

The Shanghai Library

Lecture by
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What future for online learning?

Theme

The Internet plays an increasingly central role in our lives. How will it change higher education?

Introduction

Good afternoon Ladies and Gentlemen. Addressing you at the famous Shanghai Library is an honour and a pleasure. This lecture is part of the DeTao Talks series and I speak on behalf of the DeTao Masters Academy, where I am one of the Education Masters.

My topic is a question: *What future for online learning?*

We all know that the Internet plays an increasingly central role in our lives. People in China are great users of the Internet for shopping and many other aspects of daily life. But how will the Internet affect higher education? Will the Internet, through online learning, start to replace much of the study that today occurs in classrooms and on campuses?

I shall focus largely on the development of online learning in the world outside China and ask you to reflect on how online learning will evolve in China. Will China follow a similar path to the rest of the world or will China be different? Is online learning compatible with China's educational traditions? Later, in discussion, you can challenge me on the statements that I will make about educational technology and about China.

My talk will be in three parts.

First, I will recall that online learning is not really new. It is the continuation of a long tradition of open and distance education in which China has been a major player. In this section I shall summarise what research says about the effectiveness of open and distance education.

Second, I will describe some recent developments, notably MOOCs, or Massive Open Online Courses, that have greatly increased public awareness of the opportunities that the Internet provides for education.

Third, I will ask what is the future of online learning in our schools and university campuses. Are we going to see a steady shift of education away from classrooms and onto the personal computers or mobile devices of individual students?

So I turn first to the traditions and history of online learning.

The Traditions and History of Online Learning

Online learning is the latest development in what is called 'open and distance education' around the world. Open and distance education combines the concepts of open education and distance education.

The idea of open education is simply to remove the barriers that prevent people getting the education that they need. For example, there are now many open universities around the world. Some of them have eliminated entrance exams and prerequisites in order to make it easy for people to enrol. Entry is easy but students then have to work hard and pass the university's exams in order to graduate. This is the opposite of how the world's elite universities operate. They are hard to get into, with tough entrance exams. But once you into most of these elite institutions it is relatively easy to graduate with some kind of degree.

Distance education is usually associated with open education. That's because one way of removing barriers it to enable people to study wherever they are - at home, or at work, or travelling. Distance education allows that and also usually gives people great flexibility about when they study.

Open and distance learning has a long tradition.

For example, Confucius did not teach at a distance through letters or the Internet, but he travelled throughout China as a teacher. He was a pioneer of the concept of open education that has always been associated with distance education. He was the first teacher in Chinese history to provide private education to the public, based on the concept of "teaching according to natural aptitude". He also emphasised the importance of self-improvement, which has been the motivation of millions of ordinary people who have studied by open and distance learning over many years.

In more recent times I should mention the creation of the Radio and TV Universities by Deng Xiaoping in 1978. That created a nationwide open and distance learning system across China, which enrolled 3 million students over the following 20 years. One million of them graduated.

In 1999 the Radio & Television University network began to evolve into the Open University of China, which integrates an air network through satellites, a ground network through computers, and a human network through the full-time and part-time faculty in the open universities. This is now a large operation, even by Chinese standards. By 2008 over 5 million people had registered and over 2 million had graduated.

Distance Learning and Technology

All over the world distance learning has evolved as technology has evolved. Every new communications medium has been used to make distance education more open and to improve its quality. I shall mention a few examples.

The first - and perhaps still the most important technology - is the printing press. Before printing was invented there were few books and teachers had to read them to their students. With printing everyone could have books, making education much more open.

The next key invention was railways, which made it cheap, quick and easy to distribute material - including books and printed documents - throughout countries. National postal systems developed and people took advantage of them to open up education. Correspondence education was born. Soon after a postal system was put in place in Britain in 1850 Isaac Pitman offered a correspondence course in Shorthand for the growing numbers of office workers.

In the 20th century there were many developments, notably radio, film, television and computers. These, along with print, were important media for the open universities, such as the UK Open University and the China Central Radio and TV University that opened in the 1970s.

All this led the way to the Internet, which brings together all the previous communications media because it can carry the written word, audio, still images and video. The Internet has caused distance education to grow much more rapidly, not just in places like California, but also in countries like Brazil.

Does Online Learning Work?

More and more people are learning online. But there are two questions. First, does it work? Second, do students like it? I shall answer both questions briefly.

There have been hundreds of studies of the effectiveness of distance and online learning. I shall refer to two studies that have re-analysed and synthesised much of that research.

Bob Bernard and his group in Canada analysed the results of 232 studies, conducted between 1985 and 2001 that had compared distance education with classroom instruction in terms of student achievement. They found that asynchronous distance education - which is where the interactions between students and teachers are not live - produced better results than classroom teaching.

