

THE FUTURE OF HIGHER EDUCATION: BETTER BUT NOT NECESSARILY FASTER OR CHEAPER

Online educational technology could improve learning but that's not all students are looking for from higher education, writes **Andrew Norton**

Thirteen years ago the late Professor Alan Gilbert, then vice-chancellor of Melbourne University, wrote an article for *Policy* on the 'revolution' facing higher education.* He argued that technological change challenged the 'traditional' campus-based university. The former historian warned readers to 'remember the handloom weavers' who dominated a booming textiles industry in the eighteenth century before being wiped out by industrial technologies in the early nineteenth century.

Much of Gilbert's argument could be cut and pasted into a new article today. His predictions sound just as plausible now as then. But his examples would need changing. Gilbert praised the United Kingdom e-University (UKeU) initiative, which was to involve corporate partners in delivering the best of UK higher education. But far from revolutionising higher education in the United Kingdom, the UKeU was wound up in 2004 after losing £50 million of taxpayers' money.

Gilbert's own U21 Global initiative fared little better. Its key idea was to leverage the brands of Melbourne University and other high-profile universities to sell online education in emerging markets. But demand was never anywhere near as large as forecast, and in 2005, Melbourne University announced a \$15 million write-down of its investment.

Though Melbourne University lost money on its online venture, its Parkville campus flourished. In 2000, the year Gilbert wrote his *Policy*

article, Melbourne University's revenues from on-campus international students were worth about \$100 million in today's money. By 2011, that income had tripled to more than \$300 million in today's money, often at fees that suggested huge profit margins. The university's original on-campus services turned out to be much more valuable than innovative online courses.

What are higher education providers selling?

The point of re-telling this history is not to argue that today's online initiatives are set to lose money. Though the ventures Gilbert described did not succeed, some of what he predicted is occurring. Online education has grown, though much more rapidly in the United States than in Australia. The role of for-profit companies in higher education has increased. Existing university brands are being used to promote new online platforms, especially through the hugely popular Coursera and edX massive open online courses (MOOCs).

The point is instead about the complexity of higher education markets. Even for people as deeply involved in higher education as Gilbert, it is not always easy to anticipate what students are seeking from higher education. In a recent Grattan Institute report,



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* Alan Gilbert, 'The Idea of a University Beyond 2000,' *Policy* 16:1 (2000).

Online Evolution: When Technology Meets Tradition in Higher Education, we identified at least 11 services related to higher education in three broad categories of learning, employment and the broader benefits of higher education (Figure 1).

Figure 1: Student higher education outcomes

I want to learn new things	Specific vocational knowledge	Generic professional skills	Practical training	Knowledge for its own sake
I want to improve my employment prospects	Formal credential	Quality signal to employer	Evidence of achievement	
I want to go to uni for the broader opportunities	Networking opportunity	Student lifestyle	Migration rights	Social signal

Most of the excitement around online education comes from its uses in the first set of higher education outcomes in student learning. For many years now, online technology has efficiently distributed course materials and facilitated communication between students and staff. But it did not significantly improve learning compared to older on-campus methods. Most studies found little difference in academic results between delivery modes. But new online technologies promise major improvements in educational outcomes.

Adaptive learning software is one of the most interesting technologies. It adjusts course materials to a student’s level of understanding. If a student makes an error, the software instantly diverts to study materials that will explain and correct their mistake. Problems are targeted much more efficiently than in ‘traditional’ methods of study and assessment. Students who learn by listening to lectures and reading may not realise that their understanding is imperfect until an assessment exercise that might be weeks or months away—particularly in subjects where knowledge is cumulative, by which time it is often too late. Nothing else fully makes sense for a student who has missed something fundamental early on.

Adaptive learning research is going on in several countries; in Australia, it’s happening through Smart Sparrow, a spin-off company of the University of New South Wales. In trials

with a UNSW first-year mechanical engineering subject, Smart Sparrow radically reduced fail rates and increased the proportion of students getting high grades. Adaptive learning software offers substantial increases in educational productivity.

If students are only looking for improved learning, an online higher education provider with adaptive learning software is probably better than the typical campus-based university. But that is only one of the outcomes students seek from higher education, and for students taking an instrumental view of higher education—say, as a means to a job—it may not be the most important goal.

While most students say they are interested in their field of study, by far the most common main reasons for studying relate to jobs. A degree is a signal to employers about the likely attributes of potential employees. US research suggests online colleges are viewed negatively by employers compared to other types of higher education providers. That might just be an unwarranted prejudice against new forms of education delivery. But it could also reflect employers reasonably using where and how someone studied as a proxy for hard-to-measure attributes of prospective employees.

