Australian Flexible Learning Framework

Supporting Flexible Learning Opportunities

Flexible Learning Futures in Vocational Education and Training: Drivers and Issues

A Discussion Paper prepared for the Flexible Learning Advisory Group (FLAG)

Kaye Schofield, 22 August 2003

"The story of the revolution in information technology is at once a story of technology and a story of innovations in business organization and practice. The two stories are yoked together; they pull forward together."
Tools for Thought: What is new and important about the E-conomy?, Stephen S. Cohen, J. Bradford DeLong, John Zysman, University of California, Berkeley, 2000

"…successful innovation does not just depend on R&D or new technology. It also depends on the utilisation of a whole set of complementary assets including work practices, organisational behaviour, the development of soft structures (e.g. supply chain management and customer relationships) and market assessment and strategic decision making."
Cairney, T. (2000) *The Knowledge Based Economy: A Review of the Literature*, NSW Board of Vocational Education & Training, Sydney, p.17

Web address: flexiblelearning.net.au

The *Australian Flexible Learning Framework for the National Vocational Education and Training System 2000-2004*, is available at the above URL.

The companion document, *Implementation Plan 2003* can be viewed and downloaded at: flexiblelearning.net.au/aboutus/keydocuments.htm

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An initiative within the Australian Flexible Learning Framework for the National Vocational Education and Training System 2000-2004.

Managed by the Flexible Learning Advisory Group on behalf of the Commonwealth, all States and Territories in conjunction with ANTA.

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Introduction

This discussion paper has been prepared as a think piece for FLAG as it considers the medium and long-term directions for flexible learning in VET.

The paper is both (relatively) brief and highly selective. It does not canvass global or national trends in the information economy nor does it examine trends in e-learning since information on these matters is now quite extensive and well-known to FLAG.[1] It does not assess the achievements (or shortcomings) of the Australian Flexible Learning Framework nor does it adopt an advocacy role in relation to flexible learning. Rather it tries to take a relatively objective look at the factors most likely to impact on the structure and substance of flexible learning in VET in the future.

The paper is organised in three sections.

- Section A considers rationales for putting flexible learning in VET more firmly on the public policy agenda.
- Section B focuses on the high-level drivers of flexible learning in VET.
- Section C highlights some of the key issues that will need to be considered in FLAG's strategic planning processes for 2004 and beyond.

Section A: Should flexible learning in VET be on the public policy agenda?

It is self-evident that flexible vocational learning is a priority for flexible learning practitioners and proponents. However, to what extent should it be a priority for policy-makers and politicians in the increasingly crowded world of public policy? What precisely is the problem it is intended to solve? Is it an idea whose time has passed now that ICT has become embedded in all aspects of work and personal life? How will we know that the policy objective for flexible learning has been reached? These are just some of the legitimate questions that are now being asked about flexible learning in VET.

Justifications for a public policy commitment to VET abound. So too do justifications for a commitment to flexible vocational learning. Some of the justifications for flexible learning are a sub-set of the VET agenda itself while

[1] This paper should be read in conjunction with (a) the Framework research paper "e-learning emerging issues and key trends" by John Eklund, Margaret Kay and Helen M. Lynch (June 2003) and (b) "Achievements and Issues for the Future: Advice to FLAG from Program Leaders", 7 July 2003. The matters canvassed in those papers are not repeated in this one.

others stem from agendas external to VET such as innovation policy and policy on the information economy. Some are rhetorical while others are truly evidence-based. Justifications also vary according to the audience to which they are directed and they change over time.

Stripping these multiple rationales down to the core, there are at least three fundamental reasons why flexible learning is a matter of continuing public policy interest.

Productivity

Flexible learning contributes to national productivity growth (and therefore national prosperity) in at least three ways.

First and most obviously, increased workforce skills can raise workers' output per hour worked. By offering more choices to both firms and individuals about how, when and where skills are developed, access is enhanced and reach increased, with a consequent positive impact on productivity.

Second, as a recent Productivity Commission study indicates "…there is a substantial body of opinion that skills in the workforce increase the rate of innovation through fostering the absorption and further development of technologies."[2] In turn, innovation increases productivity.

Third and perhaps more controversially in the education sphere, technology-enabled learning offers the potential to achieve productivity improvements in the delivery and the management of workforce development initiatives. Such improvements can accrue to individuals, firms and to Registered Training Organisations by achieving faster, better or more skills acquisition for a given investment of time or money. It does not necessarily mean cost cutting although that should not be ruled out.

While improved productivity in VET is notoriously difficult to measure, especially when it has been associated so closely in the past with intensification of work and changing work practices, productivity improvements should nevertheless be actively pursued using a mix of technological tools.

