



NCVER

INFORMING POLICY AND PRACTICE IN AUSTRALIA'S VOCATIONAL EDUCATION AND TRAINING SECTOR

REFLECTIONS AND FUTURES

Editors

Penelope Curtin and Phil Loveder

Proceedings of the 25th anniversary forum of the National Centre for Vocational Education Research



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Penelope Curtin
Phil Loveder

National Centre for Vocational Education Research

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The National Centre for Vocational Education Research (NCVER) is an independent body responsible for collecting, managing and analysing, evaluating and communicating research and statistics on vocational education and training (VET).

NCVER's inhouse research and evaluation program undertakes projects which are strategic to the VET sector. These projects are developed and conducted by NCVER's research staff and are funded by NCVER. This research aims to improve policy and practice in the VET sector.

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Contributors

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Brian Knight is a Principal Research Consultant at NCVER. He has recently worked on secondment at the Department of Education, Science and Training for two-and-a-half years on projects relating to the transfer of functions following the closure of ANTA.

Introduction

To mark its twenty-fifth anniversary, the National Centre for Vocational Education Research (NCVER) brought together policy, industry and academic leaders to reflect on the role that research and statistics have played in the development of Australia's vocational education and training (VET) sector. The forum *Informing policy and practice in Australia's vocational education and training sector: Reflections and futures* was held at the Stamford Plaza Hotel, Adelaide, on 21 March 2007.

After an official welcoming from the current Chairman of the NCVER Board, Peter Grant, a former NCVER Managing Director, Chris Robinson, now Head of the Department of Education and Children's Services in South Australia, reflected on NCVER's role in promoting quality research and statistics in the Australian VET sector.

An important role that NCVER has played over its history has been to provide a factual and analytical basis to many of the important national debates, skills shortages being just one, according to Mr Robinson. A future challenge for NCVER will be to continue to provide research that is valuable and has impact. A way of achieving this might be through undertaking a range of research in an area, rather than focusing on a single project approach. Peter Kearns of Global Learning Services, the discussant for this session, highlighted the need for greater attention to regions and to the international context. Incorporating new and emerging issues such as sustainability into VET practice, and research more generally, will become increasingly important in the future.

Berwyn Clayton from the Canberra Institute of Technology reflected on the development of a VET research capacity in Australia. In particular, she highlighted the need to raise the profile of the research effort and make connections to policy and practice. Professor Andrew Smith of Charles Sturt University responded by warning of a potential future shortage in research capacity in VET due to 'greying' of the existing research community. Steps need to be taken now to build researcher capacity in the sector, and NCVER has a major role to play in this.

Mark Cully of NCVER and Brian Knight of the Australian Department of Education, Science and Training discussed the development and growth of a mature program of VET statistics. The present national statistical program needs to continue to evolve, and challenges outlined by the speakers include obtaining more information on total VET effort and developing meaningful activity and output measures for VET. The discussant, Michelle Bruniges, Chief Executive of the Department of Education and Training in the Australian Capital Territory, agreed that the collection of training statistics had come a long way, but that we need to do more to respond to local and community needs.

Finally, Tom Karmel, current Managing Director of NCVER, closed the forum by anticipating NCVER's future. According to Dr Karmel, NCVER must continue to feed into policy by understanding the VET sector and how it fits into our economy and society. There will always be a role for an organisation such as NCVER while there exists the need for information and research to support policy-makers, practitioners and the wider community alike.

These proceedings will be relevant to those interested in the development and growth of a VET research and statistical capacity in Australia.

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Evolution of NCVER and its role in the vocational education and training sector

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Vocational education and training (VET) began early in Australia's history—with convict transportation. Early Australian apprenticeships lasted nine years and the contract of training at that time was more complex than that of today, and certainly contained more data items on it. For example, potential apprentices had to pledge that they attended church on Sundays and that they wouldn't misbehave generally. Over the years the contract of training has gradually been reformed and requests for more personal information about an apprentice's life have been deleted.

VET institutes developed around the country in various ways, for example, through mechanics institutes and technical high schools. Interestingly, it seems that technical high schools will once again become part of the VET landscape.

In the 1970s, probably one of the most important reports ever released in relation to vocational education in Australia was that of Myer Kangan, which ultimately led to the development of the modern technical and further education (TAFE) system and the associated systematic and coherent funding of that system. TAFE—the public VET system—has been extremely successful, although over the years it has attracted some criticism. VET systems around the world suffer by comparison with the public VET system in Australia.