Ten years later Barbara Means and her colleagues in the US compared online learning with face-to-face teaching using research articles published between 1996 and 2008 on web-based courses where more than 25% of the instruction - but not all - was delivered online. Such mixtures of online and classroom teaching are called 'blended learning'.

They too found that students doing blended learning performed better than those receiving face-to-face instruction. But they also noted that students doing blended learning spent more time learning and had additional instructional resources.

They suggest, therefore, a major reason for using blended learning is to increase the amount of time that students spend studying.

What do Students Think?

What do students think of online learning? I have not reviewed studies conducted in Mainland China but there has been some interesting research in Hong Kong.

This found that online learning is not nearly as popular with students as the authorities had anticipated. Traditional face-to-face learning remains students' preferred mode of study despite the fact that Hong Kong has high availability of personal computers and high penetration of broadband access. The researcher investigated these negative attitudes, which contradict the common expectations of Hong Kong's government officials and educators.

The most important barrier was a lack of self-discipline and self-motivation in learners. This is tied to a teacher-centred and utilitarian learning culture with a tradition of rote learning that is the opposite of the self-directedness and student-centredness that online study requires. Moreover the students' utilitarian aim of getting through the course with minimal work is often shared by teachers, who also seek to instruct with least effort.

In my home country, Canada, attitudes are very different. High-achieving students are particularly enthusiastic. They like learning online and preferred blended learning courses to those that are fully face-to-face or fully online. They found blended courses more convenient and engaging and learned key concepts better than in face-to-face courses. Another study found that older students and women had more favourable views of online learning than younger students and men, and also that people who had already experienced an online course were more likely to take another one successfully.

We can summarise this in two points.

First, an educational tradition where students are used to learning by rote and being assessed by conventional tests is not a good environment for introducing online learning without significant planning and preparation.

Second, both blended and online offerings stimulate students to work harder and engage more fully with the course.

MOOCs: Massive Open Online Courses

I now come to part two of this lecture. A recent development, which has greatly increased the awareness of online learning and the numbers of people who have experienced it, is MOOCs: Massive Open Online Courses.

MOOCs began in Canada in 2008 with a course that was offered free online to the public as well as being offered on campus. Called *Connectivism and Connective Knowledge*, its

aim was to have students build the course together by sharing the knowledge they found on the Web.

But MOOCs really made news when elite US universities like Harvard and MIT started offering a very different type of MOOC. These were based on a traditional teaching model using lots of short videos. This early MIT course on *Circuits and Electronics* is an example of that second generation of MOOCs.

With over 150,000 registrations it was certainly **massive**.

It was **open** in the sense of being free to the user, though free in the sense of free beer, not free speech, because the materials were usually copyrighted and not reusable by the learners as open educational resources.

It was **online**, so accessible to anyone with a computer and a connection.

Was it really a **course**? I believe that higher education is not just about teaching and learning but also about assessment and the award of credentials. These first US MOOCs did not give you credentials or credits so they were not courses in that sense.

But American universities are very respectful of Harvard, so if Harvard was going online and offering MOOCs, that must be OK. So a copycat phenomenon began. A herd instinct was at work and many universities started producing MOOCs. The last time that anyone tried to count all the world's MOOCs was a year ago, when there were almost 4,000.

This means, of course, that there has been tremendous diversification, as illustrated by this cartoon. It says that the meaning of every letter in the acronym MOOC is now negotiable. Most MOOCs are no longer massive, although I should note that a MOOC on English Language Tests just created a world record by attracting nearly 400,000 learners.

MOOCs: The Weaknesses

The key reasons for the diversification of MOOCs are that institutions are trying to solve the two important weaknesses of MOOCs.

The first is that they do not usually lead to credits. This means that regular university students are not very interested in MOOCs. For example, two years ago, when Peking University started offering MOOCs, the response from its students was disappointing. They preferred to study courses that would lead them to a credit or a credential.

The ideal learners for MOOCs are people like me. I already have all the university degrees that I need and I am retired from full-time work. But I am still eager to learn many things so MOOCs are ideal for me because they are free and well designed. I am now studying my eighth MOOC from the FutureLearn consortium. Here are the ones I have taken so far. I find them excellent and really enjoy my studies.

But I am also contributing to the second weakness of MOOCs, which is that they have no clear business model. These universities have to spend money to make good MOOCs, but

they do not get any money back from me because they offer them free. Having a business model and giving credits go together because that is the way universities normally cover their costs. They charge fees or get government grants for courses and programmes leading to credits and credentials so they have revenues to match their expenditures.

This leads to two more challenges. First, although the teaching in most MOOCs is very good, they don't require much work. I spend just a few hours a week on each of mine. Second, even if universities do try to assess what students have learned, they have a problem of scale. The world's open universities have the systems to assess and examine students on a large scale because they have thousands taking some of their courses, but regular universities do not. So as MOOCs diversify the average MOOC is becoming smaller, which makes student assessment easier.