Workforce flexibility

After more than a decade of economic reform and deregulation, Australia has one of the most flexible workforces in the world. Only 58.8% of the workforce is now employed as permanent employees and this proportion falls to less than half if part-time workers are added. Most employment growth has been in casuals and contractor forms

[2] Barnes, P. & Kennard, S. (2002) 'Skill and Australia's Productivity Surge', Productivity Commission Staff Research Paper, Canberra

of employment.[3]

As the labour market has become more flexible (and the workforce more contingent) traditional modes of workforce development directed to employees in standard work are increasingly problematic. The long-standing model of institutional + workplace training = a skilled workforce is being challenged by growing numbers of contingent workers who are increasingly expected to take responsibility for their own skill development but not always with the necessary technological, cognitive or behavioural skills to do so.

Flexible learning provides a unique mechanism for reaching the growing numbers of flexible workers whether they be in their workplaces, their homes, their communities or on the road.

Social inclusion

Social inclusion matters to government, business and civil society alike for two main reasons.

First, it is a necessary condition for a democratic, fair and just society - for full citizenship. In the UK and Europe, lifelong learning is seen as central to the attack on social exclusion by developing both a sense of competence and the capacities for competent action in and on the world. Alongside smart, successful or lucky communities are socially dysfunctional or ‘toxic communities’ characterised not necessarily by socio-economic disadvantage but more by the absence of neighbourhood links, social networks, community groups and a sense of belonging and inclusion. Job loss and population drift are also factors leading to social exclusion, along with growing income disparity.[4]

Second, the need to engage the whole community with new technologies is already on the public policy agenda because the new economy can only work if new technologies are diffused throughout all strata of society and if communities are enabled and empowered to manage the difficult changes that inevitably arise. Unless individuals and communities see that there are benefits of the information economy, and that these benefits are fairly shared, their ability to participate in the new economy inevitably will be limited.

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3 Hall, R. Bretherton, T & Buchanan, J. (2000) “It’s not my problem. The growth of non-standard work and its impact on vocational education and training in Australia”, NCVER, Adelaide

4 Edgar, D. (2003) “Windows of Opportunity: The changing context of early childhood development”, background paper for Building blocks for life and learning, a Public Education Council forum on early childhood education, 9 July 2003

Flexible vocational leaning in all its forms is an under-exploited vehicle for supporting social inclusion by offering individualised learning and personalised learning support to develop personal competence and 'agency'; by linking and connecting people and businesses within communities and by diffusing new technologies widely and equitably.

Section B: What's driving flexible learning?

Flexible vocational learning is being driven primarily by three interdependent forces: changing technologies, innovation in business organisation and practice and changes in individual and community behaviours and expectations.[5]

Changing technologies

Embedded technologies

In the wave of technological change experienced over the past 15 years, it made sense to identify technology-assisted learning as a specific application of the new technologies and distinguish it from 'traditional' forms of learning.

But technologies are increasingly embedded in conventional products and services, and increasingly invisible in the process. In time, it will be almost meaningless to speak of the Internet economy.

This raises the question of whether existing practices associated with either e-business and e-learning (and the distinctions between them) will still have meaning in five years time as ICT becomes fully embedded in business and in learning.

A continuous process of experimentation

Technological progress is a continuous process of experimentation and search for new technological capabilities to solve business problems. The rise of linked high-speed data networks and the associated fall in costs of data transmission have made new applications possible, and these in turn have been

[5] A strong case can also be made for a fourth force: government policy, which plays a major role in enabling a country to lead in developing information technology and in creating the conditions in which a country can lead in the use of information technology throughout the economy. This is largely achieved through public investment in science and technology and in the technologically educated people needed to realize the benefits of the e-conomy; rule making for the e-conomy; and the basic issues of institutional and labour market flexibility and inclusion. See "Tools for Thought: What is new and important about the E-conomy?", Stephen S. Cohen, J. Bradford DeLong, John Zysman, University of California, Berkeley, 2000

driven by the search for new applications. Broadband into homes and wireless voice networks are already a reality for some, although Australia has a long way to go in access to broadband. Predictions about the next wave of technologies have limited value in this fluid and fast-changing environment. However, what is certain is that interaction between business responding to market forces and technological innovation will be an ongoing process.

Australia is doing well on most measures

Australians are major adopters of information economy enabling technologies such as the Internet, computers, and mobile telephones, and are increasingly using the Internet for a wide range of activities associated with their day-to-day lives (see Annex A for details).

The National Office for the Information Economy (NOIE) has developed the NOIE Index, a device for international benchmarking. The Index ranks 14 key countries across 23 statistical indicators relating to progress in the Information Economy with each country receiving a final score for ranking purposes. As the following table shows, Australia ranks third on the Index and is in close range of the Index leaders, USA and Sweden.

