Online Learning
and Innovation

A Discussion Paper

2:2

VICTORIAN TAFE ASSOCIATION (VTA) MONOGRAPH SERIES

This paper is the second in a second series of short Monographs produced by the Association. The series has been initiated for a number of reasons, the primary one being that it is timely in the context of a new century to revisit some of the conceptual issues and philosophical principles underpinning the TAFE sector.

The sector has undergone radical transformation over the last few decades since the recommendations of the groundbreaking Kangan report were transformed into public policy. Rapid and sweeping changes have led to continued confusion about the roles and practices of contemporary TAFE, contributing to an undervaluing of the crucial role TAFE plays in the community and economy. This Monograph Series is one part of the Association's strategy to initiate public debate and comment on these issues.

A discussion forum will be held after the release of each Monograph, enabling the Association to get feedback and stimulate debate.

We are pleased to announce that Mr Chris Dodds, Executive Member of the Australian Council of Social Services (ACOSS), will be the guest speaker for the Luncheon Seminar for this Monograph. The Luncheon Seminar will be held in the Rainforest Room at the Melbourne Zoo on Thursday the 14th of June 2001.

If you would like to comment on this paper, attend the Luncheon Seminar, or suggest other issues for comment, please feel free to contact the Association's offices.

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This monograph is intended as a discussion paper and as such the views expressed in it do not necessarily reflect the views of the Victorian TAFE Association Inc.

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ABBREVIATIONS USED

ABS	Australian Bureau of Statistics
ACE	adult and community education
ANTA	Australian National Training Authority
AVCC	Australian Vice-Chancellors' Committee
AYF	Australian Youth Foundation
DETYA	Department of Education, Training and Youth Affairs
ICT	information and communications technology
NATSEM	National Centre for Social and Economic Modelling
OECD	Organisation for Economic Co-operation and Development
OTFE	Office of Training and Further Education
STB	State Training Board
TAFE	training and further education
UAO	University of Australia Online
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VET	vocational education and training
VTA	Victorian TAFE Association

INTRODUCTION

Computer networks are changing the way we think and interact
Mardziah Hayati Abdullah[1]

E-learning is an all embracing and cost effective way of training staff – how can it benefit your company?
Laura Sanders[2]

Online learning is, for want of a better description, a hot topic. It is an umbrella term that is used to describe a variety of ways of learning and a vast array of programs. The sheer amount of information and discussion occurring about it both nationally and abroad is testament to the importance of the topic. Online learning is well and truly on the education and training agenda in Australia and most other developed nations, and has been for a number of years. Certainly at least since the 1998 United Nations Educational Scientific and Cultural Organisation (UNESCO) World Conference on Higher Education, it has dominated talk of our visions for education in the twenty-first century.[3]

Two observations are worth noting from the literature about online learning. Firstly, this issue is mostly researched and discussed by people who are already in the business of online learning and who thus tend to advocate it. When opposers of online learning are called upon, they are generally unduly negative at best, and sensationalist at worst. It is also clear that much of the discourse about online learning assumes that its prominence in education and training is inevitable. The agency of individuals, institutions and nations to make choices about online learning as part of their teaching and learning strategies is seldom acknowledged.

This paper seeks to challenge the latter assumption - what it calls the 'inevitability position' - as well as the polarising of the debate about online learning into a good:bad analysis. Readers will observe however, that much of the paper falls more on the critical side of the debate. This is quite deliberate and is part of a concerted effort to counter the majority of literature which fails to address legitimate concerns about online learning in a fair and reasoned way. It is important to emphasise at this point that we are concerned here with the general system-wide move in education and training toward online learning as opposed to an analysis of individual provider decisions regarding online learning or specific online programs. Part of the point of this series of discussion papers is to critically analyse at a 'big picture' or philosophical level.

The discussion paper hopes to avoid relying on the rather obvious and commonplace conclusion that a 'balance' is required between online learning and face-to-face or more traditional methods of learning. While this conclusion may be true, it is vague, often leads to a silencing of productive debate and is mistaken for approval of current policies and practices regarding online learning. The paper is built upon a discussion forum and other interviews with experts in education and training, an extensive literature review, and finally some intuitive intelligence and concerns. The latter is especially important because the trend toward online learning is relatively new. The paper is divided into seven parts representing major themes that have emerged from the research.

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1 Mardziah Hayati Abdullah, "Electronic Discourse: Evolving Conventions in Online Academic Environments," *ERIC Digest,* ED422593 (1998) http://www.ed.gov/databases/ERIC_Digests/ed422593.html

2 Laura Sanders, "The Virtual Classroom," *Training and Development Australia: Learning Technologies and Virtual Training* 29.2 (2001).

3 This conference adopted the "World Declaration in Higher Education for the 21st Century: Vision and Action Plan" which contained an emphasis on flexible online delivery. See, "World Declaration on Higher Education for the 21st Century: Vision and Action Plan," *UNESCO World Conference on Higher Education* (Paris, France: United Nations Educational, Scientific and Cultural Organisation, 1998).

The first section will set the scene of the debate and expand more upon who's talking about online learning and why, and part two will canvas some of the relevant financial issues which, unfortunately, often dominate the debate to the detriment of arguably more important social and learning issues. In part three I examine the demand side of online learning, asking who wants this type of delivery, and why. Because online learning is predominantly considered to be innovative (and thus good), I analyse the concept of innovation in part four, while part five will address the learning issues associated with online delivery. Part six will focus on what is commonly described as the 'digital divide' – that is, it will address some of the access and equity issues relating to online learning, and the paper will conclude with a discussion in part seven of some of the social issues and concerns about online learning. This final section recognises that educational institutions are one of the cornerstones of any society – particularly one such as Australia that considers itself to be a participatory democracy.

A recent statement by the Victorian State Government suggests that information and communications technology (ICT) is "a pervasive technology … fundamentally changing societies, economies and markets."[4] Of course, historically, advances in technology have altered the nature of education in ways that would have not been possible without the available tools.[5] Significant changes in communications technologies such as the advent of the telephone and television have always been met with some degree of resistance and some excitement – the internet is no exception.

