

The evolution of e-learning

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Abstract

After centuries of little change, the role of the teacher as it has been traditionally defined and practiced is on the verge of becoming an anachronism. New and emerging pedagogies have harnessed the power of information and communication technologies bringing dramatic change in the educational landscape, transforming the breadth, depth and opportunities for learning. Significantly, those people who refer to themselves as 'teachers' are increasingly on the sidelines, not centre-stage. Learner-centricity is a key facet of the knowledge economy, which itself is characterised by learning organisations, learning management systems, and e-learning.

Teaching, meanwhile, is becoming a peripheral activity. Some institutions have attempted to transplant the old model within the new by delivering didactic pre-recorded lectures and canned 'death-by-PowerPoint'. The 'learning' that has taken place is then evaluated within an assessment regime that has been largely unchanged for generations, not because of an extant literature that validates the assessment instruments and the assessment regime, but because these are the tools that have always been used. This paper reflects on past practice and rejoices at the focus on learners and learning and at the technologies and emerging pedagogies that provide profound and exciting learning opportunities for the future.

Keywords

e-learning, learning, deep learning, teaching, paradigm shift, constructivism

Introduction

The biggest danger is that higher education may be the next railroad industry, which built bigger and better railroads decade after decade because that's the business it thought it was in. ... The reality was that it was in the transportation industry, and it was nearly put out of business by airplanes. ... Colleges and universities are not in the campus business, but the education business.

Arthur Levine, 'The Soul of a New University', *The New York Times*, 13 March 2000.

The higher education sector is in the midst of fundamental change. Never before has there been such intense public debate about the place of the university and its role in society. The position taken in this paper is that this is an extremely healthy state of affairs. Once the exclusive domain of the elite in society, there is now a much broader appreciation of the place and purpose of higher education, and what it affords its recipients and society more broadly in a knowledge-based and globally interconnected economy. Governments, meanwhile, have become increasingly alert to the fact that a robust higher education sector is vital for international competitiveness, and that this requires significant injections of funding. The problem, however, is that with the many competing interests for the public purse, traditional guaranteed public funding is being replaced by 'flexible' funding arrangements for universities and for their students combined with calls for increased private sector and student-fee support of the tertiary sector. This has been the source of much disgruntlement in the tertiary education sector and among students and faculty members especially, but the reality of the situation is that universities have to become more market-oriented. This means becoming more innovative in the service offered to learners and other university stakeholders and developing strategies to generate revenue; most notably, building capacity to create new revenue flows from previously unexploited markets, knowledge and know-how.

During the 1980s and 1990s, there was a significant growth in the number of students studying part-time and through distance learning. There has also been a dramatic growth in non-traditional learners, beyond the typical 18–24 year old mainstay of university demand. The growth in and essentiality of lifelong learning, women returning to the workforce after child rearing, a burgeoning retirement age population together have dramatically shifted the demographic reality of tertiary education. It is not surprising then, that flexible delivery has become something of a mantra for tertiary educational institutions as they seek to satisfy these non-traditional students while also tapping into new national and global opportunities.

This ‘appropriate’ delivery trend has accentuated since the turn of the century with the emergence of new forms of distance delivery that draw upon advances in the various information and communication technologies (ICTs). Internet-based delivery of education can no longer be regarded as a fad or the realm of the nerd. It is a vital tool in the quest of universities to face their new learner demographic.

Accordingly, this paper celebrates the renewed commitment to learners and learning and the possibilities that new and emerging ICTs are creating. Such technology-facilitated liberation of tertiary education and the opportunities it presents is exciting and on the way to transforming the learning landscapes. Particularly exciting is the increasingly sophisticated pedagogy these ICTs support — a pedagogy that is interactive, engaging, and capable of producing deep learning outcomes for a greatly expanded population of learners, locally, nationally and, increasingly, globally.

The ivory towers are crumbling

We have broken that insidious link between quality and exclusiveness of access, which has tarnished education for centuries and is still rampant in many universities today.