Summary of country rankings and scores on the NOIE Index, 2002

Country	Rank	Score	Country	Rank	Score
United States	1st	67.3	South Korea	8th	50.5
Sweden	2nd	58.4	Taiwan	9th	48.55
Australia	3rd	55.7	UK	10th	46.5
Norway	4th	53.3	Germany	11th	45.4
New Zealand	5th	52.8	Ireland	12th	43.8
Hong Kong	6th	51.5	France	13th	39.15
Singapore	7th	51.1	Italy	14th	38

Source: NOIE (2002) *The Current State Of Play: Australia's Scorecard*, National Office for the Information Economy, April 2002

However, there is no room for complacency. Other countries have plotted the same road to prosperity, and being a first mover may have few long-term advantages unless Australia can capitalise and improve on its ranking.

Business use of technologies appears to be stabilising

Following a period of rapid growth in the adoption of computers, Internet and web presence by Australian businesses, growth has now slowed. In the year ending June 2002, there was no growth in business use of computers and only marginal growth in the proportion of businesses with access to the Internet or a web presence. It remains to be seen whether this is a temporary or long-term trend.

Business Use of Selected Technologies Over Time (a)

	1994	1998	2000	2001	2002
% Businesses using a computer	49	63	76	84	84
% Businesses with Internet access	na	29	56	69	72
% Businesses with a web presence	na	6	16	22	24

na Not available

(a) Proportions are of all businesses at the end of June

Source: ABS (2003) Business Use of Information Technology, Australia, Cat. 8129.0

There is a technology gap between big business and small business

One million small private sector businesses employ 3.5 million people. 25% of all Australian jobs are in micro-businesses, with less than 5 employees

In relation to methods of Internet access, there are clear differences between large businesses (100 or more employees) and small businesses. ABS data for 2001-2002 shows that 46% of large businesses using the Internet had access via a dial-up modem and also other methods including the use of ISDN (36%), other high speed access (26%) and Digital Subscriber Lines (20%). In contrast, 88% of micro businesses with Internet access (0-4 persons employed) used dial-up modems, with other forms of access being far less common.[6]

Common standards are becoming increasingly important

Norris, Mason and Lefrere (2003) amongst many others have identified common standards as a key factor enabling and stimulating the e-knowledge industry. They suggest that understanding about how to deploy international standards to ensure more useful return on investment (such as through interoperability) will stimulate continued investment. They contrast the state of standards setting over time as follows.

Yesterday: Rudimentary standards for computer-based training are developed.

Today: Clusters of international standards groups are creating the first generation of standards for learning objects and e-content

[6] ABS (2003) Business Use of Information Technology, Australia, Cat. 8129.0

repositories.

Tomorrow: Iterative cycles of standards development continue, creating truly scaleable, interoperable standards for digital content, its access, and transmission.[7]

Fundamental change takes time

Policy-makers (and others) tend to grossly under-estimate the time it takes for the full potential of new technologies to be realised and expect adoption to be deep, broad and quick. It is one thing to adopt or adapt individual technologies; it is another to grasp immediately the full implications of data networks and a networked world.

Economic historian Paul David argues that it took nearly half a century for business users to work out the possibilities for increased efficiency through factory reorganisation opened up by the electric motor.[8]

While technology will drive and be driven by the actual or latent demand for flexible learning in the future, building the organisational environment needed to maximise its benefits is likely to proceed at a slower pace.

Innovation in business organisation and practice

Innovation systems are increasingly important

Innovation is widely seen as one of the defining characteristics of a knowledge-based economy and is increasingly recognised as central to economic competitiveness.[9]

Innovation is not a ‘big bang’. It is a dynamic process of continuous improvement in products and services involving complex interactions inside organisations and in wider networks of organisations that actively seek to learn from one another, share specialised infrastructure, business intelligence, labour markets and services and engage in mutually beneficial technology transfers.[10]

These inter-firm and inter-industry collaborations represented in

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7 Norris, D., Mason, J. & Lefrere, P. (2003) *Transforming e-Knowledge: A revolution in the sharing of knowledge*, Society for College and University Planning, Ann Arbor, Michigan

8 David, P. “Computer and Dynamo: The Productivity Paradox in a Not-too-Distant Mirror,” in *Technology and Productivity: The Challenge for Economic Policy* (Paris: OECD), pp.315-347, cited in Stephen S. Cohen, J. Bradford DeLong, John Zysman (2000) “Tools for Thought: What is new and important about the E-conomy” University of California, Berkeley

9 Cairney, T. (2000) “The Knowledge Based Economy: A Review of the Literature”, NSW Board of Vocational Education & Training, Sydney, p.9

10 Ibid

industry supply chains, networks and clusters are not technology-dependent but new technologies have accelerated their development and their value.

In a context where increasingly, groups of firms collaborate for mutual competitive advantage, corporate training and development based on traditional firm-based approaches becomes less compelling. The challenge is to implement distributed learning systems that are fully embedded in and support distributed innovation systems, probably alongside firm-specific training and development.