Perhaps the major difference relating to the context in which the internet is spreading is that "[t]raditionally, the telecommunications providers of all the major developed nations have been highly regulated government-owned monopolies."[6] While many governments, including the Australian Government, have a significant stake in the ICT industry, it is not a highly regulated industry. If we, along with Chris Dodds, compare the rise of the internet to the rise of the telephone in Australia in the 1960s we see markedly different political contexts. As Dodds reminds us, the contemporary political context is one in which there is a "strong bipartisan commitment to free market mechanisms…"[7] as opposed to the 1960s when the "strategy for universal access to telecommunications was built into the Community Telephone Plan."[8]

While the ICT industry is not heavily government-regulated it is (arguably in contradiction to the free market ideology mentioned above) heavily invested in by governments. Governments generally take primary responsibility for ICT infrastructure. In Australia, ICT is an important part of both major political parties' policy platforms in the lead up to the 2001 federal election.[9] The Federal Liberal Government has invested quite heavily in ICT in recent years and in the vocational education and training (VET) field has invested significant resources into online learning via the Australian National Training Authority (ANTA). ICT and online learning are an important part of ANTA's five year (1998-2003) strategy – its online learning Toolboxes being perhaps the most significant part of its ICT commitment.[10]

The Federal Government has promised further post-election investment in ICT[11] and it is even more central to the Federal Australian Labour Party's election strategy. The centre-piece of Labour's education election policy is the establishment of a public online university called the University of Australia Online (UAO) which aims, among other things, to broaden access to education for people currently not in formal education and training by offering them flexible university degrees at a reduced cost.[12]

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4   *Skills x Knowledge = Growth: A Statement by the Victorian Government on ICT Skills* (Melbourne: ICT Skills Taskforce, State Government Victoria, 2000)

5   Zane Berge and Mauri Collins, "Introduction: From Marks in the Sand to Computer Conferencing Via Fiber Optics," *Computer-Mediated Communication and the Online Classroom in Distance Learning,* vol. 3 (Cresskill, NJ: Hampton Press, 1995)

6   "Communications and Information Technology: History of Communications in Australia," *Year Book Australia, 2001* (Canberra: Australian Bureau of Statistics, 2001) p.4

7   Chris Dodds, "Universal Access Needed to Bridge the Digital Divide," *Impact* (2000) p.7

8   Ibid. p.7

9   For the Federal Liberal Party's policy document *Backing Australia's Ability* see, http://www.liberal.org.au/reports/bt/010.htm.
    For the Australian Labour Party's *The Knowledge Nation,* see, http://www.alp.org.au/policy/#education

10 For more information see, http://www.flexiblelearning.net.au/toolbox/

11 The main example of this is the $176 million it has promised for world-class centres in ICT and biotechnology.

12 See, http://www.alp.org.au/policy/uao_factsheet240101.html

On a State level, a similar degree of enthusiasm is being exhibited for online learning. The 1997 *Review of Melbourne TAFEs: Ministerial Review of the Provision of Technical and Further Education in the Melbourne Metropolitan Area* recommended that the then State Training Board (STB) trial the concept of learning centres in community locations to ascertain the capacity of technology to improve participation in VET.[13] More importantly, following the review, the then Office of Training and Further Education (OTFE) invited tenders for a one year trial to establish Learning Networks and in 1998 established ten such networks in diverse geographical locations.

These Networks remain an important part of the current State Government's Flexible Learning Strategy which also includes an enhanced TAFE Virtual Campus; a professional development project for TAFE and adult and community education (ACE) staff called Let's Get Online; and the Flexible Learning Leaders Initiative which provides $20,000 to each TAFE Institute to support the employment of a Flexible Learning Leader.[14] The most recent State Budget contains further significant investment in ICT in VET and strategies to expand the State TAFE system's use of online learning.[15] Indeed, the expansion of online learning is set to be included as a requirement of TAFE institutes' performance agreements with State Government and as such, indicates the general trend by governments to encourage educational institutions to increase online provision.

The trend toward online delivery both generally, and more specifically in the Victorian VET system, is clear. What is less clear are the government and system motivations for this trend. While, as mentioned earlier, much of the literature about online learning is polarised, there are perhaps four broad positions on the topic ranging from an overwhelming positive view of online learning that suggests that it is better, cheaper and inevitable, to an outright negative view that suggests it is a cynical cost-cutting move to rid society of teachers, which will therefore damage learners (children in particular).

The more common position is a variation on the first and is often used as a defence against the negative position. It opts for a more hybrid model containing both online and face-to-face delivery. Finally, the fourth broad position is that identified by Mark Landy (and of which he is critical) in his rebuttal of both Janet McCalman and Hugh Mackay's articles against online delivery in *The Age* recently, which is that online learning is seen to be useful only as a form of distance education.[16] That is, it is seen ultimately as an inferior form of delivery but one which offers opportunities to distance education students in the absence of practical options for face-to-face delivery.

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13 Paul Ramler (Committee Chairperson), *Ministerial Review of the Provision of Technical and Further Education in the Melbourne Metropolitan Area* (Melbourne: Ministerial Review Committee, Office of Training and Further Education, 1997)

14 See, *Skills x Knowledge = Growth: Improving the Supply of ICT Skills and Knowledge in Victoria* (Melbourne: Multimedia Victoria, State Government Victoria, 2000)

15 See, http://www.budget.vic.gov.au/domino/web_notes/budgets/budget01.nsf

16 Mark Landy, "Cyber Space: Not a Waste of Space," *Frontiers,* April (2001)

I wonder if VET has chosen the phrase Information Economy rather than choosing Information Society because we think we are made more politically relevant by aligning ourselves with economic rather than social issues...
I am convinced that an excessive focus on the economic and technological dimensions of globalisation limits our view about what learners need to know and do with [ICT] and fails to serve and develop communities.
Kaye Schofield[17]

Unfortunately, discussions about online learning are often dominated by economic considerations. Of course, fiscal responsibility and accountability are crucial in any system (especially a publicly funded one) but the dominance of financial motivations and concerns, arguably to the detriment of more important social and learning issues, is nonetheless disappointing. Indeed, this paper arose in part out of some research for another discussion paper on the Key Performance Measures for TAFE institutes used by the former State Government.[18] While researching the paper, it was discovered that an increase in online delivery was directly connected to a reduction in floor space which, it was argued, would result in an 'improved' floor-space:student ratio. This is quite obviously an entirely inadequate motive for a move toward online delivery and is an example of why the trend is sometimes met with extreme cynicism and concern.