Sir John Daniel (1998), Vice-Chancellor, The Open University, 1990–2001

We believe that there has not been any significant change in the tertiary education sector for centuries. There have been tweaks here and there but, by and large, as a sector it has been slow to change and, indeed, *resistant* to change. Recently though there have been indications of a major paradigm shift, and two factors might be advanced to explain this; first the changing political and economic landscape that has forced universities to become more stakeholder and market-oriented; and second, what might be described as the ‘disruptive technology’ of e-learning (Hart & Christensen, 2002). We welcome both of these developments because of the vast opportunities they present to people who are currently poorly served, or not served at all by tertiary education. Perhaps more significantly, we believe that — with a few exceptions — tertiary institutions have little alternative but to embrace learners and learning in order to take advantage of these new market openings.

The OxforDs and Cambridges and the Harvards and Stanfords have the ‘brand equity’ to continue pretty much in the same mould if they wish — as they have for nearly a millennium in the case of Oxford and Cambridge. But for those without such brand equity, failure to adapt could cost them dearly in enrolment and prestige. Meanwhile, those taking the plunge need to proceed with caution. E-learning is turning out to be *evolutionary*, not *revolutionary*. So long as an institution has a strategy founded on quality, it is possible for the institution to evolve as e-learning experience evolves. Those jumping on the bandwagon without care and support — and who attempt to replicate campus-based paradigms online — are in for a rude awakening.

The first signs of change in the political/economic setting emerged in the late 1970s with the demise of post-war Keynesian consensus regarding the role of the state. Private enterprise rose in importance, and big government became unfashionable, the dominant ideology becoming one of fiscal stringency. State-funded tertiary education did not escape public sector spending cuts and, suddenly, there was pressure on universities to be a lot more creative in their funding sources. The growing market orientation of higher education brought sweeping changes in universities across the world as they have been forced to address ‘non-traditional’ student segments and markets. New course development requires tangible evidence of student demand; efficiency being of utmost importance. Universities have also had to develop much stronger ‘stakeholder’ foci. Failure to recognise students as ‘clients’ runs the risk of demise in the marketplace — or, worse, notoriety — leading to reduced funding, cuts to courses and staffing levels, and even closure. In sum, the last quarter century has borne witness to what Carrier (1990) refers to as the ‘massification’ of higher education. The student profile has changed dramatically: socially, culturally, and economically. However, there simply has not been sufficient funding to meet the needs of this increasingly diverse student body. It is in this context that e-learning has been touted as economical and effective medium for the delivery of tertiary-level courses, allowing universities to tap into burgeoning global demand.

According to the 1999 World Trade Organisation’s Education Service Report, the global market for higher education and training was estimated at US\$27 billion in 1995. IDP Australia estimated that in 1999, there were 48 million learners in the world, 17 million of which were located in Asia. IDP projects that, by 2025, there will be 159 million learners (87 million of which will be located in Asia). Demographic trends are at the heart of this phenomenon: ageing populations in Europe and America underlie their falling relative share of global demand; while in China projected demand for higher education is set to grow astronomically. Currently, 3% of Chinese 18–22 year olds have access to higher education. By 2020, demand is expected to grow to 20%, or 240 million people. Demand for higher education in India is also predicted to grow dramatically over the next decade or so — although this pales by comparison to the Chinese case — with the number of 18–22 year olds seeking higher education is set to double from 4% to 8%, corresponding to 11 million people.

According to Merrill Lynch in its 2002 publication, *The knowledge web*, online providers of higher education can expect to capture at least half of this growth in student numbers — somewhere in the region of 45 million learners. Multiplying this number by the average price of annual tuition (approximately US\$4,800) the global market for online higher education will be roughly US\$216 billion 15 years from now.

From teaching to learning

There are two fundamental equalisers in life ... The Internet and Education. E-Learning eliminates the barriers of time and distance, creating universal, learning-on-demand opportunities for people, companies and countries.

John Chambers, Chief Executive Officer, Cisco

Tom Kelly (also of Cisco) when commenting on the evolution of e-learning uses the analogy of the movie industry. We have gone from live stage performances (classroom training) to motion pictures (e-learning). While e-learning has not entered the Spielberg blockbuster phase yet, the industry has been moving rapidly in this direction. In the early days it was not called *e-learning*, but rather CBT, or *computer-based teaching*, which reveals the primary focus at the time. Nevertheless, they were exciting times, as university Vice-Chancellors — seduced by these emerging educational technologies — threw caution (and lots of money) to the wind. These were the halcyon days of e-learning. Things are different now. E-learning has gone through several evolutionary phases some of which have been highly optimistic, while others have been characterised by considerable pessimism.