Firm's practices and culture are changing

The dramatic rise in global competition has increased pressures on the costs and profits of Australian firms. They are responding to these pressures in a range of ways – labour shedding, outsourcing, value adding and non-price competition, increasing the capital-labour ratio, altering production strategies and adopting new technologies. New organisational forms are taking shape as a result.

All these factors are putting considerable pressure on the corporate training and development function. Some firms are responding by reducing the training hours provided to their employees. In contrast, high-performance firms are looking for ways to organise and manage quality workforce development for an increasingly mobile and distributed workforce.

Industry dynamics vary

Despite the growth of interest in innovation systems, new ways of organising business and in new technologies which make firms more competitive, it should not be assumed that these forces are playing out uniformly across all industries.

Some industries have less need and fewer incentives to innovate by the very nature of their industry, their clientele and their inter-organisational relationships. These are the same firms with few incentives to train.

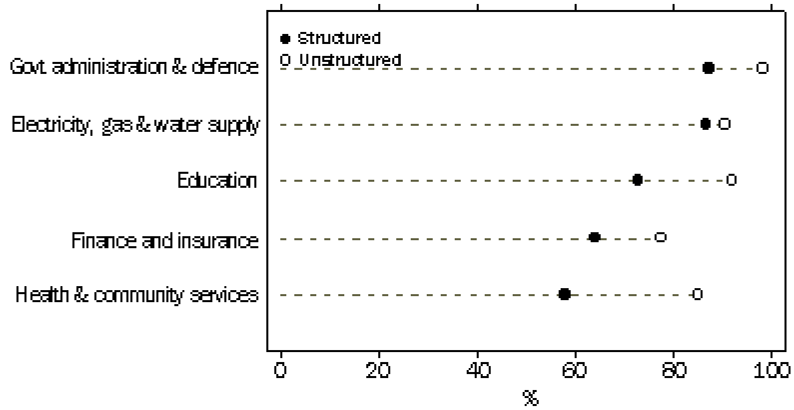
The ABS Survey of Employer Training Expenditure and Practices 2001-2002 [11] found that "structured training provision varied substantially across industries, as might be expected due to differences in the need for specialised skills and qualifications". As the tables below indicate, employers classified to Government administration and defence had the highest levels of structured training provision (88%), followed by those in Electricity, gas and water supply (87%) and Education (73%). Structured training provision was lowest in Transport and storage (17%),

[11] ABS (2003) *Employer Training Expenditure and Practices, Australia*, 6362.0

Manufacturing (34%) and Retail trade (34%).

Industries with Highest Proportion of Structured Training Provision(a)

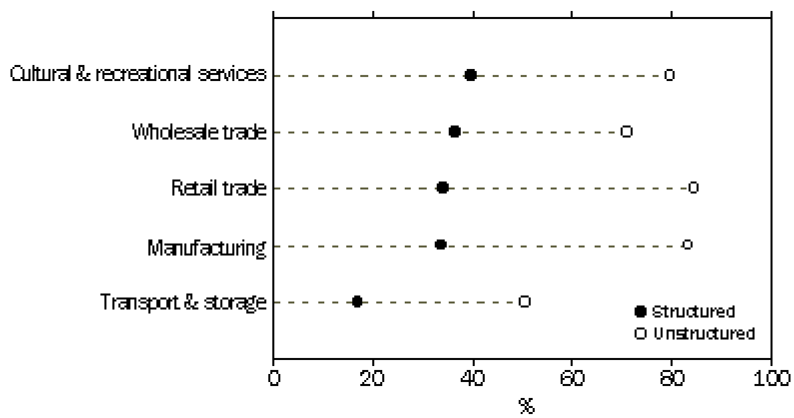
Employers that provided structured and unstructured training



(a) Ranked by proportion that provided structured training.

Industries with Lowest Proportion of Structured Training Provision(a)

Employers that provided structured and unstructured training



(a) Ranked by proportion that provided structured training.

VET is changing in the same direction

Many of the same forces operating on firms and industry networks are affecting RTOs and the VET system. Cost pressures, changing and diversifying client demand, market deregulation and technological change are all factors driving innovation in VET, the establishment of new business, product and service models and the search for technology-assisted solutions.

In the same way that firms are seeking to collaborate for mutual advantage, so too are RTOs and VET systems across Australia. Weak forms of collaboration include benchmarking, communities of practice and information sharing but stronger forms are evident in product and service partnerships, national projects, technology transfers and resource rationalisation and sharing. Collaboration for flexible learning in VET has been driven by these wider changes in the structure and organisation of the business of VET and it displays many of the hallmarks of an industry network or a geographically dispersed industry cluster.