Additional factors that perhaps contribute to some educationalists' cynicism toward online learning are that corporate language seems to dominate discussions about it and further, that it has been embraced by the corporate and private education sectors. A telling example of this is the Federal Government project funded by the Department of Education, Training and Youth Affairs (DETYA) examining the emergence of corporate and virtual universities in the twenty-first century and the implications of this for publicly funded higher education. Significantly, this project is called the *Business of Borderless Education,* highlighting the prominence of business (that is, usually economic) considerations in discussions about online learning.[19]

Some commentators fear that "[m]ore and more universities are cashing in on the worldwide education boom by venturing online, usually by joining forces with big corporations or by setting up private off shoots"[20] and that the consequent problems associated with corporate partnerships (regarding intellectual freedom and access and equity for example) will ensue. There is, for example, considerable concern about the high involvement of the edutainment industries in online learning, due to the perceived likelihood that they will 'cherry pick' affluent consumers and neglect social investment.[21]

In short, there is concern that knowledge and education will be entirely commercialised. Statements to the effect that "[k]nowledge creation is fruitless

17 Kaye Schofield, "Keynote Address to NET*Working '99 Conference: Re-Imposing our Will on the Information Economy," *ANTA NET*Working '99 Conference: VET Online: From Left Field to Centre Stage (physical)* (Carlton Crest Hotel, Melbourne: 1999), http://www.nw99.net.au/papers/index.html p.6

18 See, Janelle Thomas, *Key Performance Measures in Vocational Education and Training: A Discussion Paper,* VTA Monograph Series 1:2 (2000) p.1-24

19 See, http://www.bbe.webcentral.com.au

20 Kate Marshall, "Online Students Soon to Show their Net Worth," *The Australian Financial Review,* 7 February 2001, sec. Special Report: Online Training and Careers

21 Peter Cox, "Online Learning: Old Wine, New Bottles or a New Way to Learn in a Post-Modern Society," *ANTA NET*Working '99 Conference: VET Online: From Left Field to Centre Stage (online)* (1999) http://www.nw99.net.au/papers/cox.html p.8

without opportunities for application and commercialisation"[22] (which is taken from a Victorian 2000 State Government ICT policy statement) perpetuate this anxiety. The point is well taken that governments must invest in the application of research and knowledge, but the suggestion that knowledge creation is fruitless without commercial benefits indicates a lack of true recognition of the social benefits of a learning society.

About the only thing that is clear in relation to the cost of online learning is that there is widespread disagreement about whether or not it is actually cheaper. Of course, the media is littered with stories about failed dot.coms and e-learning ventures gone wrong – but one example being the demise of Worldschool's loss-making internet education business just eight months after first listing on the Australian Stock Exchange.[23] However, equally, many experts suggest that it will save resources in the long-term.

There is almost consensus among educationalists that, if done properly, online learning is not cheaper than face-to-face learning.[24] It is sometimes argued that once the initial set-up costs (which, it is agreed, will be high) are overcome, it will save money. As Chang suggests, a frequent goal of institutions has been to use new technologies to solve access and resource problems.[25]

> Online education companies are generating strong growth in the tertiary and corporate sectors. Monash University's Snyder says the growth is fuelled by economic constraints. Many universities are cash-strapped and looking for alternative teaching options.[26]

However, many disagree that it will solve resource problems, citing instead the on-going costs of maintaining the technological infrastructure. They also dispute the suggestion that money will be reasonably saved by reducing teacher numbers, arguing instead that "online teaching (done well) is more labour intensive than face-to-face."[27]

A further cause for some educationalists' scepticism in relation to online learning is the possibility that investing in online learning comes at a cost to other areas. In his generally positive analysis of online learning for the Organisation for Economic Co-operation and Development (OECD), McNair suggests that there is some concern that the "technology may be seductive, diverting resources from more effective but less glamorous issues of developing human skills."[28] More vitriolic commentators accuse virtual learning technologies of "sucking money" from "traditional places like libraries…"[29] The point is that the money has to come from somewhere and that, realistically, it is likely to come from an existing education budget, requiring sacrifices elsewhere.

22 *Skills x Knowledge = Growth: Improving the Supply of ICT Skills and Knowledge in Victoria* (Melbourne: Multimedia Victoria, State Government Victoria, 2000)

23 Jennifer Laing, "New Age Man," *Frontiers,* December/ January (2000/ 2001), 6-7

24 See, "Online Students Soon to Show their Net Worth," *The Australian Financial Review,* 7 February 2001, sec. Special Report: Online Training and Careers p.13

25 Vivian Chang, "Policy Development for Distance Education," *ERIC Digest,* ED423922 (1998) http://www.ed.gov/databases/ERIC_Digests/ed423922.html

26 Patrice Gibbons, "The Virtual Professor," *Business Review Weekly,* 20 October 2000 pp.102/103

27 Noriko Hara and Rob Kling, *Students' Distress with a Web-based Distance Education Course: An Ethnographic Study of Participants' Experiences* (Bloomington, IN: Center for Social Informatics, SLIS, Indiana University, 2000) http://www.slis.indiana.edu.csi

28 McNair in *Learning to Bridge the Digital Divide: Education and Skills: Schooling for Tomorrow* (Paris, France: Organisation for Economic Co-operation and Development, 2000) p.12

29 Erica Cervini, "Virtual Universities Are a Flop, Warns Web Pioneer," *Education Age,* 28 February 2001

Perhaps more important, is the fear that the move toward online learning represents a de facto shift of the cost of public education to students. Aside from the obvious costs of the technological infrastructure and internet access, online learning potentially shifts less obvious costs to students. These include electricity and paper for example, as well as social and support costs such as child care and counselling.

In summary, one of the central concerns about online delivery is a fear that it is less about quality public education and more about expanding training 'markets', cutting administrative costs and increasing profits. Further, it is suggested that a move toward online delivery of education by governments may be motivated by a desire to provide public education cheaper as opposed to wider and better as the rhetoric would have us believe.[30]

30 See Kate Marshall, "Online Students Soon to Show their Net Worth," *The Australian Financial Review,* 7 February 2001

Whether internet-based distance education is as good as traditional education is debatable. That students – particularly working adults – are flocking to such programs is undeniable.
Nicholas Confessore[31]

One of the issues that isn't discussed in great detail in the literature about online learning is where the demand for online delivery is coming from and why. As the previous section attests to, some of the demand from government, system and provider points of view is economically motivated – whether on the basis of cheaper delivery or new markets. Much of the rhetoric from governments and providers suggests that education institutions that do not offer online delivery will not be able to compete in the market-place. From one point of view what this essentially means is that if one institution does something then all others must follow suit purely in order to 'keep up'. Speaking more charitably, we might allow that education institutions must remain contemporary and relevant to attract students.

