Implications of the Virtual University Experience

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Abstract

The late 20th century saw the development and rapid adoption of a number of technologies that have since reshaped and transformed many aspects of our lives. The pace of change has also accelerated rapidly, so that we can no longer assume that any future Australian society will be similar to the one we have today. One of the most invasive technologies, the Internet or world wide web, heralded predictions of a new kind of education – a Virtual Education, in which online delivery would supersede and ultimately replace more traditional models. Students would no longer sit behind desks in classrooms interacting in real space, but rather, sit at a keyboard in their lounge rooms interacting in a virtual space. The traditional model was considered to be outdated, archaic and destined for extinction.

A decade or so on from these predictions, it is clear that this is not what has actually eventuated. While online facilities have certainly appeared in the majority of tertiary institutions in Australia they have not threatened, let alone replaced, more traditional modes of delivery. Why has the predicted superiority of the online or virtual model not come to pass? Given that IT in universities is not going to go away, what role is it likely to play in the institutions of the future? And what constitutes “quality” or a “quality education” in this brave new world, in which it is predicted that 9 or even 10 complete career shifts may not be uncommon throughout the 21st century working life? This paper will explore IT technologies and their role in higher education: how they can aid us, enhance us, but not ultimately devour us.

Introduction

The idea that there has always been a close link between human development and technological innovation is not new. Given this context it seems unlikely that the Information Age of the late 20th century will fail to leave its mark. Those who can remember life prior to the arrival of phenomena such as the internet have already witnessed the resultant effects on social and professional life, including higher education. But the rapid evolution of these technologies and the increasing expectation that an ever increasing proportion of life will be able to be conducted online leads to the question of how much further this impact is likely to spread. Will institutions of the future have a physical presence or will they be purely virtual? How will technology impact on the core businesses of teaching, learning and research? And how will they continue to be relevant to generations raised on Google?

Predicting the Future

Accurate predictions of the future are notoriously difficult to achieve. Technologies that were originally conceived as tools for peace include battleships, explosives and the atomic bomb. While many recognised that the internet would inevitably impact on education practice, predictions of “students following entire courses at a prestigious overseas university from the comfort of their own home” have largely failed to materialise. Even more moderate predictions, such as that made in 1998 by Apple computers that wireless laptops were set to transform the world of education have not eventuated even ten years later. Indeed, despite the obvious convenience that such a model would offer, the University of Phoenix arguably remains the only large, fully online tertiary institution that has experienced lasting success. Yet it is highly unlikely that online technologies will disappear from the educational experience of the future. So why did these visions get the future so wrong?

1 Ambrose, 2001, p.1748.
2 Edgerton, 2007, p.46.
It is important to note that many failed predictions tend to share a similar fault which could be summarised as a neglect of context. Tools are often designed with a limited number of goals in mind, and it is all too easy to conceptualise future use in terms of current or intended practice. However the longevity or actual use of a product is more likely to reflect how consumers want to use it, irrespective of the maker’s intentions. It’s an old joke that the eventual success of a new technology can be predicted by how quickly it gets adapted by the porn industry; however Arlidge notes that many daily tools such as Camcorder, VHS and satellite TV movies all became mainstream only after being successfully used to produce cheap adult entertainment. While it would be ridiculous to claim that any technology that does not have a pornographic application will not survive, it does serve as a powerful example of how people will tend to adapt new technologies to suit to their perceived needs, rather than those conceived by the creator. Consequently, predictions involving technology that fail to take into account this human factor are not likely to eventuate.