Changes in individual and community behaviours and expectations

While technological change and business innovation are widely accepted as key drivers of the new economy and therefore of e-learning, social trends are rarely simply a response to external forces. Rather, people and the social environment transact to produce particular behaviours at any point in time. Social forces develop their own logic and interact in constantly unpredictable ways with economic and technological forces to produce personal and social change. We need to understand the evolving social environment better and interpret it in the specific context of flexible learning.

The age of community development?

Over the past decade, there has been a resurgence of interest in the quality of community life and in community development. Community development is certainly not new and has long been a focus of study. Terms to describe it have varied according to the prevailing fashion. At present “social capital” has considerable currency although, as Robert Putnam points out "social capital is to some extent merely new language for a very old debate in American intellectual circles".[12]

Four inter-related concepts underpin community development: a sense of community, participation and empowerment; competence, leadership, voluntarism and creativity; social capital and trust; and positive affect and attitude.[13] Each of these concepts are linked to how people and communities are feeling and behaving as they scramble to adapt to the rapid social and economic changes at global, national and local levels. One example is the rise of volunteerism, with more people becoming involved in voluntary work than in the past. The proportion of adults doing voluntary work increased from almost a quarter in 1995 to almost a third in 2000. People living outside of capital

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[12] Putnam, R. (2000) *Bowling Alone: The Collapse and Revival of American Community,* New York, NY, Simon & Schuster, p24

[13] Regional Women’s Advisory Council (2001) *The Success Factors: Managing change in rural and regional Australia*, Technical Report, Department of Transport and Regional Services

[14] ABS, *Australian Social Trends 2002*, 4102.0

[15] “Australia at a Turning Point”, paper based on a presentation by Hugh Mackay to the ALIA 2002 Conference – 20-22 May, 2002, http://conferences.alia.org.au/alia2002/papers/mondayspapers.html#mackay

cities were more likely to volunteer than those living in them.[14]

The social commentator Hugh McKay suggests that the rise of "community" can be traced to the shrinking of the family and the desire for connectedness. "...we are on the threshold of a period of significant community development. The shrinking household means that we will have to satisfy our herd instinct in new ways: book clubs, eating out, adult education classes and community/group activities of every kind will satisfy the desire for connections with the herd which were previously satisfied by the life of the household."[15]

Intergenerational difference

The attitudes, preferences and values of the Baby Boomer generation (those born between the years 1946-1964) has dominated almost every aspect of social and economic life for more the forty years and will continue to do so as they move into retirement.

While there are huge differences within any cohort group, the subsequent generations have different attitudes, values and priorities. Edgar suggests that "…GenX (1965-1977) and GenY (1978-2002) are driven by a desire for 'balance' in their lives, see the family as a haven of obligation in a world of choice, feel that respect has to be earned, not simply assumed by authorities, accept the need to negotiate a moral self in a complex world, are very tolerant of diversity and are socially conscious, altruistic and active volunteers."[16]

The drift to the cities

The Productivity Commission has consistently highlighted the unequal impacts of structural change on regional Australia. The drift of older people to the coastal fringe may leave inland regions with more young people, but at the same time, young people are moving to the larger cities to find suitable education, jobs and services. This trend has effects well beyond the experiences of those directly involved.

Throughout the 20th century, economic and social change has profoundly affected rural and regional Australia, evident in trends such as migration to the coastal belt, relocation of services from smaller to larger centres and industrial restructuring. The migration to coastal towns has been particularly evident in the major years of industry restructuring, 1976-1996.

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[16] Edgar, D. (2003) "Windows of Opportunity: The changing context of early childhood development", background paper for Building blocks for life and learning, a Public Education Council forum on early childhood education, 9 July 2003

Shifts in the Australian Population over the 20th Century			
Variable	**Beginning of 20th Century**	**End of 20th Century**	**% change**
Percentage living in capital cities	32	64	100.0
Percentage living in coastal cities	7	19	171.4
Percentage living in 'the bush'	61	17	-72.1

Source: Regional Women's Advisory Council (2001) *The Success Factors: Managing change in rural and regional Australia*, Department of Transport and Regional Services

A critical factor contributing to this drift to the cities is the wider range of education and training opportunities available to regional Australia. Flexible learning can play a role in enhancing opportunities for regional Australians, especially young people, to learn where they live, neutralising to some extent the pull of the cities. Similarly, a strong skills base in regional Australia developed through flexible learning can counterbalance some of the effects of structural change by opening new opportunities for regional economic development.

Section C: What are the key issues for the future of flexible learning in VET?

It is a challenge to cut through the growing complexities and layers of flexible learning in VET to settle on a small number of matters most likely to be of strategic significance over the next five years. For the purposes of discussion, seven candidates are offered below.