Both advocates and detractors of online learning usually claim to represent what is best for the student. Advocates point to the number of students enrolling in online courses and conclude that it must be good, focussing in particular on the flexibility of online learning. Moira Scollay, head of ANTA, reminds us that this is "essentially a type of learning that people [can] use when and where it suit[s] them."[32]

Detractors suggest that the trend toward online delivery is more provider and system focussed, and that students are encouraged (and in some instances effectively forced) to study online even if it would not normally be their first choice. An example of this could be the Federal Labour Party's proposed encouragement of online learning in the form of reduced HECS fees for part or whole degrees. Noriko Hara and Rob Kling, in their ethnographic study of students' experiences of online learning, suggest that "administrators who want to encourage their faculties to teach online courses coax instructors into viewing online courses as easy to take rather than as a set of complex instructional engagements..."[33]

Moreover, some detractors point to recent reports suggesting that many people do not want to study online even if they have the resources to do so. Dr Clifford Stoll, pioneer of the internet, said recently that "the main reason virtual universities have folded is because students are not interested in studying online."[34] Critics of this position suggest that much of the resistance to online learning and the internet more generally is a generational thing that will change, and point to the increasing numbers of people using the internet. As McNair points out, the internet was until very recently an eccentricity whereas now it is a common part of many people's daily lives.[35]

31 Nicholas Confessore, "Modem Learning," *The Australian*, 31 January 2001

32 Geoff Maslen, "Toolboxes to Help Build e-Learning in Classrooms," *Campus Review*, 11-17 April 2001

33 Hara and Kling, Students' *Distress with a Web-based Distance Education Course: An Ethnographic Study of Participants' Experiences*

34 Cervini, "Virtual Universities Are a Flop, Warns Web Pioneer".

35 McNair in, *Learning to Bridge the Digital Divide: Education and Skills: Schooling for Tomorrow*

While this is undoubtedly true, education providers are legitimately concerned that fear of and inability to use technology are not the only reasons for some people's resistance to internet based services. The example of telephone banking is a poignant one. Most Australians know how to use and have access to a telephone. However, despite the apparent convenience of telephone banking, there are still large sections of the community who would prefer face-to-face banking for a range of reasons. John Hannelly, Human Resources Manager of Compaq Computer Australia, admitted recently that "[e]ven the most technologically savvy employees are having to be convinced to embrace the emerging world of e-learning…"[36] Indeed, a recent Australian Bureau of Statistics (ABS) survey found that the second greatest reason for Australian homes to not have a computer or a modem is that computers are a bad influence.[37]

To people who use computer technology every day (that is, most educators and policy makers) the resistance to it may seem absurd but it must nonetheless be taken seriously. This point is even more relevant to the VET sector given that TAFE students are the least likely of all students to be using the internet.[38] There could, of course, be a range of reasons for this, but we must be careful not to take too paternalistic an attitude and assume we (as education providers, politicians and policy makers) know what students want. If, as we keep hearing, students are the primary 'clients' of the VET sector, we must listen to and take seriously their concerns about online learning. As the renowned education expert and commentator Simon Marginson recently pointed out on the ABC's *7.30 Report*, the research evidence suggests that most students prefer face-to-face human interaction.[39]

Professor Marginson also touched on another relevant point in this interview: that the students who are most likely to demand online learning are those who can't access face-to-face learning, that is, remote students and full-time workers. Nicholas Confessore also suggests in a recent article that the most likely market for distance learning generally is "continuing professional education for working adults."[40] It is important to keep in mind that while this is significant, it does not represent the entire VET student cohort.

36 "Online Training Needs a Face: Compaq," *HR Report,* 247 (2001) p.108

37 "Communications and Information Technology: Household Adoption of Digital Technologies," *Year Book Australia, 1997* (Canberra: Australian Bureau of Statistics, 1997) p.4

38 Gerry White, *Online Education Report* (Adelaide: education.au limited, 1999), http://www.edna.edu.au/edna/publish/system/edures/edreport.html

39 "Academic Challenges Role of Computers in Children's Lives," *ABC 7.30 Report,* http://www.abc.net.au/7.30/s290741.htm

40 Confessore, "Modem Learning," *The Australian,* 31 January 2001, p.43

Innovation is another hot topic, frequently equated in political and educational discourses with technological change. While I don't have space here to address all the issues involved in defining innovation, it is fair to say that the way the term circulates in contemporary discourse is quite limited. In general terms, in Australia, innovation is almost exclusively connected with university research and, more specifically, research into ICT and science. The crucial role the VET sector plays in an innovative education system and an innovative Australia is rarely recognised.

Moreover, most of the discourses about innovation fail to recognise that innovation can be both big and small and does not have to be technological. It is astounding, in a world (and a nation) characterised by profound differences in wealth and opportunity that, to give but two examples, advances in literacy and numeracy levels or programs that aim to end discrimination and violence are not the cruxes of our innovation show-case. If innovation is, at its most basic level, about positive change that makes things easier and better for people, social innovation should be as highly valued as other forms.

In unpacking the assumed and problematic connection between innovation and technology, we might pause again at the realisation that anything technological is often taken as innovative and *therefore good*. History is full of examples of technological advancements that have led to both human prosperity and suffering. A more relevant understanding of whether something is positively innovative would consider how the 'new way of doing' benefits society and, crucially, if it benefits society evenly.

Many commentators about online learning (supporters included) concur that "too many e-learning models [are] simply electronic models of paper-based training…"[41] and agree that this is not very innovative or useful to anyone. Most reasonable commentators also agree that online learning and new learning technologies more generally offer some positive and innovative educational opportunities. What is usually debated is the extent of those opportunities.

It is also worth mentioning the way that online learning is connected with globalisation and the new knowledge economy which, it is argued, are with us whether we like it or not. This sense of inevitability leads to the suggestion that the rise of online learning is also inevitable. This argument is problematic on a number of levels, primarily because it fails to recognise human agency. Professor Michael Osborne, Vice-Chancellor of La Trobe University, cautions us to "not in our enthusiasm for the exciting new technologies now appearing forget that we, not they, determine our mission and goals; and that they, not we, are simply the vehicles."[42] Values must drive system choices – technology is benign without them.

41 "Online Training Needs a Face: Compaq," *HR Report,* 247 (2001)
42 Professor Michael Osborne, Vice-Chancellor of La Trobe University cited in *Education Age,* 21 March 2001 p.13

It is important to stress here that questioning the rise of online learning (and perhaps even actively resisting it depending on the circumstances) is not the same thing as questioning the need for digital literacy. As section six will address in greater detail, there is no question that "[j]ust as the industrial revolution made some level of literacy and numeracy a requirement for all, so the electronic revolution within contemporary society makes digital literacy essential."[43] Let us not forget however, locally and abroad, that general literacy and numeracy continues to be a major problem even for 'advanced' countries such as Australia and that digital literacy can certainly be achieved by methods other than online learning. When we discuss online learning we are not generally talking about learning ICT skills over the internet, we are talking about learning a range of things – one of which is ICT and most of which are already delivered face-to-face.

