in the 1990s (Tait, 2003). It was not until the communications revolution of the internet massively reduced the transactional distance between lecturers and students that one might claim these distance learning courses started to change dramatically.

Although the possibilities for richer communication improved as internet speeds increased, online programmes continued to wrap courses around highly designed materials. With the increased expectation of professional video and multimedia, the cost of creating these courses increased, making them unviable for smaller audiences. Around 2004, however, the cost and quality of videoconferencing greatly improved, and it became possible to teach 'live online' in a similar manner to classroom teaching. With a modest amount of training in live online teaching pedagogy and technology, and the addition of asynchronous tools, a lecturer could teach online as well as, if not better than, they might previously have taught an on-campus class.

This synchronous approach to online teaching was the model that emerged in the Institute of Technology Sligo (now Sligo College of the Atlantic Technological University) between 2002 and 2004. The approach gave lecturers the autonomy they were accustomed to in classroom teaching, and the tools and training available allowed them to enhance their teaching even further. ATU Sligo was one of the first higher education institutes in the world to adopt this mode of distance teaching, and since then it has become more common, particularly in Ireland, because of the low investment required to create an online course.

Rapid change

The Covid-19 emergency quickly converted virtually all academics to synchronous online teaching. The resulting unplanned learning experiences by staff with limited training were often of lesser quality than on-campus. Although this has been reasonably described as 'emergency remote teaching', that should not imply that competent synchronous online teaching is inferior when planned for and undertaken by trained staff.

Despite the challenges and shortcomings of online teaching during the pandemic, there have been positive outcomes. Both students and lecturers have gained a better understanding of how technology can enhance teaching and learning. Students across the world are now requesting that lecturers record their classes (Donnelly, 2021). Despite lecturers' reservations, this has been shown to improve performance and reduce stress for students who, for one reason or another, cannot attend classes from time to time.

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Indeed, the recording of classes during the pandemic has removed the reservations of many lecturers, and many institutions are now developing agreed recording policies. Lecturers can enhance their courses by using additional techniques and tools. A more advanced example would be the implementation of a 'flipped classroom' model, using videos and quizzes to ensure they are viewed in advance of class.

The teaching experiences of lecturers and students during the pandemic may also have opened their eyes to possibilities (and necessities) beyond improving learning on campus. In the US it has had an impact on young students, with decreases in on-campus enrolment and an increase in the proportion of 18- to 23-year-olds enrolling in online distance programmes (Kelly, 2022). Lecturers may also begin to realise that more models of education are now possible and desirable than just the traditional campus model.

Lasting impacts

Perhaps the most immediate impact may be the conversion of part-time campus programmes, usually taken in the evenings or at weekends, to online programmes. Both lecturers and part-time students now know that attendance requirements can be much reduced if not completely removed. Although part-time students prefer face-to-face classes, they are usually highly motivated and busy people with full-time jobs, families, and hobbies. They will most likely prioritise convenience over perfection and opt for online programmes from elsewhere if their local institution does not provide it.

The state of online distance learning in higher education might now be simply described as divided into two main approaches. The primary approach is mainly from a smaller number of mostly larger providers, many

of which have long been active in distance learning. These institutions invest significant funding in creating content for more popular programmes and recoup this investment by delivering to larger audiences. But a very large numbers of institutions are developing new synchronous online programmes with minimal investment in an agile way, often in specialised fields, that can financially break even at relatively low enrolment levels. Now 'anyone can do it'.

In a similar way to how Amazon created an increased market for more obscure books, this long tail of specialised online programmes may reduce the demand for generic programmes from traditional providers, but at the same time increase overall demand for continuing education by facilitating access to many who previously did not have access.

New models of higher education

A new model of higher education is starting to emerge that may prove to be much more disruptive. When MOOCs (massive open online courses) became popular around 2002, it was rightly observed that these large-scale free courses had no associated credentials and would be of limited value. In time, these courses added assessment and started awarding micro-credentials for individual courses or coherent sets of courses. Although these courses were initially expensive to build, more recently it has been shown that they can be built more cheaply if TV production quality is not required.

It might be argued that although these courses are useful for professional development, they are no substitute for major awards from universities. But these courses have been used by some universities to develop techniques for teaching at scale, and full fee-paying programmes are emerging. The original 'degree at scale', an MSc in Computer Science from Georgia Tech, now has over 11,000 enrolled and at $7,000 represents a significant threat to programmes elsewhere (Nietzel, 2021). This programme has been followed by many other postgraduate programmes on the edX and Coursera platforms. More recently the University of London published an undergraduate degree in Computer Science on the Coursera platform.

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A significant part of the Atlantic Technological University's Higher Education 4.0 project (funded by the Human Capital Initiative) is to explore the possibilities for both campus and remote learning in these new models. In addition to exploiting synchronous teaching techniques to rapidly create online programmes in response to demand, the project will develop and document 'lean' processes for the rapid, low-cost development of reusable learning videos that can be used to facilitate asynchronous and other models of learning, including flipped learning, self-study courses for advanced entry into programmes, project-based programmes, and MOOCs.

Other models are also being developed in the Higher Education 4.0 project which do not necessarily depend on reusable content, such as work-based degrees and micro-credentials as small as a single credit.

Future innovations

Many believe that micro-credentials will play an important role in continuing part-time education in the future (Caballero et al., 2022). They are a response to demands from employers for smaller and more relevant courses. Although many factors might affect the success of micro-credentials, an extremely important one is the use of digital credential infrastructure. An applicant for a job, or for entry into an educational programme, with a large set of smaller paper-based credentials will pose a challenge for evaluators. Digital infrastructure for issuing electronic credentials according to agreed standards will enable the development of systems for evaluation that automatically verify credentials and provide detailed information on learning outcomes and performance.

Micro-credentials could be considered a threat to higher education. Many existing micro-credentials from organisations like Microsoft or Google are highly valued alternatives to college courses. However, if higher education institutions develop their own micro-credentials, and enable these awards to be stacked alongside externally recognised credentials towards a major award such as a degree, they may prove to be a significant opportunity.

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Innovation is not all about technology. To exploit these innovations, higher education may also need to innovate in our academic processes. While we may now be able to rapidly get an online course or programme up and running, employers do not generally consider higher education fast enough in responding to their needs. This may be because our processes for academic approval are too slow. We need to decrease the time required to approve major awards and develop separate, faster processes for the approval of micro-credentials. We also need to develop a faster way of testing and approving new models of online teaching, like the agile 'minimum viable product' approach used by entrepreneurs.

To quote Yogi Berra: 'Predictions are hard, particularly about the future.' But it is clear that there will a much greater variety of online learning models in this future, and we need to be able to continuously experiment and change to satisfy the needs of learners.

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Atlantic Technological University (ATU) welcomed the announcement by Simon Harris, Minister for Further and Higher Education, Research, Innovation and Science, of the green light to proceed to the next phase of the Galway City Campus Learner Centre project, under the Technological Sector Strategic Projects Fund (TSSPF).