After the initial, quite wasteful period that funded highly customised, pet projects of e-learning enthusiasts, we experienced a more conservative phase when people thought more deeply about the economics of e-learning. Funding was not so lavish, and project teams had to be accountable. Of special note was the emphasis on scalability of CBT projects, and whether they would yield tangible investment returns. This preoccupation with the economics of e-learning was also a driver of the shift to learning management systems (LMSs) in the mid-1990s. Operating almost exclusively within a local area network (LAN) environment, these early LMSs were an attempt by educators to pool ideas and resources, to avoid ‘reinventing the wheel’, and to provide a more integrated learning experience for students. After a period of relative austerity, there was renewed optimism about what could be achieved via e-learning.

Next came the ‘dotcom’ boom and the unlimited promise of the World Wide Web. LMSs were no longer strictly LAN-based for internal use. Instead, education was online, anytime and anywhere so long as you had an Internet connection and a credit card. Seemingly, anyone with a power supply in the back shed could set up an e-business. E-learning providers quickly sprung up everywhere amid grandiose claims of limitless cheap and efficient access to education, free of the bureaucracy and rigidity traditionally linked to mainstream educational institutions. The dotcom boom quickly gave way to the dotcom crash. There were a number of casualties, including e-learning, and a retreat to the safety of ‘bricks-and-mortar’.

So what does the future hold for e-learning in the post-dotcom era? If the e-learning cycle articulated above is any barometer, then it would seem that a period of renewed optimism is likely. This time, however, rather than a transitory phase, there is evidence to suggest a period of sustainable growth in e-learning is possible. We have the bandwidth, the technology, and the pedagogical skills. It is now a question of combining these effectively and, if successful, a major paradigm shift is in the offing.

The single most dramatic effect of this paradigm shift is learner sovereignty. The teacher role — at least as defined by the instructivists — now belongs to a bygone era. Students have much greater autonomy over their learning, in terms of when, where and how they learn. Interaction with fellow students and faculty is literally (and metaphorically) at their fingertips. With asynchronous discussion boards as the *modus operandi*, learner interaction is heightened. E-learning is very inclusive and democratic in this sense, in that everyone has an equally ‘loud voice’. No one talks over you or interrupts before you have time to make your point. Meanwhile, course materials are varied in format, media rich and constructivist in instructional design.

Harnessing the power of ICTs, assessment tasks can be real world, authentic and engaging. Since content is developed in advance, faculty have more time to devote to individual students permitting shorter turnaround times on feedback. Importantly, as less time is spent in didactic content transmission, there is more time for reflection and critical analysis — important, lifelong learning skills. Finally, learning online provides students with an opportunity to be part of a strong learning community (Kassop, 2003). This is the ‘surprise package’ for some, although maybe not for those benefiting from the very successful online dating industry! If you can find a life partner online, forming a friendship with an online classmate is relatively straightforward.

The failure of major universities around the world to suitably address the needs of learners, especially undergraduate learners, has been well documented (Pocklington & Tupper, 2003). In the absence of meaningful competitive pressure, universities have simply not changed significantly in meeting the changing and growing demands of their increasingly diverse learners. Advances and experience in the e-learning space, along with the growing ubiquity of access to greater bandwidth, are highly likely to change this. As discussed, a growing optimism, tempered by a decade of experience and disappointments, is creating diverse e-learning environments and learning experiences that are likely to shake the foundations of teaching and bring on a new era of, and commitment to learners and learning.

Summary and conclusions

The First Law of the Internet states that the answer is on the Internet. Therefore the quest is no longer “Where to find the answer” but “How to word the question”.

Randi

Education is no longer about teachers and teaching. Societal forces now demand that the focus be on learners and learning. In parallel, the ICTs are opening up a varied supply of new and powerful possibilities for learners and learning. The ‘sage on the stage’ is giving way to the ‘guide on the side’. Significantly, e-learning is turning out to be *evolutionary*, not *revolutionary*. Institutions with strategies based on quality learning outcomes are well placed to benefit from this e-learning evolution.

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