
RESPONDING TO THE PERFECT STORM: IMPETUS TO CREATE AN EDGELESS UNIVERSITY?

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Introduction

For better or for worse, we are seeing profound change in society, the workplace and how learners live and work. In today's interconnected technology-supported and driven world, learning typically takes place in physical, virtual and remote places. It is an integrated, highly technical environment. Educational institutions worldwide have access to a range of information and communication technologies which is creating exciting new learning and teaching opportunities and is challenging existing practice. Online learning is now part of much of mainstream higher education and innovative learning approaches have the potential to transform the industry. Rapid changes in the nature of the workplace, work (new jobs, new careers), the structure of organisations, and the pervasive presence of networked technologies are requiring a shift in focus in the world of education and training. A skill learned this week may be out of date the next making it apparent that traditional ways of working in educational institutions are unsustainable, requiring an "adapt to survive" imperative.

However, in this environment of immense change, the design methods used to foster learning have remained strangely outdated – created for a time and need which no longer exist and often the introduction of "innovations" is poorly received and often rejected. There is a concern that "new wine" will be put into "old bottles", with some teachers using the new and emerging technologies to recreate traditional learning experiences. McLuhan (1995) suggests that the use of new media has a tendency to copy old media without recognising the unique potential of the new. Thus the innovative educational possibilities created by new media are lost as the old pedagogy is "delivered" in the new medium. Lectures are often delivered online, with the added novelty of computer-based media (Garrison & Anderson, 2003). Simply using the capabilities of the technology to deliver traditional transmissive styles of learning misses the opportunity to engage educators and learners in interactive and collaborative learning and the chance to create new and compelling knowledge. An observation by Friesen (2009) in his reference to a paper by McLuhan and Leonard written in 1967 is the similarity of many arguments made today to those made 42 years ago - that schools are as outmoded as the mass production model on which they are based, that the very nature of this age of new technology will shape education's future, that the walls between school and world will continue to blur and that future educators will value, not fear, fresh approaches, new solutions. Are McLuhan's statements, restated by Friesen (2009) prescient, premature, preposterous, or all of these? What does this say about current predictions and current situations in the higher education sector?

Dede (2001, as cited in Reushle, 2005, p. 2) asserted that "the most significant influence on the evolution of education will not be the technical development of more powerful devices but the professional development of wise designers, educators and learners". What has hindered such ideas in the higher education setting? Raschke (2003, p. 110) claims that higher education, unlike other "pillars of culture" or "sectors of the economy" has undergone little change over the last 80 or so years. He notes that despite significant cultural, social, economic, and political revolutions, the view of learning and teaching in higher education "does not look or function much differently from the way it did in the 1920s". He believes that this resistance to new systems of knowledge creation and distribution is linked more to the desire to sustain a sense of privilege and aristocracy, than to a fear of the loss of quality standards. He observes that much of higher education has refused to join the "information grid" and that a good deal of institutional resistance to technological transformation stems from a belief that knowledge is nothing but "the transfer of information from one database or brain to another". However, this lack of transformation may not only follow from the reluctance of the academic community to change. The pressure of mass education and student diversity – more students, more fees, more marketing emanates from an administrative perspective and in order to manage these numbers and process them (throughput, completion rates), there needs to be regulation that facilitates the mass education focus. The traditional classroom model

allows large numbers (cohorts) of students to move through the system at the same pace in the same order providing a cost-effective means to do this.

So, how has the global educational landscape evolved and changed since these observations were made in the previous decade? Where have new and emerging technologies taken us as educators? How has access to these technologies impacted the higher education scene, how has government policy accommodated and supported this change, and how will institutions look in the future?

Global Context

In today's knowledge economy, the role of higher education is being redefined. Hilton (2006, p. 1) suggests that this may be viewed as "a perfect storm, born from the convergence of numerous disruptive forces...[and] as the dawn of a new day, a sunrise rife with opportunities arising from these same disruptive forces". How an institution chooses to respond to the disruptions can shape its future direction.

Using technology in innovative ways can be at the heart of institutional change but this does not mean building rooms full of computers on a university campus. The internet, social networks, and collaborative online tools allow people to work together more easily and the provision of open access to content can be both the cause of change for universities, and a tool with which they can respond. Lang (2003) has used the term "edgeless" to describe cities subject to a certain type of sprawl. Universities too are experiencing "sprawl". The function they perform is no longer contained within the campus, nor within the physically defined space of a particular institution, nor, sometimes, even in higher education institutions at all. The university is becoming defined by its function – provider and facilitator of learning and research – not its form. At the heart of this is the recognition that "people [are] finding new ways to access and use ideas and knowledge by new networks of learning and innovation" (Bradwell, 2009, p. 8) made possible by technologies like mobile internet and social networking.