43 McNair in, *Learning to Bridge the Digital Divide: Education and Skills: Schooling for Tomorrow,* p.10

This section focuses on issues relating to a quality learning experience which, as the VTA has consistently argued, should motivate system changes and improvements. The issues relating to what constitutes a quality learning experience and how online learning potentially enhances or compromises such an experience are complex and are divided here into four sub-themes: teaching, tangible learning outcomes/results, online opportunities and pitfalls.

a) Teaching

As with face-to-face delivery, and as we have argued elsewhere, the most important part of a quality learning experience is the quality of teaching and instruction. Shifts toward online delivery pose important pedagogical challenges for teachers and institutions. McNair makes the point that online learning is simultaneously productive and reflective of a shift from teacher-centred learning or "the sage on stage", to learner-centred learning where the teacher is the "guide on the side".[44] This is often cited as one of the greatest opportunities offered by online delivery – the increased capacity for individualised and learner-controlled learning.[45]

If the benefits of online learning are to be fully harnessed, extensive research and professional development are required for teachers.[46] The VET sector would do well to learn the lessons from Australian schools, most of which "now have enough computers for their students, but a lack of online content and advanced teacher training means many are still struggling to incorporate internet applications … with traditional teaching methods."[47]

b) Tangible Learning Outcomes/ Results

As with other aspects of online learning debates, there is predictable disagreement about whether or not the mode of delivery affects student results and to what extent. This dispute is represented literally and symbolically by two web-sites, one of which is dedicated to all the literature that argues there is no difference between learning outcomes for face-to-face students and online students called the "No Significant Difference Phenomenon" and the other containing literature arguing the opposite called, unsurprisingly, the "Significant Difference Phenomenon."[48]

Locally, Josie Misko conducted research into this issue and concluded that "it is difficult to determine a direct relationship between modes of delivery and student outcomes."[49] This, of course, doesn't mean that there isn't a relationship between the two things but it does point to the difficulty and danger in making assumptions about direct causal links between the effect of one aspect of learning and results.

44 Ibid., p.15

45 See:Judith O. Wagner, "The World Wide Web and Vocational Education," *ERIC Digest* 186, ED411416 (1997). http://www.ed.gov/databases/ERIC_Digests/ed411416.html; and Berge and Collins, "Introduction: From Marks in the Sand to Computer Conferencing Via Fiber Optics".

46 There is some research being done into this issue by Guy Kemshal-Bell on behalf of TAFE New South Wales. It is currently in draft form, but should be available publicly shortly. See, Guy Kemshal-Bell. *The Online Teacher - A Research Snapshot* (draft). (New South Wales: Project Steering Committee of the VET Teachers and Online Learning Project, ITAM Educational Services Division, TAFE New South Wales, 2001)

47 Patrice Gibbons, "Schools Get Deeper into the Web," *Business Review Weekly,* March 16 2001

48 See, *The No Significant Difference Phenomenon.* http://teleeducation.nb.ca/nosignificantdifference/index.cfm 22 May 2001; and *The Significant Difference Phenomenon.* http://teleeducation.nb.ca/significantdifference.

49 Josie Misko, "Different Modes of Delivery - Student Outcomes and Students' Perspectives," *Second National Conference of the Australian Vocational Education and Training Research Association (AVETRA): Quality and Diversity in VET Research* (Royal Melbourne Institute of Technology (RMIT), Melbourne, Victoria: Australian Vocational Education and Training Research Association, 1999) http://www.avetra.org.au/abstracts-papers/31_misko.pdf

Moreover, while online learning is not the same thing as distance learning, they have some things in common. As with online learning, distance education is becoming increasingly popular with Australian students, with a two hundred per cent increase in enrolments in the past decade. However, the research does clearly show that "external students do not do as well as their on-campus peers."[50] Recent research by the Australian Vice-Chancellors Committee (AVCC) confirms this, concluding that "internal students significantly out-perform external students…"[51]

One thing that does seem to be almost uniformly agreed upon is that completion rates (as opposed to course results) are affected by mode of delivery. Again, the reasons for non-completion are complex and we must be careful not to make simple generalisations about the issue, but it is fair to say at this point in the history of online learning that the attrition rate in online learning courses is higher than in face-to-face ones. Elliot Masie, President of the MASIE Centre and a strong advocate of online learning, recognised this problem during TechLearn 2000 and attributed it to the infancy of e-learning.[52]

There are some educationalists who are less optimistic about the capacity for online learning to eventually equal the face-to-face learning experience. The previously cited Dr Stoll believes that 'techies' like himself have a responsibility to dispel myths about technology and, in a somewhat inflammatory manner, he argues that online learning is "the best way to get a second-rate education."[53] More interestingly, Hubert Dreyfuss, a philosopher from the University of California, suggests in *Ethics and Information Technology* that web-based learning is inherently detached and remote and that in order to learn properly, students need to interact with actual other people "with whom they can make a serious commitment to the realisation of one perspective or another."[54] That is, in this and similar analyses, the nonverbal aspects of human interaction, communication and learning are seen to be vital for a quality learning experience.[55]

Furthermore, critics of online learning tend to dwell on and perhaps over-estimate information about online retention. Numerous studies have shown that textual information is retained significantly better on paper than it is online.[56] However, the relevance of this is often exaggerated, and it is quite rightly pointed out by advocates and detractors that if online learning simply equates to providing information and data online (as opposed to creating knowledge and enabling learning) then it is a waste of time.