Adding value to the National Strategy for VET 2004-2010

Flexible learning has much to contribute to the implementation of the National VET Strategy. Aligning flexible learning approaches across the span of the whole National VET Strategy will be necessary to give greater breadth and systemic relevance to flexible learning than it has perhaps had in the past.

To do this, FLAG will need to consider at least two matters.

- The National Strategy is structured in four layers as follows: Vision → Objectives (4) → Strategies (12) → Action Plan. FLAG will need to decide the level at which flexible learning can most usefully connect. There is some appeal in moving from the National VET Vision and structuring FLAG effort around what flexible learning can do for people, business and communities.

- Flexible learning in VET certainly operates in but also beyond the slipstream of the National VET Strategy. It needs to foster and respond to bottom-up knowledge and changes and feed information upwards. Therefore, while it needs to be aligned closely with the Strategy, it also needs to be adaptable, agile, able to anticipate the future and reconfigure itself quickly to changing demands in the environment as they arise.

Closing the gaps in the take-up of flexible and e-learning

Since 1999, the Australian Flexible Learning Framework has pursued a strategy for increasing the adoption of flexible learning, especially e-learning. Evidence indicates considerable progress both in the business community and in broader society.

In a sample of 5,889 businesses surveyed by the ABS in July 2002, 37.8% of those providing structured training to employees were using electronic learning arrangements to do so, an increase of 15.9% on the previous financial year.[17]

The table overleaf illustrates the different delivery modes now being used by those Australian firms providing structured training to their employees.

The same survey also revealed disturbing differences between sectors, industries, firms and States/Territories.

- There is a 20% gap between private sector use of electronic learning arrangements (37.4% of employers) and public sector use of electronic learning arrangements (57.4% of employers)
- There is a gap between the industry with the highest business use of electronic learning arrangements to deliver structured training (Communications industry at 92.4%) and the industries with the lowest business use of electronic learning arrangements to deliver structured training (Cultural and Recreation Services industry at 18.2%; Accommodation, Cafes and restaurants at 18.3% and Construction industry at 21.9%).[18]
- There is a 30% gap between those large employers (100 employees or more) using electronic learning arrangements to deliver structured training (64.7%) and those employers

[17] ABS (2003) *Employer Training Expenditure and Practices, Australia 2001-2002*, 6362.0

[18] ABS advises that there is a relative standard error of between 25% and 50% in these estimates and that they should be treated with caution.

employing less than 20 employees using electronic learning arrangements to deliver structured training (35.5%).

- There is a 20% gap between the State with the highest rate of business use of electronic learning arrangements (Queensland at 48% of employers) and the State with the lowest rate of business use of electronic learning arrangements (Tasmania at 28.9% of employers)

Employers that Provided Structured Training

	Employer Size			
	Less than 20 employees	**20-99 employees**	**100 or more employees**	**Employers that provided structured training**
Structured training arrangements	**%**	**%**	**%**	**%**
Structured on-the-job training	50.8	80.2	92.8	54.8
Internal workshops, lectures, etc.	36.8	72.6	88.2	41.7
External workshops, lectures, etc.	74.6	85.4	94.5	76.2
Computer-assisted structured training	31.2	42.4	61.3	33.1
Audiovisual	9.9	19.3	28.3	11.3
Correspondence	11.3	16.8	33.2	12.4
Total(a)	**100.0**	**100.0**	**100.0**	

(a) Employers could use more than one type of structured training arrangement and therefore components do not sum to total.

Source: ABS, Employer Training Expenditure and Practices, Australia 2001-2002, 6362.0

In the 12 months to December 2001, 23% of Australians were using the Internet to access education services.[19]

On the NOIE Index discussed earlier indicates that the disparity in access between males and females was smallest in Australia of all 23 countries in the index, with 73% of males and 72% of females having access to the Internet. As Annex A indicates, the gap in access to the Internet in Australia by age group is also slight.

Such macro-level data masks differences between groups, particularly those related to income levels, educational experience, cultural, ethnic and religious background and geographic location.

Where such gaps are identified, they cannot be allowed to widen, suggesting that the next iteration of the Flexible Learning Framework would do well to identify them more rigorously and design initiatives which target them specifically.