Bradwell's (2009) report identifies several challenges to managing an edgeless university including the need to reconcile informal learning with the formal system. To achieve this requires strong leadership at institutional and governmental levels. Systems for accrediting informal learning will undoubtedly create pressures within institutions at all levels particularly regarding the cost, and public perception. A number of professional bodies who accredit degree programmes may also be resistant to such change and this is certainly an area where the Government needs to lead. The report also highlights that becoming edgeless isn't about becoming faceless - students still highly value human contact and connection and staff need the opportunity and incentive to develop new ways of working. Bradwell (2009, p. 63) concludes that:

In building the e-infrastructure for higher education we should not just build around the needs of institutions as they exist already. To pursue the possibilities of the 'Edgeless University', technology will have to be taken more seriously as a strategic asset. Technology is a driver for change.

Although policy initiatives support research, a notable feature of most elearning policy is the disconnection with the rich and long tradition of distance education (Brown, Anderson & Murray, 2007). With the notable exception of some European countries, one or two Canadian provinces and parts of Australasia, open and distance education using new technology has been presented as a completely new phenomenon. The disconnection with the traditional academic literature on open and distance learning suggests a basic confusion and tension between the purpose and perceived value of elearning within the policy discourse. This means that much of the research in distance learning and the implementation of approaches to learning and teaching outside the classroom boundaries tend not to have informed the application of emerging technologies.

Australian Context

Australian distance education evolved from an educational tradition based on an independent learner model. A small population spread over large geographic distances meant that traditional distance education experiences were historically based on self-contained and predominantly print-based learning packages. The distance education courses were designed as stand-alone learning packages, based on the presumption that remote learners would be unable to access other resources or have easy contact with peers or teachers. In the

independent learner model, students worked independently through course materials that were designed on the idea of a student/content interactive approach. They submitted assessment items and received feedback and grades, with minimum interaction with teachers and fellow students, unless an on campus residential school was scheduled as part of the program (McDonald & Mayes, 2007).

The University of Southern Queensland (USQ), an Australian regional university, has offered distance education for more than 30 years and has approximately 26,000 enrolments, including over 7,000 international students. USQ offers under- and post-graduate programs on campus, nationally and internationally using flexible delivery. USQ's 2020 vision "to be recognised as a world leader in open and flexible higher education" is reflected in the institutional mission to enable broad participation in higher education. USQ's development as a flexible learning provider has evolved through a number of significant initiatives. USQ delivered its first course solely online in 1997, and then in 1999 a major online initiative called USQOnline enabled the delivery of multiple courses via the Internet to students worldwide. From this point on, USQ has moved through several technology-enhanced phases: hybrid, multimodal, blended learning and fleximode. Key initiatives in recent times have included the position of Principal Advisor, Learning and Teaching within the Division of ICT Services to bridge the gap between the academic community and ICT services and the establishment of the Centre for Research in Transformative Pedagogies to promote and support research related to learning across multiple discipline areas in face-to-face classroom settings, flexible and online learning environments, workplaces, and wider social settings.

Disruptive Forces, Challenges and Constraints

Despite all of these efforts, disruptive forces, challenges and constraints have contributed to the concept of the "perfect storm" which impacts on the success of innovation and change in educational institutions. These disruptive forces do not necessarily indicate a problem and may, in fact, result in positive outcomes according to the diverse contexts in which they occur. Organisational philosophy, policies, existing infrastructure, requirements of accrediting bodies, procedures and economic imperatives are conditions which are a reality in most educational environments. In some instances, these organisational characteristics can challenge and constrain the adoption of a particular innovation. Learning and teaching contexts, such as discipline areas, sizes of classes, facilities and resources, lack of prestige or rewards for innovative teaching and working conditions all contribute to the circumstances that influence a learning environment's ability or willingness to embrace an innovation.