One of the important outcomes of the Kangan report was a recommendation to establish an Australian TAFE Technology Centre. Although this didn't eventuate, a short time later a further enquiry (the Committee of Inquiry into Education and Training—known as the Williams Committee) went one step further and recommended the development of a TAFE centre for research and development. The first element in implementing that recommendation was the establishment in 1979 of a national TAFE clearinghouse for research information. The actual research establishment, the TAFE National Centre for Research and Development, began in 1981.

In 1981, the centre's first director, Graham Hermann, was appointed, with the centre's first review in 1984 and the subsequent recommendation that it should continue. Bill Hall was appointed director in 1984 and remained director for the centre's formative years.

The *Australian Journal of TAFE Research* started in 1985. Also around this time the heads of the TAFE system in the various jurisdictions initiated the second review of the centre. The recommendation from that review was that the centre should continue to receive core grant funding for research.

The first direct role for the centre in statistical collection began in 1991 when it assumed responsibility for the national TAFE statistical collection. The Kirby enquiry into labour market programs demonstrated the need for the collection of national TAFE statistics. Until that time the statistical collections in this area were neither consistent nor representative.

The first issue of the *Australian Training Review* was released in 1991. In 1992 the TAFE National Centre for Research and Development was renamed the National Centre for Vocational Education Research. The Australian National Training Authority (ANTA) was also born that year.

In the 1990s a landmark report was produced by Rod McDonald and a number of his colleagues at the University of Technology, Sydney—Geoff Hayton, Andrew Gonczi and Paul Hager. This report, which I'll comment on in more detail later, had a profound impact on what followed.

NCVER became involved in the apprenticeship and traineeship data collection in 1993, and in 1994 began to fund additional VET research through a separate subcommittee, the Australian National Training Authority Research Advisory Council (ANTARAC). And 1995 marks a particularly important moment in VET history. This is when 'the audit of non-financial VET activity' commenced, with the aim of establishing whether the national training data given to NCVER by the states and territories could be verified at individual registered training organisation level. Through this mechanism, governments could feel assured that their money had been spent appropriately.

In 1996 NCVER assumed responsibility for the graduate and student satisfaction surveys and the employer use and views of the VET system surveys. In that year I was appointed as director, and later that year arrangements were made for NCVER to manage a consolidated national competitive research program relating to the VET sector (overseen by the National Research and Evaluation Committee). At the same time ANTA established three VET research centres to undertake more VET research, although these centres had already been conducting research in this area. These centres, along with the University of Tasmania, produced a great deal of VET research in particular fields over the following years and made a significant contribution to the research effort.

In 1997 the VOCED research database (the successor to the TAFE Clearinghouse) became an international database and went online. The clearinghouse had been a paper-based system, with a three-monthly report of research abstracts posted to various stakeholders. Today's VOCED is a far more sophisticated research tool and has become a comprehensive national and international database.

The first national VET research strategy was also developed at that time and covered the period from 1997 to 2000. In 1999 the centre and its research underwent another review, undertaken by a former chair, Rae Taylor. The recommendations from this review were largely concerned with the development of processes to combine the research and policy cycles and maximisation of the comprehensive VET statistical resources that NCVER was making available to the sector.

In 2000 the first issue of *Insight*, the NCVER publication with topical summaries of recent research and other centre activities was released. The second national strategy for VET was developed in 2001 to cover the next few years. In the same year NCVER became a UNESCO¹ Centre of Excellence jointly with TAFE South Australia, and the VOCED database became UNESCO's officially recognised VET research database.

Tom Karmel was appointed in 2002 as the centre's fourth director, with the third national VET research strategy being released in 2003.

ANTA was abolished in 2005 and its functions taken over by the Department of Education, Science and Training. Despite the abolition of ANTA, the important national role for NCVER in research and statistics continued.

New national research priorities were agreed between NCVER and the Commonwealth and states in 2006. At the same time another review was commissioned and was undertaken by Neil Johnston AO. NCVER received overwhelming support from the vocational education and training system and stakeholders, confirming the increasing importance of all the different products and services produced by the centre.

¹ UNESCO = United Nations Educational, Scientific and Cultural Organization.