Removing the barriers to recognised training

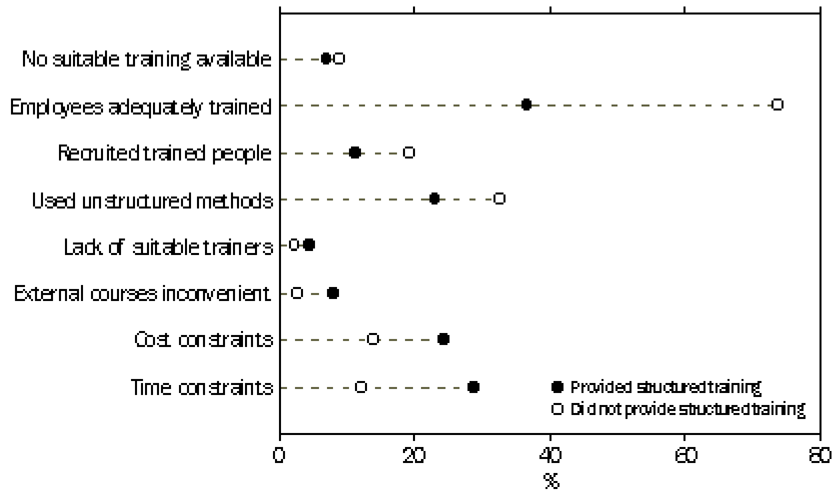
The ABS Survey of Employer Training Expenditure and Practices, Australia 2001-2002[20] identified the key factors that constrained the provision of structured training. It found that over half (59%) of all employers did not provide structured training to their employees. Of these employers, around two-thirds provided unstructured training, while the remainder (19%) provided no training at all. The most commonly reported constraints were that current employees were already adequately trained (74%), or that training needs were being met through unstructured methods (33%). This reflects that, for many employers, the lack of structured training was not indicative of an unmet training need.

However, time constraints, cost constraints and the unavailability of suitable training were also identified as constraints on the provision of training. Flexible learning may have a significant role to play in removing at least some of these barriers.

Constraints on Structured Training, By Whether Training Provided

[19] NOIE (2002) *The Current State Of Play: Australia's Scorecard*, National Office for the Information Economy, April 2002

[20] ABS (2003) *Employer Training Expenditure and Practices, Australia 2001-2002*, 6362.0



Achieving policy and program coherence

In an increasingly inter-dependent world, governments are seeking a greater level of coherence in public policy. This is the result of the growing complexity of many policy issues, the increasing interdependence of policy problems and their solutions, the gap between policy formulation and policy implementation, a better informed electorate with rising expectations, the intractability of certain policy problems and the fragmentation of public policy along departmental and government portfolio lines within a Westminster system of governance. The desire for more strategic control from the centre is also a factor.

VET provides services to the economy, society, government and to the individual. There will be growing pressure on it to break down the boundaries at four levels

- The boundaries between individual national VET programs (especially between the Australian Flexible Learning Framework on the one hand and the National Infrastructure program and national professional development programs on the other).
- The boundaries between jurisdictions
- The boundaries between VET, schools, universities and ACE organisations
- The boundaries between VET and related areas of public policy especially employment, family and community services, industry science and technology and workplace relations.

A national approach to flexible learning has the potential to make a major contribution to greater coherence at each of these levels. This would require extending the concept of collaboration for flexible learning beyond the current jurisdictional focus.

One further point is worth noting. e-learning in Australia seems to be running along three parallel tracks. There is the largely publicly funded track travelled by the different VET systems individually or together, sometimes in association with ACE and sometimes not. There is the privately funded e-learning track travelled by firms for their corporate training and supply chain management together with private firms developing products and services to support corporate e-learning. And there is the hybrid e-learning track travelled by non-VET government agencies at Commonwealth, State and Territory levels. These last two travellers may or may not be providing nationally recognised training and, where they are, there are currently some opportunities through initiatives such as LearnScope to come together although these seem to be rarely taken up. Opportunities may exist for these three groups of pilgrims to come together, share experiences and identify whether there is scope for some collaboration.

Strengthening Pedagogy

There is a resurgence of interest within VET on its core business - teaching and learning. This is manifest in many ways, including the wide national interest in ANTA's recent blue-sky project "Fresh thinking about learning and learners". There is also growing interest in the contribution theories such as social cognition, cognitive neuroscience and situated learning can make to improving vocational learning. But this interest in how different clients (adults) learn is not readily translated into a framework for how that learning can be facilitated (taught).

At the same time, flexible learning policies and practices in Australia operate from a strongly pedagogically oriented foundation, explicitly rejecting technology-driven approaches to flexible learning. This characteristic has been a strength and the reason why they are so well regarded by educators around the world. Working not from the base of learning theories but from principles of good instructional design, e-learning practitioners have focused on how teachers teach and on developing their capacity to do so online.

Recognising that teaching and learning is the core business of VET, better integrating the pedagogical knowledge built up by e-learning practitioners is a strategic issue for the future.

More productive learning environments

Speed, access, consistency and customer service are probably the key drivers of flexible learning in most RTOs. But cost is a also a consideration and it should receive more attention than at present. Most VET stakeholders (and clients) have an interest in lowering the cost of vocational instruction as long as this does not result in a reduction in quality, although the incentives to do so are variable.