In Australian graduate employer surveys, academic results rank only fourth among the attributes employers are looking for in staff. Interpersonal and communication skills are more important. Perhaps employers think students who routinely interact with others as part of their studies are more likely to develop these skills. Or perhaps employers believe students who choose to study online without the communal aspects of campus life are likely to have less sociable personalities.

Perceptions of online education may change over time. Some people believe this has already started to occur, thanks to world-leading higher education brands such as Harvard, Princeton and Stanford involving themselves in MOOCs. Online educators may find further ways of overcoming negative perceptions. Some are experimenting with ‘badges’ that aim to verify that a person has a specified skill. Steven Schwartz in his article in this issue of *Policy* points to

assessing teamwork, communication skills, and even values and character as ‘competencies.’ Eventually, an authenticated competency in various personal qualities may be worth more than the proxy of three or four years at a campus university. In the meantime, a degree from an on-campus university may be worth more to students in the employment market, even if they learn less than they might have online.

Education for employment is an investment in future earnings. But universities also offer students lifestyle benefits from the opportunity to meet and share experiences with fellow students. A recent paper from the National Bureau of Economic Research in the United States, *College as Country Club*, analysed student preferences for ‘consumption amenities’ such as student activities, sports and dormitories. It reported that university spending on these activities was important to the university choices of students who were not academic high-achievers.

Australian universities do not put as much emphasis on student amenities as their US counterparts. Fewer students live on campus, and regulation limits universities’ non-academic revenue streams. But in a survey of Year 12 students, more than 80% of those expressing an interest in attending university agreed that ‘life at university sounds exciting.’ Consistent with this stated preference, only 10% of Australian higher education students aged 21 years or less in 2011 enrolled in even one off-campus subject. By contrast, more than half of undergraduate students aged between 30 and 60 years incorporated off-campus study into their degree.

What looks like inefficiency if we think the key product is student learning can be part of the service if we think the key product is a broader student experience. All students attending classes at fixed times over 12 or 13 weeks probably isn’t the best way of teaching students of mixed abilities and different academic needs. But it is a good way of organising regular meetings between students where they can also interact with their teachers. A long summer break is costly in under-utilised infrastructure and forgone salary costs for students, as they delay entry into the relatively well-paid graduate

workforce. But universities that offer a trimester system or summer schools often find limited demand from younger domestic students. Summer is a valuable time for recreation, travel, internships and paid work.

Now as in the 1990s, one of the great hopes of online technology is that it can deliver lower-cost education. There is scope for that in economies of scale and the automation of tasks. Yet successful online education ventures often do not pursue a low-fee strategy. One finding of our recent Grattan report is that online courses are generally not cheaper than on-campus equivalents, and some are more expensive. This is a rare exception to the general pattern of online provision expanding by under-cutting their ‘bricks and mortar’ rivals on price.

The lack of cheap online higher education partly reflects competition issues in higher education. Most universities offering online education also offer on-campus education. In offering online courses, they want to tap into new markets without undermining their campus operations. But there are also reasons for expensive courses relating to the type of student taking online courses.

The biggest provider of online degrees in the United States is the for-profit University of Phoenix. Partly because it is unsubsidised, it has never been cheaper than public universities. Instead, it has offered careful attention to the needs of its target market of working adults. From its start in the mid-1970s, it offered convenience: classes in office blocks or shopping centres near where its students live or work, at times that suit people with full-time jobs. For some of these students, online education offered even greater convenience, an advantage for which they were willing to pay a premium.

Although the University of Phoenix puts course materials online, it has never pursued all the cost-saving possibilities of online technology. Although students may never leave their home or office to study, Phoenix offers them as much or more personal service by phone and online than they are likely to receive at an on-campus public university. As well as academic advice, students have access to 24/7 IT support and to advisers

who can help them coordinate their study, work and family responsibilities. Phoenix realises that their target students are at high risk of dropping out if they cannot manage all the conflicting demands on their time. Phoenix students are prepared to pay for services they believe will help them earn a degree.

Regulating higher education

Forecasts of demand for online education during the late 1990s and 2000 dotcom boom proved over-optimistic. Technological limitations played a part in reality not matching predictions for the UK e-University, U21 Global, and other online ventures. Many prospective online education students lacked access to fast Internet connections. The Wi-Fi connections, light laptop computers, tablet computers, and smart phones that have radically improved personal computing were expensive or not available. Only recently has online educational software reached the point that it can be educationally better than typical on-campus teaching, rather than just more convenient. These changes mean that online higher education is much more attractive now than it was at the turn of the century. But entrepreneurs and analysts also over-stated the demand for online higher education because they misunderstood what students are looking for in higher education markets.