VET research and NCVER

Earlier I mentioned an important research report by Rod McDonald and colleagues published in the 1990s. In retrospect, I consider that *No small change* was a pivotal document in terms of examining research and the researcher's role in policy work. The report noted that at the time Australia had a fairly low level of VET research and development and most of what was done was being conducted by the centre, with a small amount undertaken by the Commonwealth Government and an even smaller amount being undertaken by the state VET agencies. In terms of actual volume, very little VET research was being conducted at the numerous research centres that did exist in universities. These were more focused on other education sectors, as was the Australian Council for Educational Research, which is now well over 50 years of age.

The *No small change* report hinted that the VET sector made little use of formal evaluations. At that time it was certainly true that very little evaluation work was being undertaken, and perhaps even today this holds true. Certainly at that time VET research was having little influence on VET policy-making. In fact, most of the VET research being done at that time was focused upon various impacts on practice, in other words, on the supply side of the equation. The report recommended a national VET research strategy. That led to the production of various pieces of research that examined the impact of VET research on policy. Those undertaking this work included Bill Hall, Perce Butterworth, Gregor Ramsay and Ken Wiltshire. Gerald Burke examined the impact of statistical and quantitative work on the sector. Chris Selby Smith, John Foyster and I also contributed to the debate at the time. As it turned out, all of this debate over the years 1993 to 1996 became the lead-up to the first national VET strategy.

Chris Selby Smith's work at this time was a significant overview in research, arriving at a few significant conclusions on the impact of research on VET decision-making. Researchers at that time were highlighting the lack of an evidence base in much of the policy-making work. Policy-makers were focused at the macro level, while much of the research at that time was focused very narrowly on particular issues. As highlighted earlier, the policy and research cycles were not well linked at all, and VET research was not greatly influencing VET decision-making.

As also noted above, all of this research work led to this first national VET strategy, which was really very important. It established some areas of investigation to focus on and to prioritise. As far as I know, it was the first national VET research strategy developed in any country and it was specifically aimed at research having a greater role in and impact on policy, and indeed on practice. In that first round, over 75 projects were undertaken or commissioned through the strategy.

Research into the economic and social implications of VET was extremely rare before this strategy, so the priority became to increase significant research in these areas, with the aim of relating the research to policy development. However, research also continued to look at other issues of importance to the sector, such as the transition of young people from school to work, the quality of VET provision, and ways to increase the effectiveness of practice in the VET sector, all of which were also very significant priorities in the strategy.

One of the first NCVER exercises under the new strategy was undertaking a scoping of the research in many areas and bringing the results together as a book of readings. At that time issues were emerging about training markets, VET in Schools was starting to take off and flexible delivery of training was another important area. Each of the chapters in this book reviewed the research work to date in Australia in these and other important areas, resulting in an extremely important scoping exercise—a synthesis of all the VET research over the previous decade. It was a very useful document at the time in gaining an understanding of the breadth and scope of previous research work.

Also in 1997 NCVER decided to become involved in the substantial and heated debates about the market for VET. This led to the publication of a book of readings, *The market for VET*, which captured important national research on the topic. This was the time when the user choice policy was

being implemented. This move generated diametrically opposing views and I considered that it might be an interesting exercise to inform people of the various perspectives and opposing positions on this issue. In a conference organised by NCVER we were able to involve a large number of people who hadn't been so directly part of the VET research community up until that time. This was largely because VET research had focused more on practice rather than on policies. People like Vince FitzGerald and Bruce Chapman spoke in terms of market models, while Kaye Schofield, when discussing the future of TAFE, referred to 'radical surgery or palliative care'.

NCVER Deputy Director Peter Thomson spoke on the role and impact of flexible delivery, while Jessie Borthwick and I gave papers on the nature of VET in Australia at that time, examining the statistics. This conference agenda brought together a lot of government leaders, including the Honourable David Kemp, the federal minister, researchers and policy people, probably for the first time in the VET sector.

The second part of the conference program focused on industry perspectives, with Steve Balzary and Kevin Peoples giving quite different perspectives on industry's training needs. Stephen Billett spoke about some of the research he'd been doing on returns to enterprises from investment in training and VET. Chris and Joy Selby Smith spoke on the user choice policy that was emerging.

The third part of the program, looking at VET students, was opened by the Honourable Dorothy Kotz, the then South Australian state minister for training. At that time there was tremendous debate in Australia about whether VET was for students or industry. Sandra Pattison gave a paper on the student profile.