50 Geoff Maslen, "Distance Ed Failures Higher than On-Campus Peers," *Campus Review,* 17-23 January 2001
51 Jane Richardson, "Handy But No Easy Option," *The Australian,* 21 March 2001
52 Cited in, Laing, "New Age Man," 6-7
53 Cervini, "Virtual Universities Are a Flop, Warns Web Pioneer".
54 Cited in, Steve Holden. "www.problem.edu.au: Is It Possible to Click and Learn?" *Educare News* April (2001): 56-7
55 See, Sandra Kerka, "Distance Learning, the Internet, and the World Wide Web," *ERIC Digest.*ED395214 (1996). http://www.ed.gov/databases/ERIC_Digests/ed395214.html
56 M. F. Wyle, "A Comparison of Textual Information Retention from CRT Terminals and Paper," *ACM SIG-CHI Bulletin.* (1987)

c) Online Opportunities

As mentioned previously, advocates of online learning generally agree that its greatest advantage is that it is learner-centred and offers real possibilities for individualised and self-paced learning. Some of the other commonly cited advantages include:[57]

- access to more and better information
- enhancing the immediacy of in-service training
- the potential to motivate students who are alienated by traditional learning environments
- the opportunity to make learning more interesting
- possibilities for knowledge-sharing
- chance to interact with experts
- opportunities for global collegiality
- opportunities to provide practical experience – especially simulation based learning[58]

We shall return to some of these features in more detail in the following sections. While each of these points is debated by some educationalists, there does seem to be general agreement that online learning can, if done well, offer opportunities for interesting learning. Many critics of the general trend toward online learning do concede that it can offer students some diversity. Many also concede that online learning offers great potential for distance education students who are otherwise completely isolated – but the obvious sub-text here is that it is a practical compromise and something that should be avoided if possible.

d) Some pit-falls

Some of the potential negatives associated with online delivery have already been outlined. Another point to consider is that while technology opens up many possibilities, it also brings with it problems of its own. A notable qualitative case study of a web-based distance education course at a large university in the United States discerns something that is

> glossed over in much of the distance education literature written for administrators, instructors and prospective students: students' periodic distressing experiences (such as frustration, anxiety and confusion) … due to communication breakdowns and technical difficulties.[59]

The authors of this study point to the fact that many online learning students work at home at night and on the weekend when it is hardest to access help to resolve technical problems and, arguably more importantly, other problems associated with the course content that could ordinarily be solved in class.[60] They also found that the incidence of miscommunication of tasks and even mis-read jokes led to a high level of frustration and, in the case of the latter, hurt feelings. The authors aren't

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57 See, Sandra Kerka, "Communications Technologies in Adult, Career, and Vocational Education," *ERIC Digest* 81, ED305494 (1989) http://www.ed.gov/databases/ERIC_Digests/ed305494.html; and Judith O. Wagner, "Using the Internet in Vocational Education," *ERIC Digest* 160, ED385777 (1995) http://www.ed.gov/databases/ERIC_Digests/ed385777.html

58 Professor Shirley Alexander, Director of the Institute of Interactive Multimedia at the University of Technology (UTS) is a big believer in this, see, Gibbons, "The Virtual Professor".

59 Hara and Kling, *Students' Distress with a Web-based Distance Education Course: An Ethnographic Study of Participants' Experiences.*

60 Ibid.

suggesting that these problems do not occur in the class-room but rather, that "[m]uch of human communication is inherently ambiguous. But people can often adequately resolve key ambiguities when they are face-to-face."[61]

Kate Marshall suggests that the most common complaints in relation to online learning are the high costs that are not expected, low completion rates, lack of support, poor tutoring, inadequate web-sites and unrealistic expectations of the technology's capacity. She disputes the suggestion that the potential negatives of online learning are off-set by its capacity to expand education training, arguing that poor quality learning is not better than no learning at all because it can turn people off education all together.[62]

The frustration outlined by Marshall (and the previously cited study) must be taken seriously and not lost in the luddite v. techno duel. This is even more important given that, as a major OECD study into online learning found, "when the technology does not work well, it can be especially demotivating for those with least."[63] Further on, it argues for high levels of technical support in particular and/or a warning against over-reliance on ICT for addressing learning disadvantage.

61 Ibid.

62 Kate Marshall, "Flaws in the Program," *The Australian Financial Review,* 7 February 2001

63 *Learning to Bridge the Digital Divide: Education and Skills: Schooling for Tomorrow* (Paris, France: Organisation for Economic Co-operation and Development, 2000)

One of the great ironies of the technological revolution is that while access to ICT is increasing the social and economic divisions between people (the phenomenon known as the digital divide) it also offers the potential means to reduce that gap. This has long been recognised and was identified, for example, in the 1980 Myer inquiry into technological change in Australia as a primary concern of the population.[64] It is especially important to TAFE given the sector's long-standing commitment to the educationally disadvantaged.

Online learning throws up a varied range of access and equity questions; given that governments promote online learning as a means to increase access to education, it is vital to analyse these debates. At one end of the spectrum, some suggest that online learning opens up education to those who have been alienated from, and/or unable to access, mainstream education (the advantages for students with disabilities are often mentioned in relation to the latter).[65] At the opposing end of the spectrum, some argue that online learning will create the most opportunities for those who already have the most – that is, educated working people.[66]

a) Global Perspective

We are often implored to 'think global and act local' so it is prudent to gain a bit of global perspective. Some of the news is startling and worrying:

> …80% of the world's population have never used a telephone, let alone sent an email message. The industrialized countries, with only 15% of the world's population, contain 88% of all internet users.[67]

Much of the world (and numerous Australians) have many more urgent obstacles to overcome in relation to health and education than the acquisition of ICT skills and the introduction of online learning. It is important to keep this in mind in the midst of the excitement about the capacity for technology to be a social and economic leveller.

Another relevant global concern is that the internet purports to offer a vast array of information from different sources but, in fact, can act as an agent of conformity and cultural imperialism. While a seemingly infinite number of web-sites on an infinite number of topic exists, it is also the case that over eighty per cent of websites are in English despite the fact that less than one in ten people in the world speak the language.[68] English is without a doubt the dominant language of the internet and English-speaking cultures dominate the content, representing a form of cultural imperialism.[69]

64 Eric Myer, *Technological Change in Australia: Report of the Committee of Inquiry into Technological Change in Australia.* V's 1-4 (Canberra: Commonwealth of Australia, 1980) p.4

65 See, William West who suggests that, "[h]elp sites for students with learning disabilities are booming on the web, with both local and international services opening the way for the learning disabled to get assistance from anywhere at any time…" in "Dig in to the Virtual Goldmine," *Campus Review,* 15 - 21 November 2000

66 See, Peter Cox, "Online Learning: Old Wine, New Bottles or a New Way to Learn in a Post-Modern Society".

67 Dr. Robert Sadler, "The Renaissance of Vocational Education and Training: Miscellaneous Hints for Undernourished Elephants Yearning to Dance," *IVETA Conference 2000: Vocational Education and Training for Life Long Learning in the Information Era* (Hong Kong: International Vocational Education and Training Association, 2000)