Fears about unacceptable trade-offs between cost and quality and industrial relations constraints, amongst other factors, have made it difficult to explicitly consider the role of e-learning in particular in making VET learning environments more productive. However, flexible labour practices and work intensification may have reached their limits for the moment so it may be timely to consider how further productivity gains from technology-assisted learning could be sought.

Working with firms and industry networks

Interest in value chain management as a business strategy is growing. Inter-firm collaboration is increasing and industries and governments at all levels are fostering regional and state economic development through facilitating the growth of export-oriented industry clusters. Yet it would seem that the links between these collaborative efforts and skills development are relatively weak. Blandy, in his work on South Australia's business clusters observed "*…there is a strong need to add skill, R&D, infrastructure, seed capital, incubation and similar foundations players to each cluster*."[21]

Within many supply chains, a good number of the suppliers and distributors are small businesses. Consequently, a deliberate strategy of using learning technologies up and down the supply chain has multiple benefits. It would also build on the current national project on skill eco-systems.

Working with communities

The development of communities of practice is becoming increasingly significant and easier in a networked world. Underpinning this trend is an assumption that place becomes less relevant as people connect and interact virtually. Yet the research indicates that place is in fact becoming increasingly important to people in their search for a 'sense of community'. Flexible learning strategies need to forge better connections with related initiatives around contemporary policy concepts such as 'place management', 'learning communities/ cities/towns' and around and 'sustainable communities'.

[21] Blandy, R. (2001) 'Industry Clusters Program: A Review', prepared for SA Business Vision 2010

The NOIE Index														
	Aust	France	Ger	HK	Ire	Italy	Nor	NZ	Sing	S.Kor	Swed	Taiwan	UK	US
% of households with a fixed telephone line	97	90	97	99	84	93	100	93	98	99	100	98	94	94
% of households with more than one telephone line	11	5	9	13	8	1	20	8	14	1	6	25	7	29
% of persons 16 yrs & over with use of mobile phone	64	46	51	75	60	65	69	68	59	66	68	69	60	53
% of households which own / lease a PC	67	35	47	62	44	42	60	62	64	70	65	58	47	65
% of households online	52	22	36	58	46	34	52	54	55	56	58	51	47	54
Internet connection speeds	5	13	8	52	1	4	5	5	25	87	12	38	4	19
% of persons 2 yrs & over with Internet access via a home PC	54	20	36	59	35	34	57	53	59	62	65	55	42	64
% of persons 16 yrs & over with Internet access from any location	72	48	54	69	66	46	77	75	65	71	82	64	61	76
% of persons 16 yrs & over with Internet access at home or work	92	42	64	89	78	54	100	94	84	81	107	76	77	101
% of persons 16 yrs & over with Internet access using Internet	64	73	65	41	46	60	64	64	68	66	78	52	43	64
% of persons 16 yrs & over with Internet access by gender	99	91	89	97	96	89	95	96	97	95	95	98	91	97
% of persons 16 yrs and over with Internet access by age group	88	63	74	79	74	73	75	82	75	73	80	77	77	

Number of persons 16 yrs & over with Internet access per ISP	100	4	5	7	53	7	7	30	8	1	8	1	13	75
Number of secure servers / 100,000 persons 16 yrs & over with Internet access	36	21	16	15	29	6	14	36	31	2	20	4	26	49
Price of 40 hours of Internet use at peak times	56	40	47		32	52	37	63		53	41		39	100
Charges for a basket of national leased lines of 2 megabits per second	20	40	39		46	22	67	20		12	100		41	41
Average number of Internet sessions & hours online per month	19.5	21.4	25	31.1	13.4	17.5	16.4	21.6	23.4	45	17.5	21	19	30.3
% of persons 16 yrs & over purchasing online	64	61	81	35	47	36	74	62	47	67	90	42	73	103
B2C as a % of GDP	24	18	32	22	3	5	55		18	10	71	18	43	100
B2B as a % of GDP	37	13	23	27	20	10	33		37	27	53	43	30	100
Peak penetration of online government services	25	21	30	25	5	19	32	16	23	13	18	5	8	21
E-government rankings	50.7	40.1	40.6		46.9	37.8	36.5	36.8	43.4	33.4	29.4	52.5	47.1	57
E-business readiness rankings	83	73	75	75	73	67	81	70	79	70	80	72	81	87
Total	**1280**	**900.5**	**1044**	**1030**	**1006**	**874**	**1227**	**1109**	**1073**	**1161**	**1344**	**1020**	**1070**	**1480**
# indicators	23	23	23	20	23	23	23	21	21	23	23	21	23	22
Score	55.7	39.15	45.4	51.5	43.8	38	53.3	52.8	51.1	50.5	58.4	48.55	46.5	67.3
Ranking	3	13	11	6	12	14	4	5	7	8	2	9	10	1

Source: NOIE (2002) *The Current State Of Play: Australia's Scorecard*, National Office for the Information Economy, April 2002