I think it's useful to look back at that time—this was when the VET research world was beginning to venture out into other areas and undertake work with some direct relevance to the major policy debates at the time.

The next national VET strategy took a step further and an attempt was made to line up the VET research priorities with the objectives of the ANTA national strategy, developed after extensive consultation with providers, stakeholders, industry parties and states and territories. This was a major effort, complicated by the fact that everyone had a completely different view of what the objectives of VET ought to be. NCVER subsequently developed a research strategy that attempted to accommodate those national policy objectives and this determined the direction of the research work for a number of years. Much the same sort of process occurs today, with NCVER staff talking with states and territories and other stakeholders and reaching an agreement about the research agenda for the coming period.

At that time NCVER became aware of the importance of disseminating research—getting the message out to the wider community. NCVER has developed some innovative strategies in attempting to get the research message out, including to stakeholders, and NCVER is one of the more sophisticated research agencies around the world in this regard, expending a great deal of energy informing stakeholders on the results of relevant research. Public research forums, which focus on industry people and other members of the wider VET community, are a case in point.

There are a number of specific areas of NCVER research which I consider have had a direct impact on policy and policy thinking; for example, work done in the last few years on returns to investment in training, while research on apprenticeships and traineeships was widely disseminated through public forums and given extensive media coverage, consequently achieving direct results in terms of policy developments in the apprenticeship system.

Group training is another example of where NCVER research has informed VET policy and direction. NCVER analysis of the impact of group training was fed into a national review, demonstrating to the entire VET sector that group training was having a positive impact on apprenticeship training around Australia. The usefulness of the student and graduate surveys has led to the development by NCVER of 'a do it yourself kit' to enable TAFE teachers and other VET trainers to survey their own clients in terms of the effectiveness of what they're doing.

Skill shortage work begun by the then federal minister David Kemp, recognised that NCVER had already done a great deal by 1998 in projecting the outlook for training in Australia's industries. In 1999 when the minister commenced an industry-led process of looking at skills shortages in a whole range of industry areas, NCVER was asked to come in and provide a factual and analytical basis to that work. This turned out to be very important at the time, since it identified that skill gaps did exist in some industries.

Work recently undertaken in Queensland on a new skills package for the VET sector drew extensively on the work of NCVER, from both the research and statistical areas, and of course it also drew on the extensive statistics produced by the Australian Bureau of Statistics (ABS). The point is that there was a strong research basis in this work, but it also involved community consultations.

In relation to the role and value of the impact of research on policy, it's not usually a one-to-one linear relationship between one research project and one consequent policy change. The process more resembles 'osmosis', where gradually the research findings and the analysis filter down to become part of the knowledge base of people working in the sector and people planning in the sector. In this context I would argue that undertaking a range of research projects in an area, rather than a single project, has a far more significant impact, especially when that work is coming from different angles and offering differing perspectives, in terms of conclusions. The more varied the research and its viewpoints, the more effective it is in terms of adding to the knowledge base and promoting debate.

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DISCUSSANT: PETER KEARNS, GLOBAL LEARNING SERVICES

In the context of the very impressive overview that Chris Robinson has given us of the development and the increased sophistication of VET research since the early days of NCVER, I'd like to pick up two issues that weren't very much evident in what Chris had to say but which I think we do need to consider. The question is: How do we achieve an optimum interaction between research policy and practice while developing systems that are truly and richly interactive and adaptive to changing circumstances?

In developing this point, I'll comment on two contexts, the community and regional context and secondly, the international context. Bearing in mind that the national strategy that Chris referred to is directed at VET serving employers, individuals and communities, it is however in the context of communities where we encounter the issue of the enormous diversity that exists in communities across Australia. How therefore can VET be effective in that context? Much VET policy has been developed according to national and state priorities. Rarely have we got down to the level of communities and considered the myriad of influences that affect outcomes in communities. By influences in the community I mean the culture, the history, the heritage, the industry base and so on. And if we are concerned with the role of research and with outcomes, then I think we have to 'grapple' with what happens in communities.

In approaching this, I'd like to leave with you some findings from the Organisation for Economic Co-operation and Development (OECD) in relation to communities. This is work that was done on regional competitiveness and skills. The OECD saw three factors that were important in that context: firstly, the region as an area for dialogue and cooperation; secondly, the region as an area for policy integration; and thirdly, the region as an area for negotiation.