It is thought provoking to examine the impact of recent technology on education. Raised on Google searches and Wikipedia, bringing with them a vast quantity of information of varying quality, Generation Y has never known the disciplined, rigorous approach to research inherent in previous generations. This has fostered a distinct shift in attitudes towards information itself, in which speed of access is more highly valued than accuracy, and no one source is seen as more authoritative than any other. At the same time the quantity of information with which students are expected to interact is increasing; the sum total of data in the world is estimated to be doubling every four years, making the task of keeping up to date ever more challenging. Recent research by neuropsychologist Ian Robertson has shown that the average citizen must now memorise five passwords, five pin numbers, two number plates, three security ID numbers and three bank account numbers just to get through day to day life, leading six out of ten Britons to claim they’re suffering from “information overload”. The consequences for the education sector have been arguably twofold: first, that students are no longer engaging with the learning process as previously, relying on Google rather than their own memories to access facts or data; and second, that the pace of change is making it harder to teach data or facts in the same way. This might be one explanation behind the worldwide decline of interest in IT programs at tertiary level; rapid developments within the industry on an almost daily basis make it difficult to ensure that data taught at the tertiary level is not obsolete by the time of graduation. This raises the obvious question of what a graduate has actually gained by the process of obtaining a degree. But the implications for higher education institutions go beyond frustrations such as these. The popularity and convenience of electronic media have produced a pressure for all kinds of information to become electronically accessible, creating a previously unknown data democratisation. Greenfield gives the example of the cost differential between a print version of the Encyclopaedia Britannica, which at approximately £1,000 is of limited affordability, and the CD version at £50. Similarly, many universities are now placing previously limited course materials in public access areas of their websites, making them open to any interested person world wide. In Australia, additional pressures are arising as the tertiary education marketplace is becoming less regulated. Recent developments have not just been limited to new institutions entering the marketplace, such as Carnegie Mellon and Cranfield Universities in Adelaide, but have included the development of new types of institutions, incorporating private providers, the reshaping of Melbourne University, and the possibility of TAFE offering nursing degrees. Furthermore, in the longer term future it is possible that learning itself may become obsolete as knowledge is downloaded directly into our brains. Susan Greenfield outlines experiments that are underway into the direct electronic stimulation of specific experience, and researchers at the University of Florida are currently creating a neuroprosthetic implant that could “gather data from signals, decode them and stimulate the brain in a self-contained package without wires”.

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5 Arlidge, 2002.
6 Nimon, in press.
7 Greenfield, 2003, pp.176-177.
8 Quinn, 2007.
11 Institutions with open access course materials include: Carnegie Mellon University (http://www.cmu.edu/oli/), University of California Berkeley (http://webcast.berkeley.edu/courses.php) and Massachusetts Institute of Technology (http://ocw.mit.edu/OcwWeb/index.html).
12 Illing, 2007, p.3.
13 Greenfield, 2003, p.158.
The Future of Universities

The need to re-evaluate and refine the role of education providers within society is hardly unprecedented. Greenfield makes the point that education does not remain static, but shifts as the knowledges necessary for the successful operation of society change: “Formal education was not needed in the slow-moving, agricultural, feudal economies. But then, farmers and peasants were transformed into workers and managers”. In other words, the schools of the future will not simply be the same as the schools of today but with more computers in them. Her suggestion is that, while a certain degree of inherent core knowledge may still be necessary to learn by rote, the overall emphasis may need to shift away from the transmission of data or facts, all of which may be more effectively stored by electronic means, towards an appreciation of the context or conceptual framework required to understand the data. Similarly, the acceleration of the quantity of data necessary to obtain an understanding of one’s chosen field may result in an incompatibility with the current three or four year bachelor model, necessitating a shift in the relationship between student and institution away from a traditional model, of a single transaction of three or four years, to one of lifelong learning. This could lead to more flexible learning structures, especially at the post-bachelor (or post-core knowledge) stage, and equip graduates to cope more easily in the multiple career model already emerging as a 21st century reality.