In Australia over the last three decades, there has been a substantial increase in numbers of students accessing university education, a considerable change in the student profile of those entering universities and in the expectations of students. Supported by a number of government initiatives to increase access, participation, retention and success in university programs for a number of targeted disadvantaged groups, universities have opened their doors to a more diverse student group thus legitimating flexible pathways for university entry. Other influences include the expansion of teaching strategies available particularly through flexible delivery initiatives and the shrinking financial support from governments leading to increasing trends toward 'user pays'. In many Australian universities, particularly the newer ones, this focus has positioned access and equity as central and strategic concerns and faculties have experienced greater pressure to do more with less.

One of the most challenging aspects to change in learning and teaching practice has been the physical "classroom", many of which were designed and built for a one-to-many, teacher-centric mode of instruction, with students often passively receiving information. These spaces provide little opportunity for incorporating technology usage into daily activity and are quite inflexible in design. One wonders just how much (or little) educational institutions have in fact changed in this last decade. Siemens (2004) made the observation that in spite of advances in neuroscience, collaborative technology, and a globalised business climate, learning is still largely based on design theories created during the early 1900s to 1960s despite the fact that technology and changing learner needs have created a climate that requires a more dynamic alternative. Do the management and administrative structures and processes in higher education acknowledge the collaborative learning ideals of the post-industrial era or are they continuing to subscribe to management techniques that fit with the industrial era – that of the lockstep, independent learner constrained by administrative timelines and institutional processes?

Despite many of today's students being digitally literate and interacting with internet-based technologies in a variety of ways, much of our current education system has been designed with a different student in mind. We need to consider the experiences and capabilities of our students and incorporate new technologies in a meaningful way within the tertiary context. This consideration is not only designed to motivate and engage the learners, but will also help prepare our students to be vital members of society. Globally (this data takes into account the countries of US, UK, Australia, Brazil, Japan, Switzerland, Germany, France, Spain and Italy), time spent on social networks increased an average of 2.5 hours per month between December 2008 and December 2009, a growth of 82 percent year-over-year (The Nielsen Company, 2010). Interestingly, Australia led in average time spent per person on social media sites in December 2009 with the average Australian spending nearly 7 hours per month on social media sites in that month. The United States and the United Kingdom came in a close second and third.

In summary, challenges and constraints can include the building and sustaining of an effective learning community where learners are physically separated, the challenge of maintaining a cost-effective and sustainable innovation, the challenge of aligning a learning innovation which subscribes to contemporary learning principles with an environment that may reflect a traditional view of classroom-based teaching, the tension between flexibility, and interactive and collaborative learning and the need for organisational management to recognise the complexities of learning and teaching innovations in today's world.

Dare to be Different

Shared Vision

The need for a shared vision and consultation and collaboration at all stages of the developmental process is critical. Bennis and Nanus (1985) make the point that "the acceptance of a new idea is never determined solely by the quality of that idea" (p. 42). They believe that successful organisations depend on the existence of shared meanings and interpretations of reality, which facilitate coordinated action. Over the years, most universities have recognised the promise of learning technologies, but what is often missing is an overarching sense of purpose along with any practical sense of what the shape and consequences of successful innovations might look like. One might ask if this has changed significantly in the last twenty years. This direction has significant leadership implications including the establishment and maintenance of effective, multi-directional communication channels to promote shared understanding amongst all levels of an institution and the management of expectations against the reality of experience in a constantly changing environment.

Institutional Response

Professional development activities in a university should be directed at changing the beliefs of people as well as altering teaching approaches. The development of a professional learning community supported by the synergy of university (organisational) commitment (and tangible support) and individual commitment can encourage change to take place. Absorbing rises in student numbers, pursuing research excellence and handling the diversity of needs and demands of students presents challenges to universities as people continue to take advantage of more flexible opportunities to learn outside the system. For example, for many years USQ has been "edgeless" geographically in that it has provided education outside of its physical spaces. New and emerging technologies are enabling it to move into spaces not yet inhabited by its educational footprint and to tap student markets far beyond those traditionally reached. USQ has also been edgeless in research as innovation has depended increasingly on collaborations between institutions and among academics. This is the value of, and the opportunity for the concept of the edgeless university where USQ is exploring new ways of accrediting learning, of providing recognition for research and learning and of offering affiliation with partner institutions. Participants in informal learning will further be offered help in finding routes to formal qualifications through a process of connecting with alternative providers and committing to exploring new forms of course provision (e.g., through mobile technologies). The challenge is to get the relationship between the institution and the technology the right way round so that the primary focus is not on acquiring technology but on the role of technology in supporting the transition to a wider learning and research culture.