When you look at regions across Australia, as we have been doing recently in some research, you see enormous diversity in the extent to which these conditions operate and you see great barriers to these conditions; for example, competition policy and the nature of funding and how these impact on collaborative practices in regions and in communities.

I would add the region to the OECD list as an area for innovation and for building a learning culture, both of which I consider to be important, particularly in the context of the realities of global competition. Policy integration of course is an important area, and the achievement of 'joined up' policies—the extent to which what happens in education connects with what happens in health and in welfare and so on—is crucial. And it's largely at the community and regional levels where these different spheres have to come together. In this context therefore should VET research be far more concerned with what happens at these levels?

The second context, the international context, is important for a number of reasons: firstly, as a source of new ideas as a stimulus to innovation in a world of constant change. I wonder how well known in Australia are interesting and important developments in other countries and how much impact they have on policy; for example, the initiatives in Canada at the present time with the new Canadian Council on Learning and its work on a composite learning index. This has been applied to communities right across Canada, and the range of development in those communities in terms of learning capability is evident as a base for benchmarking and for improving performance. Also from Canada is the work being done on the status of learning. So these developments and initiatives in other countries—our economic competitors—are in a sense setting benchmarks for Australia that we need to be aware of. The second reason why we need to be concerned, perhaps more concerned with the international context, is that it's a framework for understanding the competitive pressures that Australian industry is subject to.

A recent and hard-edged report from the New Commission on the Skills of the American Workforce, called *Tough choices or tough times*, is very much concerned with the changing global

environment currently confronting American industry. The report highlights the rise in the numbers of well-educated, highly skilled people in countries like China and India, and the consequent temptation faced by American industry to export jobs off shore. The commission estimated that 16% of jobs were at risk and vulnerable. This is obviously an enormous proportion of the American workforce and, if combined with all the jobs at risk because of automation, then a very serious challenge is presented.

No Australian research or policy documents at this time are producing similar, very frank assessments of the realities of the global and technological context in which Australian industry operates; hence, the challenge for preserving jobs. The implications are that we must raise the skill level of the Australian workforce and build a high-skill equilibrium with the capacity in the workforce to be creative and innovative. However, there are enormous barriers to be overcome in tackling this challenge—the low levels of literacy in the adult population in much of our workforce, the cultural attitudes in communities and much of industry towards learning, and the limited extent of development of lifelong learning policies in Australia.

I'd like to return to what OECD had to say and to suggest 'the region' as areas for dialogue, cooperation, policy integration, negotiation and as arenas for innovation and for building a learning culture.

In terms of the role of research, I see it as a lighthouse illuminating the sky, ocean and land, or if you like, past, present and future, with a flashing beam. This is an important role. I'd then like to suggest that we think in terms of a quadrant in which the four parts would be: looking in; looking out; looking back; looking forward. I think it's true to say that much VET research has been in the 'looking in' quadrant. It's been research that's concerned about the nuts and bolts and features and outcomes of the system. However, if the sector were to adopt an outward-looking perspective, then the sorts of research areas chosen might include the implications of demographic change, the ageing of the population, the implications of globalisation, and so on.

Chris gave us an excellent overview of past events (my looking-back quadrant) but now, looking forward, the question is—have we got the balance right? Is the balance in research appropriate in those areas? Do we need to re-think the current VET paradigm and work towards one relevant to the twenty-first century context and the challenges confronting industry in Australian society? My answer is yes. This is also the conclusion of the UNESCO second international congress on VET, the joint UNESCO–ILO² recommendation on Technical and Vocational Education for the twenty-first century, the UNEVOC³ International Experts meeting in 2004 on TVET and Sustainable Development and the recent UNEVOC discussion paper, 'Orienting technical and vocational education and training for sustainable development', as well as the work of OECD over more than a decade.

In re-thinking the VET paradigm for the twenty-first century context of VET, we should have regard to a recent conclusion from the report, *A well-skilled future*: that the demand for VET skills is likely to evolve in two ways—towards higher-level qualifications and towards more interactive and cognitive skills rather than motor skills. The pedagogical implications of this demand serious consideration.

So if I may conclude with a sentence from the recent UNEVOC discussion paper, 'Orienting technical and vocational education and training for sustainable development':

Unfortunately TVET in many countries remains locked in the role of being a supplier of skilled labour to industry and it's therefore unable to respond effectively to the needs of the emerging information age.