What this means, in summary, is that we are seeing a convergence between MOOCs and online teaching in regular courses leading to credit and qualifications. Indeed, some people now use the term MOOC to mean any kind of online course, but this is not helpful. I suggest that we should keep the term MOOC for the kind of massive, free and informal courses that I am taking. The regular courses that are taught online can simply be called online courses.

What Future for Online Learning

That brings me to the third part of this talk and my title: *What Future for Online Learning?*

Are we looking forward to a world when most university teaching and learning will be done online rather than in classrooms?

I have talked about MOOCs. The most important impact of MOOCs was to make all the world's universities wake up to the possibilities of online learning. The online future of universities is not in MOOCs, because they don't give students the credits they want and they don't give the universities the money they need. But that doesn't mean that MOOCs will die out. I hope that some universities will continue to offer them as a service to society so that older people like me can take them for fun.

But MOOCs have an important future in continuing education at lower levels. For example, some non-university institutions are offering MOOCs to promote rural development. India, for instance, is launching a nationwide programme of MOOCs to train 200 million agricultural workers in modern farming techniques.

More students taking regular courses online

But on university campuses we shall see a steady rise in the number of students taking regular credit courses online. This diagram shows the steady rise in the proportion of American students taking at least one course online. The figure had reached 32% by 2011. Over this same ten-year period the proportion of US universities offering at least

one programme that can be studied entirely online, with no classroom attendance, rose from 32% to 62%. Another revealing figure is that three-quarters (75%) of the enrolment growth in US higher education is in online courses and only one quarter in classroom courses.

I give you figures for the US because the US publishes data on this phenomenon and there are many reports about it. It is very difficult to get comparable data for other countries because they do not collect it.

A Paradox

Let me give you one final figure from the US, which leads nicely into my concluding comments. Seventy per cent (70%) of leaders of US universities say that online learning is a very important element of the future strategy for their institutions. However, these leaders also report that only 28% of their academic staff members (the faculty) accept the value and legitimacy of online learning.

The future of online learning depends on how this paradox is resolved. To summarise in five points:

- Students like online learning.
- Research shows that students learn more and better online.
- Online learning is expanding steadily
- MOOCs have made all universities take online learning seriously.
- A majority of academic staff do not accept the value and legitimacy of online learning.

The paradox is that academic staff (the professors) is not convinced of the value of online learning even though the research shows that students like it and learn more.

Moore's Technology Adoption Cycle

One way of looking at this is Moore's Technology Adoption Cycle. This shows that when new technologies are introduced the pattern of their adoption often shows a break - called *The Chasm* on this diagram. Some enthusiasts and visionaries adopt the new technology early but then there is a time gap before others, first the pragmatists and then the conservatives, jump in too.

For online learning the visionaries are the students who, being more oriented to the Internet and to the future, take to online learning quickly and exploit its advantages. On the other hand the faculty, who are used to traditional ways of teaching, take longer to adopt the new technology. In the case of the adoption of online teaching and learning we are now somewhere around this chasm.

My question for you is how this will develop in China. You know the situation better than I do. I reported a research study from Hong Kong, which showed that both students

and faculty there preferred traditional ways of learning and teaching because it was easier. Yet in the rest of the world online learning is growing steadily.

I also noted that the first MOOCs were not a success in China because regular students want credits and credentials. Will a new generation of MOOCs will be more successful in attracting older Chinese people - like me - who like learning but do not seek credentials.

DeTao and Online Learning

This speech is part of the DeTao Talks Series. I am proud to say that the DeTao Masters Academy is helping Chinese universities to experiment with online learning. Some of our Masters are now preparing online courses and will invite Chinese universities to integrate these into their existing programmes.

Professor Yan Jin, an expert in Design Theory and Methodology, is pioneering this initiative. His online course will be part of a series called O2O, meaning 'Online to Onsite'. A number of Chinese universities will be offering this course onsite on their campuses this year. In the case of O2O the receiving universities are expected to adapt the online course to their own teaching needs, meaning for example, that student assessment will not be the same in each host university.

DeTao thinks that this is a good model. Most university professors are reluctant to import a course from somewhere else and use it exactly as it is. They want to add their own examples and give the course their own style. On the other hand the O2O courses give them some excellent online teaching material and also give them a chance to become familiar with the technology of online teaching and learning. This means that one day they may be able to produce online learning courses themselves. This is one mechanism through which university professors will become comfortable with online learning and see its value.

Conclusion

I conclude that online learning will become a major part of higher education in the years to come. But it will take time. Most of the students are ready to adopt it but it will take much longer for the faculty to appreciate its strengths and be ready to teach online themselves. Thank you

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