68 Russell Rollason, "Economic Globalisation: Where People and Profits Don't Mix," *Impact,* November 2000

69 See, McNair in *Learning to Bridge the Digital Divide: Education and Skills: Schooling for Tomorrow*

b) Infrastructure Access

At a local and a global level, access to computer equipment and the internet are important components of the digital divide. A significant report on the Learning Networks Trial by the Victorian State Government found, among other things, that good technological infrastructure is vital to quality online learning and that if this is inadequate, it can "prevent a student even reaching the point of learning..."[70]

The most recent ABS data on *Household Use of Information Technology*[71] shows a couple of important things. Firstly, despite the fact that home internet access is increasing steadily, two thirds of Australian households do not have home internet access. The reasons for this are complex but previous studies have suggested that cost is the main prohibitive factor. There is a clear connection between household income and home internet use; people with higher incomes are more likely to have internet access.[72]

While it is predicted that this will become less relevant as the technology becomes more readily available and thus cheaper, the study also found that disinterest and active resistance (on the basis of computers being a bad influence) rank highly as reasons for a lack of internet access at home.[73] The ABS data also shows that straight-line projections of growth in the uptake of ICT are misleading, and suggest instead that growth is likely to plateau at a certain point.[74]

A great deal of work has been done by governments and other agencies to increase ICT access for disadvantaged groups including, in Victoria, State Government initiatives such as the Skills.net program and Libraries Online.[75] An equity report by DETYA found that consistent and reliable access to computer facilities on campus is needed.[76]

Community resourcing in the form of ICT access at public libraries and other public locations is often cited as the solution to infrastructure access problems. While community resourcing to enhance access to ICT for everyone is to be applauded, it must not be confused as a reason to offer online learning. One of the principal reasons given for a system move toward online delivery is to increase flexibility for students. Visual images of students accessing their learning when it is supposedly convenient to them at night and so-on are frequently cited. However, these should be tempered with a consideration of the fact that many of these students must access the technology they need for online learning outside of their home and presumably at scheduled times, which could reasonably lead one to question whether it is more 'flexible' than timetabled classes.

70 Ian Phillips, *Learning Networks Trial: Evaluation* (Melbourne: I & J Management Services, Office of Post Compulsory Education, Training and Employment, 2000) p.7

71 *Household Use of Information Technology, Australia 2001* (Canberra: Australian Bureau of Statistics, 2001) http://www.abs.gov.au.ausstats/abs@.nsf/Lookup/NT00007F

72 *Household Use of Information Technology, Australia 1999* (Canberra: Australian Bureau of Statistics, 1999), p.2

73 "Communications and Information Technology: Household Adoption of Digital Technologies," *Year Book Australia, 1997* (Canberra: Australian Bureau of Statistics, 1997)

74 Ibid. p.3

75 See, The Hon John Brumby, *Connecting Victoria: The Victorian Government's Strategy for Information and Communications Technologies* (Melbourne: Department of State and Regional Development, 1999); and Skills x Knowledge = Growth: Improving the Supply of ICT Skills and Knowledge in Victoria (Melbourne: Multimedia Victoria, State Government Victoria, 2000)

76 Jo Barraket, et al. *Equity and the Use of Communications and Information Technology in Higher Education.* (Canberra: University of Technology, Sydney: Department of Education, Training and Youth Affairs, 2000) http://www.detya.gov.au/highered/eippubs/eip00_7/execsum.htm

c) Non-infrastructure Access Issues

Chris Dodds reminds us that while the focus of access in relation to online learning is usually on the supply side or technological end (relating to cables and bandwidth for example), there are some significant 'demand' issues that bear thinking about. In a recent article, he draws attention to important reports by the Australian Youth Foundation (AYF) and the National Centre for Social and Economic Modelling (NATSEM), both of which "found that the key determinants to usage were family status, household income and education levels."[77] The DETYA equity report also found that there are "a range of factors – physical, experiential, economic, and institutional – which inhibit computer access for students from equity groups."[78] In particular, students with family commitments, women in general and older students were found to face significant access barriers.[79]

General literacy and numeracy skills, as well as digital literacy, are key concerns in access and equity discussions about online learning. The technology is really of no use to anyone who does not have the range of skills required to utilise it effectively. At present, it would seem that the people most likely to possess those skills are arguably those in least need of further education opportunities – that is, the working educated. To a certain extent, this will change over time. Indeed, an ABS report shows that today 59% of primary school children and 75% of secondary students in Australia can use the internet. However, the same report shows that there are significant differences relating to ethnicity, gender and school size.[80]

A related and often neglected point is the connection between education levels and the capacity for self-directed learning. The flexibility and individualised learning potentially offered by online learning can cut both ways and for students who require the motivation of physical contact with peers and teachers, the learning demands could act as barriers. Kerka suggests that reliance on learner initiative, for example, can be a drawback for those people who require more structure.[81] Hara and Kling's previously cited study also found for example that some students were overwhelmed by the volume of information generated in online discussions and felt ill-equipped to convert it into meaningful knowledge.[82]

However, the Learning Networks Trials mentioned previously showed that "motivated able students are able to take greater responsibility for setting and managing their learning program where they are given the opportunity to do so…"[83] Other studies have found that the anonymity of online learning can give voice to those students who are alienated by and less likely to speak in face-to-face settings.[84] On the one hand, alternative delivery modes may offer new options for disadvantaged learners who have been alienated by traditional education methods. On the other hand, it may be that self-directed learning in the form of online learning requires many pre-existing skills that disadvantaged learners are less likely to have.

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77 Chris Dodds, "Universal Access Needed to Bridge the Digital Divide," p.6

78 Jo Barraket, et al. *Equity and the Use of Communications and Information Technology in Higher Education.* (Canberra: University of Technology, Sydney: Department of Education, Training and Youth Affairs, 2000) http://www.detya.gov.au/highered/eippubs/eip00_7/execsum.htm, p.3

79 Ibid. p.4

80 "Communications and Information Technology: Real Time: Computers, Change and Schooling," *Year Book Australia, 2000* (Canberra: Australian Bureau of Statistics, 2000) p.4

81 Kerka, "Distance Learning, the Internet, and the World Wide Web," p.65

82 Hara and Kling, *Students' Distress with a Web-based Distance Education Course: An Ethnographic Study of Participants' Experiences.* p.55

83 Phillips, *Learning Networks Trial: Evaluation.* p.8

84 See, Kerka, "Distance Learning, the Internet, and the World Wide Web"; and *Social Impact of Online Learning: For Discussion* (Melbourne: Learning Technologies Branch, Office of Post Compulsory Education, Training and Employment, 1999)

[W]hile VET as a whole is certainly a vital service industry, publicly owned TAFE institutions are more than that. They are not simply economic or labour market institutions, no matter how much governments talk up the training market dynamic. Despite a decade of reform, they remain an essential and integral part of our education system which is, in turn, one of the fundamental institutions of civil society along with the family and the church and voluntary associations.
Kaye Schofield[85]

Finally, an important part of the debate about online learning is the social impact it may have. There has been very little research into this area and, as Chang suggests, more is required - especially into the impact of online learning on psychological and physical education environments.[86] However, two things seem certain. One is that the trend toward online delivery both reflects and compounds the profound impact ICT is having on societies. The second is that TAFE is a major Australian public education body and as such, is a fundamental societal institution. Decisions made by and for TAFE institutes have a major symbolic and literal impact on Australian society and this must be recognised more often in discussions about TAFE policy.