However, any such reorganisation of fundamental learning structures is subject to the same danger outlined above: one must not fail to take into account the human factor. In this context, that incorporates understanding not only the role of universities within society, but also how people learn, how people want to engage with the new technologies, and how these change. For example, studies involving Generation Y, or people born after 1980, have shown that the relationship between student and information is shifting. Access to the internet has fostered a desire for instantaneous answers, while at the same time failing to instil a sense of assessing the quality of information sourced. Weiler found that many considered time spent in gathering information to be time lost from more important activities such as “play”, and Oblinger and Hawkins note a lack of scrutiny of information sources or notions of intellectual property. However, the media saturated environment of this generation has stimulated other adaptations. Technologies such as instant phone messaging and email are often blamed for the apparent lowering of text literacy amongst Gen Y-ers, a phenomenon much lamented in business circles. But less acknowledged has been a concurrent increase in visual literacy amongst this generation, most likely driven by advertising, videogames and MTV. Weiler notes that Generation Y are primarily visual learners, and Steinkuehler found that many of this generation have a “superb” ability to evaluate and apply information within the gaming realm, even while they struggle with text based analysis.

Consequently, advertisements aimed specifically at members of this generation can appear baffling to older viewers. A case in point is represented by the harvesTED campaign designed by Lion Nathan to advertise Toohey’s Extra Dry beer. Targeted at the young adult market, the ad depicts a young man using a tractor to sow a strange looking crop of pods, which eventually burst to reveal other young people holding a beer. It’s intentionally cinematic, devoid of any dialogue and openly designed to catch a “screen” generation – one that communicates not through written language, but via television, movie or computer imagery.

17 Greenfield, 2003, pp.174-175.
18 Greenfield, 2003, p.177.
19 Nimon, in press.
26 www.harvested.com.au
While teaching and learning is clearly a core function of a tertiary institution, it is not necessarily its only purpose. Universities are not purely places for the transmission of information, but are also social entities in which individuals have an opportunity to socialise and obtain new experiences. That this function is valued by both students and the community is reflected in student responses to routine questionnaires such as the Student Experience Questionnaire (SEQ) as well as the community concern that accompanied the introduction of Voluntary Student Unionism in Australia. At the University of South Australia responses obtained from the 2006 SEQ showed that social functions were very much at the core of what Generation Y-ers considered to be the best aspects of their university experience. It is also possible that this aspect of the university experience may become increasingly important, if society continues its move towards individual isolation.

Together, these shifts suggest that universities may need to undertake a substantial rethinking of their position and activities within societies if they are to remain relevant. Certainly federal pressures have already precipitated much soul searching. However this may not prove sufficient for survival in the longer term, if current trends of social change continue along their present trajectory.

Technology has considerable potential to facilitate this transition, however its value is likely to reside in being a mechanism for adding value to the learning process rather than replacing it. This may explain why simply transferring lecture materials online has failed to overtake traditional models as it ignores the interaction aspect at both a social and professional level that students appear to crave. The SEQ comments obtained from UniSA give a strong indication that, while students may appreciate the convenience of online services, this does not mean they want it to replace a personal relationship with tutor, fellow student and institution.

**Technology and University: Working Together**

Podcasting, or the pre-recording of lectures for distribution via the internet, has recently arrived on the tertiary scene. While many institutions have shown interest in the technology, it is not yet a universal feature of Australian higher education. An example of current use is provided by The Flinders University of South Australia. Here all lectures are recorded in either video or audio format to which enrolled students are given password protected access. This has several advantages. Firstly, academic staff are only required to physically deliver any individual lecture once, as subsequent lectures can take the form of screenings of the podcast material. Secondly, it frees students from having to take detailed notes during the lecture, allowing them to pay more attention to the information itself. Thirdly, and perhaps most importantly, it opens up the potential for students to interact with the material as often as they like during the semester. Anecdotal evidence suggests that many students are using the online materials as an important part of their revision processes and that student interaction with academic staff is becoming more focused as a result. Furthermore, any fears that such a process will reduce the tendency of students to attend lectures appear to be unfounded. However, technologies such as podcasts represent only a fraction of the possibilities that technology is opening up for the education sector.