Regulators too tend to be over-confident in their view of what higher education should look like. Just as a global debate about the future of higher education was heating up in 2012, the Australian government introduced prescriptive new rules about how Australian higher education should be delivered. The standards that all higher education providers must now follow, under threat of de-registration by the Tertiary Education Quality and Standards Agency (TEQSA), essentially codify perceived good practice of public universities in 2011.

Welfare services and higher education

Current standards require higher education providers to assume a welfare role. To receive their licence to award degrees, higher education providers must ensure students are informed of

and have access to counselling, health, welfare, accommodation and career services. They need to advise students of actions they can take to enhance their security on and off campus. These ideas reflect ideas of a campus community where universities take pastoral responsibility for their students.

These services are much less relevant to online higher education providers and their students. With students spread over wide geographic areas, identifying appropriate services and safety tips would be difficult and costly. Higher education provider searches for relevant information are unlikely to improve on the local knowledge of students, who may have lived in their home area for years. The costs of these unnecessary services would be incorporated into student fees, undermining one potential advantage of online education.

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Though not all students require welfare services, it would be surprising if we ever had a higher education market in which this bundle of services was not available. When young people leave home for the first time to study, organised support services give them and their parents the confidence that the transition can be managed. This is especially true for international students who move to a new country as well as out of home. Australian universities are heavily financially reliant on international students, making student welfare services more important than ever.

Just as regulation imposes unnecessary obligations on online universities, it limits campus-based universities that want to provide additional services. Australia has had a long-running controversy over separate student amenities fees (also called student union fees). The Howard government prohibited the compulsory collection of these fees from 2006. Labor restored the fees in 2012, but price capped them at \$273 a year and imposed complex regulations on the use of the money.

Both political parties think they know what students need or want, but whether or how welfare services should be bundled with student learning does not need to be a political decision. Demand for these services will vary between students. The market rather than the parliament is the place to make decisions on welfare services in education.

Course admissions

Current standards also regulate how students are to be admitted. Admission decisions must be made by appropriately qualified personnel, who ensure that students have adequate prior knowledge and skills to take the course.

Admissions services are useful for students if they help them avoid paying fees or student contributions for subjects they are unlikely to pass. When governments are paying per student tuition subsidies of up to \$21,000 a year, they also have an interest in screening applicants. Admission services have also been rationing devices at universities where demand exceeds their willingness to supply. For all these reasons, admission services were standard practice at universities long before regulatory requirements were introduced.

But online higher education providers are challenging the assumptions on which the admission services regulation is based. As MOOC providers like Coursera or edX show, the costs of trying a set of course materials can be kept low for all parties—a modest time commitment for students, a low marginal cost for the MOOC platform, and zero expenditure for taxpayers. There is little need to ration student places, as supply can be easily increased. As of early May 2013, 3.4 million people had signed up to Coursera, which began classes in February 2012.

As well as transforming costs for higher education providers that are just in the learning business, technology can radically change the information available for educational decision-making. Though few people question the need for admissions services, there is always debate about the criteria. For school leavers, most are admitted to higher education according to a ranking of their school results. Other students are admitted based on past higher education results or specialised

admissions tests. They are all proxies for how well the student might perform if admitted.

If the costs of starting the course are low, we can abandon proxies and use real information. Data collected online about how often students log on, how long they take to complete tasks, and what they get wrong and what they get right can be used in learning analytics software to evaluate each student's performance. With better information analysis, formally admitting students *after* rather than before they start studying online could be fairer and more efficient. No student who could have succeeded is excluded because he or she did not match an admissions officer's picture of a successful student. Or an admissions process could be abandoned altogether, with the higher education provider relying entirely on the assessment process to decide who should receive whatever credentials they have on offer.

Conclusion

Online technology and the business models it supports are the most dynamic force in higher education today, moving much more quickly than regulators. Sometimes the technology undermines the implicit assumptions of regulation, as is the case with course admissions. Taking a course isn't necessarily expensive, and prior educational results are not necessarily the best available guides to future performance. Other times, the technology provides a clear example of why some regulations are excessive, as is the case with minimum welfare services. Trying to provide geographically based welfare services online is impractical, but there were always on-campus students who did not need them.

But in our enthusiasm for updating laws to reflect the Internet age, we should remember it is unlikely that online education will sweep all else aside. Let us not forget the handloom weavers or the UK e-U. Into the foreseeable future, most young students are likely to want to include campus learning in their studies. And student learning is a core service with which many other things can be bundled, from on-campus sports centres to distant call centres providing 24/7 IT support. Some regulations need changing so that higher education providers can offer students more as well as less.