Some commentators have realistic fears about the social impact of ICT generally and online learning more specifically. Part of this fear is based on the perception that as citizens we are more isolated than ever before in recent history and that online learning potentially increases this isolation. For some, the vision of thousands of students sitting at their computers learning represents flexibility and convenience. For others it represents the undermining of a crucial social and political institution (that is, education) as well as a problematic prioritisation of convenience over community.

One of the primary fears about the social impact of online learning is that it dehumanises the learning process and, in particular, undermines the important social relationship between teachers and students. Laurence Thomas suggested in *The Australian* recently that despite the presence of the teacher behind the computer, "no computer can replace the affirmation that a student receives from their professor – and viceversa…"[87] The Myer inquiry cited previously found in 1980 that the "essence of the concern [about technological change] is that the emerging technologies enable machines to do jobs that are now done by people."[88] The press is swamped with articles about computers replacing teachers and taking the 'soul' out of learning.[89]

While many of these articles are unduly alarming, they do make some points worth attention. Again, Dr Stoll cautions that online learning will further stratify society, with the affluent getting the 'live' teachers.[90] He suggests, along with many commentators, that people want face-to-face contact and human interaction. Rory Hume concurs and in *Lessons of a Virtual Timetable* bemoans the fact that many of his students often refuse to subscribe to the internet to get the latest expert information and, instead, prefer to pay a lot of money to attend a face-to-face lecture.[91]

85 Schofield, "Keynote Address to NET*Working '99 Conference: Re-Imposing our Will on the Information Economy," p.5

86 Chang, "Policy Development for Distance Education".

87 Laurence Thomas, "Humanity is the Essence," *The Australian,* 31 January 2001

88 Eric Myer, *Technological Change in Australia: Report of the Committee of Inquiry into Technological Change in Australia.* V's 1-4, p.1

89 See, for example, Anita Jawary, "Cyber Schools Struggle to Find Soul," *The Age,* 16 January 2001

90 Cervini, "Virtual Universities Are a Flop, Warns Web Pioneer".

91 Cited in Marshall, "Flaws in the Program".

One of the few available pieces of local research into the social impact of online learning effectively counters these suggestions. A Victorian STB research paper on the social impact and educational effectiveness of online training found that "many students are primarily interested in gaining knowledge and skills and do not mind if social contact is not high as they have extensive social networks."[92] The same report also reminds us that "in order to have a balanced discussion about the social impact of online learning, it is important to have a realistic perspective of classroom based learning; both its negative and positive aspects."[93]

Advocates of online learning point to the growing uptake of online learning to counter suggestions that people prefer face-to-face delivery. There is some validity to this but it is still wise for policy makers and institutions to understand and further investigate some of the possible reasons behind this trend. One of the potentially problematic motivations for a move toward online delivery is the suggestion that it will save a large amount of time. In *The Australian Financial Review* recently, Merri Mack wrote that "[t]he pace of change and competition generated by globalisation is driving the need to acquire new skills at an ever-increasing pace. There may be no time or money for people to learn these skills in a classroom…"[94] This statement echoes the inevitability position outlined previously – it completely undermines the agency of individuals and institutions to make informed and productive choices about their education and their time.

Moreover, as we have seen, the suggestion that online learning will in fact save time and money is highly disputable. Michael Green is quite rightly critical of online education promoters for talking "as if online learning requires few sacrifices and can be filled into an already busy life full of family and work commitments."[95] Rather, we need to ask important questions about what impact shifting the site of education increasingly into the home will have on personal and family life. One could also question the impact it could potentially have on physical and emotional health – in relation to occupational health and safety issues as well levels of exercise and interaction with colleagues. In short, as Myer suggested two decades ago, "[t]echnological change by changing the way in which things can be done, can also change the goals of society."[96] This must be considered in any discussions about online learning and VET.

92 *Social Impact of Online Learning: For Discussion* (Melbourne: Learning Technologies Branch, Office of Post Compulsory Education, Training and Employment, 1999)

93 Ibid., p.2

94 Merri Mack, "School's in for the Web's Next Big Thing," *The Australian Financial Review,* 7 February 2001

95 Michael Green, "Tangled Web of Online Learning," *Campus Review,* 7-13 March 2001

96 Eric Myer, *Technological Change in Australia: Report of the Committee of Inquiry into Technological Change in Australia.* V's 1-4, pp.9/10

CONCLUSION

This paper has attempted to canvass some of the philosophical debates about online learning and to counter the extreme polarisation of the literature. A large proportion of this literature is naïvely optimistic about the potential of online learning – particularly in relation to increasing opportunities for disadvantaged learners. Moreover, much of it silences queries and concerns about online learning by implying that critics are simply afraid of technology. Similarly, many critics of online learning match this over-exuberance with outright negativity and equally naïve stubbornness, and in some cases play on people's fear of change. This paper has attempted to give a more reasoned voice to these anxieties while keeping an open mind about the possible benefits of online learning.

The topic of online learning is enormous, and many issues have been addressed very briefly here or have not been touched on at all. An important omission is a discussion about what types of courses can be most successfully delivered online and what types of students can learn most effectively online. These questions must be saved for consideration in another paper. I said in the introduction to the paper that I hoped to avoid the conclusion that a balance is required between face-to-face and online learning; to do so is probably impossible but I hope that the paper provokes some further consideration about what that might actually mean. At the least, I hope it demonstrates that online learning, as Dr Robert Sadler suggests, cannot be an "all consuming panacea for the future. It is a strategy that supplements other methodologies rather than supplants them."[97]

97 Sadler, "The Renaissance of Vocational Education and Training: Miscellaneous Hints for Undernourished Elephants Yearning to Dance".

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