Massively Multiplayer Online Games (MMOGs) evolved from the early online games of the 1980s. Popularised through role playing fantasies such as *Everquest*, Blizzard Games recently announced that *World of Warcraft* (WOW), first launched in 2004, reached the level of 9 million players worldwide in July, positioning it just behind Sweden as the world’s 90th most populated country. Furthermore, the profitability of MMOGs suggest that their appeal has extended beyond its geek culture origins into the general community; Steinkuehler notes that in 2003 the industry as a whole made more money than the Hollywood box office, and predicts that it will soon overtake both the record industry and home video rentals. Turkle summarises its appeal as follows:

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28 Nimon, 2005, pp.31-32.
29 Obtained from confidential data held at the University of South Australia.
Playing one’s character(s) and living [in-world] becomes an important part of daily life. Since much of the excitement of the game depends on having personal relationships and being part of [that] community’s developing politics and projects, it is hard to participate just a little.33

It is perhaps this dependency on socialisation within the online gaming system that is the secret behind its success – unlike movies, which provide a satisfying though passive entertainment, MMOGs provide the user with not just a narrative, but the opportunity to enter and shape that narrative, while also fulfilling basic human desire for social interaction. Evidence is mounting that a large proportion of the people engaging in MMOGs do so not to game, but to enjoy interactive activities that can initially be difficult to comprehend when translated to a virtual sphere. The appeal of activities such as dancing, eating and sex is arguably that they are physical experiences which stimulate the pleasure centres in our brain. The endorphins released when we dance at a nightclub or eat a slice of cake provide a very real and immediate reward which is completely absent in the pixelated imitation of the same act onscreen. Yet the provision of avatars with such creature comforts is proving to be a booming industry. Kevin Alderman, represented in Second Life (SL) by his avatar Stroker Serpentine, has made enough money selling devices that allow SL avatars to engage in sexual activities that he now employs 12 staff to keep his online business running.34 These devices, or programs, cover a full gamut of activities from cuddles and kisses to simulated sex.35 Furthermore, Serpentine is not alone, with mature content estimated to comprise almost a fifth of the world’s activities.36 Similarly, other entrepreneurs have found significant demand in the online community for items such as apartments, furniture and designer clothing, despite there being no literal need for such items.

The notion that videogames could potentially be utilised as learning tools is an idea that has been around for decades. Their capacity to increase performance on visual, motor and spatial tasks has been identified since 1989,37 and subsequent researchers have extended this to include improvements in computer literacy,38 attention capacity39 and the ability to process information over time.40 Delwiche sees them as a continuation of the well established use of role play in education.41 This capacity has even been recognised outside the academic sphere, with the US military reportedly using Doom as a training tool for its marine corps since 1997.42 However more recent work has taken this much further, as the games themselves have become increasingly complex. Steinkuehler argues that MMOGs foster the development of complex problem solving skills, since players are often required to negotiate a direct goal, such as defeating another character in a duel, by less direct means, such as “crafting an in-game narrative that displays the winner’s alignment to community values such as honour, justice or humour”.43 Furthermore, tasks are often designed such that successful progression requires access to the collective intelligence,44 forcing players to learn how to operate within sometimes complex communities, just as they would in real life. Indeed, to Steinkuehler MMOGs are not environments so much as they are cultures, in which the interplay between creators and players produces a reality which is both designed and emergent.45 As Simpson states: “while the commodities traded are virtual, the resulting economies are not simulations”.46 Nor is the learning that is occurring, or the creativity that is being exercised.

Though spawned from an MMOG framework, SL is unlike its predecessors such as WOW or Everquest in that it is not a game, and therefore does not utilise in-game narratives, goals or quests. Rather, it is the online equivalent of a common room, in which users socialise, shop, interact, and increasingly carry out the tasks of

38 Benedict, p.206.
40 Green and Bavelier, 2003, p.536.
41 Delwiche, p.162.
42 Riddle, 1997.
45 Squire and Steinkuehler, 2006, p.3
daily life through the medium of a personalised avatar. In some ways it could be viewed as an evolution of quest based games, transforming the interactive and personal relationships from a useful byproduct to the central focus. SL is also unusual in that it actively seeks to recruit educational institutions into its domains, providing a platform for a new level of experiential learning. Greenfield notes that “interaction is a vital component of learning... the increased potential for... anyone, to be able to manipulate his or her environment would surely be a good thing”. Similarly, Lave and Wenger argue that knowledge and the process of learning cannot be separated from its social context; because meaning is contextual, learning is best facilitated through involvement in a social community of practice, such as occurs during apprenticeship. This capacity for experiential and contextual learning is precisely what SL provides.