The Concept of "Openness"

The Open Educational Resources (OER) movement, embraced by a number of international organisations including UNESCO, The World Bank, OECD, The Commonwealth of Learning and The European Union, has

proved significant in the global higher education arena (Taylor, 2007). The central tenet of the OER movement is that the world's knowledge is a public good and that a culture of sharing resources and practices will help facilitate change and innovation in education. This educational perspective has been gaining momentum across the world for nearly a decade and is impacting the way many institutions and individuals view education (New Media Consortium, 2010). USQ's commitment to a culture of "openness" from its adoption of Moodle as its Learning Management System, to its focus on the development of open source software, its membership of the international Open CourseWare (OCW) Consortium (<http://www.ocwconsortium.org/>) through to its establishment of an Open Access College to reach a broader student base through technology-enhanced learning opportunities and a more open entry policy again illustrates its response as an institution to the disruptive forces and contributed to its vision of being an edgeless university.

The Element of Risk

Mitchell, Winslett and Howell (2009) report that there should be a healthy tension between safety in information technology (security, etc.) and risk experimentation when providing and supporting technology-enhanced learning, teaching and research (Figure 1). Increasingly, learners are bringing their own devices to the learning environment so there is becoming less of a need to provide the actual hardware and more of a requirement to ensure the infrastructure available supports these ubiquitous devices. Because the devices often belong to the student and operate through networks outside the institutional environment, modifying and locking down the machines may not always be possible or desirable, resulting in challenges for those in the business of technology management and control. They encourage IT managers to challenge the security/risk issues rather than allow them to stifle innovation. This may seem at odds with the control that systems and IT departments usually exercise over access to the internet but no longer can institutions simply ban or prevent access to resources because individuals are able to go around such barriers and find other ways of carrying out their daily activity. Mitchell et al.'s (2009, p. 92) belief in the focus on encouraging technological innovation rather than "managing risk" reflects a growing trend in higher education and make the point that "risk management and innovation are not necessarily good companions" and that new policy may be required to enable the exploration of innovative ideas that are not necessarily consistent with previous practice.

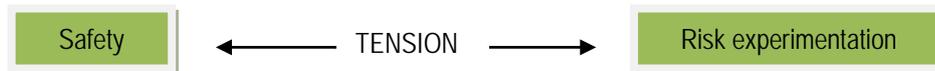


Figure 1 Managing risk

This acceptance and adoption of a more flexible approach to risk is also an imperative for academic and administrative fundamentals of an educational institution and reflects Bradwell's (2009, p. 58) view that "being able to develop new ways of teaching depends on the capacity to experiment". How to motivate academics with limited time to experiment and engage with innovations in the face of competing priorities presents a significant challenge. The need to revise organisational structures, policies and perceptions to facilitate the diffusion of educational innovations is apparent and finding the means to promote innovative educational methods that challenge established culture and practice with limited evidence of initial positive impact present challenges to an institution. This, aligned with a conscious and explicit effort by the organisation to value the time and effort required by everyone to explore and adopt innovations and to reward and sustain the outcomes of these efforts will also contribute to successful transitions.

Conclusion

The adoption of various information and communication technologies in higher education has tended to change teaching from what was traditionally a private or behind closed doors activity to the opening up of courses to scrutiny in terms of content and processes. In contrast to the more transient and relatively private nature of on-campus lectures, online teaching materials are often developed using across-institutional teams with timelines somewhat outside the control of the teacher. This imposed structure for development and preparation can add to the sense of disempowerment and loss of academic autonomy. The implementation of flexible learning creates both opportunities for innovative learning and teaching practice, and provides challenges as academics seek to adapt to changing educational environments. The trends in and impacts of the use of information and communication technologies in the higher education sector mean that change is an ongoing, organic factor of tertiary education where there is no point in time at which everyone can declare a victory and go back to normal

life. This is not necessarily something to be feared as it promises to offer exciting challenges. USQ's latest move towards the edgeless university has been the establishment of the Australian Digital Futures Institute (ADFI). The strategic focus of ADFI is to identify, test, and promote the application of new and emerging technologies with a view to transforming learning and teaching practice and research activity across the university, within and across disciplines and extending to national and international collaborators. The key to organisational change and sustainability is to embrace the disruptive forces, exploit the energies created by the perfect storm, accepting that this may require significant change in the cultural orientation of stakeholders.

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