Delwiche describes his use of Everquest as a tool to teach ethnography, or the qualitative research into a particular culture. In this example he required each of his 36 undergraduate students to log into the game as hobbits, and navigate the world while collecting data on the behaviours, cultural practices and motivations of other players. The idea was that students would study the principles of social science research through direct application. They were required to select their own topics, refine their own research questions, and conduct interviews in the online environment. Delwiche noted that while some had initial difficulty mastering the mechanics, the depth of the analysis provided in the work submitted for assessment suggested that many had attained a strong grasp of the material.

Delwiche’s study provides an example of the potential power of tools such as SL. Taking learning processes into virtual space creates an unprecedented capacity for students to undertake simulated learning experiences in interactive but safe environments. Rather than simply being used as an extra vehicle for the delivery of lecture material, its value would lie in its capacity to enhance the material delivered in lectures, especially amongst a visually literate generation. The student of the future could attend their lecture, revise it using a podcast, then log on to a SL world and put the theory they have learned to the test. An archaeology student could actually attempt an Egyptian dig; an architecture student could investigate the outcome of designing a building with different materials; and a biology student could walk through a three dimensional, interactive model of a cell.

There is also considerable potential in the use of the avatar itself. Greenfield notes the strong tendency in human beings to anthropomorphise inanimate objects, noting through the success of toys such as Furby and the Tamagotchi how few signals are necessary to trigger this instinct. Turkle describes the ELIZA effect, in which “[v]ery small amounts of interactivity cause us to project our own complexity onto the undeserving object”. Nass et al. conducted a series of experiments demonstrating that people tend to interact with a computer using the same social parameters as they would in human-to-human situations, despite conscious awareness that the computer is not alive. They showed, for example, that human subjects will tend to be more polite to a computer when evaluating its performance than they would when asked the same questions on paper or by another computer. Turkle explored this notion in related to the text-based games of the 1990s, known as Multi-User Domains, or MUDs. Through the example of Julia, a computer program designed to simulate a real player, she shows how a relatively simple set of programming parameters can produce a character that is readily perceived by players as real. Though nothing more than a comprehensive list of inputs and outputs, Julia is able to go beyond simple conversational responses to produce humour, gossip and even deflect persistent attempts at flirtation. Keltner suggests this is also behind the enormous popularity of emoticons in electronic communications, building on the strong human instinct to seek signals of intimacy and trust in the human face. Therefore it is not perhaps surprising to find research emerging that suggests many people feel strong connections to their avatars, despite their insubstantial nature.

47 Greenfield, p.163.
48 Delwiche, p.161.
49 Delwiche, p.163.
50 Delwiche, pp. 167, 165.
51 Greenfield, p.163.
52 Turkle, p.101.
53 Nass et al., 1994, p.74.
54 Turkle, pp. 88-90.
This raises the possibility that the avatar itself is a potentially powerful tool, not least because it could help to humanise the online interaction between student and institution. However, consider also its capacity to address issues such as cultural or gender differences. Turkle notes how several of her subjects adopt a range of personas from male, to female, to furry animal within different MUDs, each of which affects their interactions with other players. Other games, such as Jade Empire, provide the opportunity to step inside the mind of a different culture, with players forced to behave in a manner consistent with the philosophies and beliefs of that historical period. This area, which is ripe for exploration, could prove to be one of the most useful learning tools of the 21st century.

**Conclusion**

The future is always difficult to predict with any accuracy. The emergence of new technologies in the late 20th century, combined with federal pressures and the different attitudes of a new, technologically savvy generation, are stimulating universities to evaluate their approach to education, and even their role within society. While this process may not be a simple one, and may involve some trial and error, it also represents some exciting possibilities and the capacity to literally and figuratively shape the future.

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56 Turkle, p.13.


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