² ILO = International Labour Organization.

³ UNEVOC = International Centre for Technical and Vocational Education and Training.

And I would add to that the needs of communities for sustainable development, so what can research do? I'll leave that question with you.

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Developing and sustaining a VET research capacity

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Introduction

Quality research has considerable potential to improve policy and practice in vocational education and training (VET). The 1992 report *No small change* demonstrated this potential by providing the evidence base needed to generate greater interest and commitment to research in the sector. Additional resources encouraged the development of the critical mass of university-based researchers required to sustain a strong program of research focused on national VET priorities. Furthermore, the national VET research competitive grants programs managed by the National Centre for Vocational Education Research have supported a broader community of researchers, built the stock of VET knowledge and greatly enhanced the status of Australian VET research. However, this research capacity is now under some threat. There are thinning numbers in university centres and the population of senior researchers is ‘greying’. Research grants for university researchers are more generous outside the sector, while for researchers within the training system, research has been largely redirected to support quality and compliance. To sustain and build VET research capacity, the entire VET research community will need to find ways to attract and nurture new and emerging researchers into the field. Individual researchers and research organisations will also need to work much harder at raising the profile and value of VET research.

Looking back: The emergence of a VET research community

No small change: Providing the foundation

In 1992, the Vocational Education, Employment and Training Advisory Committee commissioned report *No small change: Proposals for a research and development strategy for vocational education and training in Australia* (McDonald et al. 1992) found that research on the VET sector was fragmented, poorly focused, limited in its critique of policies and programs and not fully utilised by those who could best benefit from the outcomes of the research focus.

In this seminal report, McDonald and his colleagues highlighted the major weakness in the existing research environment and offered a raft of recommendations designed to strengthen the role of research and researchers in supporting the training reform. First and foremost, they identified the need for a national research strategy, underpinned by a set of principles relating to priorities and funding, as well as the organisation and utilisation of research and development. *No small change* argued for a more strategic approach to research and emphasised the importance of focusing on areas of high priority to the sector, on improving the quality and quantity of research and enhancing the means of its dissemination. For the authors, the reasoning behind their recommendations was quite clear:

A stronger research effort will benefit the sector by providing a better information base, critical analysis and accountability, improved cost effectiveness, varied perspectives, a better

understanding of education and training processes and a higher profile for vocational education and training. (McDonald et al., p.v)

At the same time, McDonald et al. identified a number of requirements that were vital if VET research was to achieve any of the agreed goals. In the first instance, research needed to draw on the varying perspectives of research, institutions and other key stakeholders directly involved in vocational education and training. Equally important were the forging of closer links between researchers, policy-makers and practitioners and the encouragement of university researchers from different disciplines and fields to carry out research in the sector. Greater collaboration, particularly at the local level, between industry, TAFE and university researchers was also desirable, as was the allocation of resources to achieve a 'critical mass' of researchers and research projects in areas of high priority.

Training was seen as a key strategy in cultivating this 'critical mass' and McDonald et al. proposed a number of approaches. These included, among other things, specially developed postgraduate courses for VET practitioners, opportunities for apprenticeships with experienced university researchers, scholarships to undertake relevant postgraduate programs of study and university–practitioner collaboration in action research to improve the quality of the research and increase its uptake in day-to-day vocational education and training practice.

Thus, greater collaboration and training were seen to be critical for the development of a community of researchers capable of providing the evidence base required to support the national training reform agenda. But, in proposing strategies and initiatives to increase the effectiveness of research dissemination, McDonald et al. made an important recommendation that was later to have a significant impact on developing the 'critical mass' that they were seeking. They noted:

One step that would greatly improve networking ... is the establishment of a single association of vocational educators, trainers and researchers. This could be achieved by the broadening of an existing network ... or starting a new association (p.72).

The ANTA Research Advisory Council

In response to the recommendations of *No small change*, the ANTA Research Advisory Council (ANTARAC) was established in 1993. During the period 1994–96, the council managed the national program of VET research. As well as identifying research priorities, funding was provided for the establishment of key research centres. This money was directed to the Centre for the Economics of Education and Training (Monash University and the Australian Council for Educational Research) and the Research Centre for Vocational Education and Training (University of Technology, Sydney) and for research partners—the Centre for Post-compulsory Education and Training Research (University of Melbourne and the Royal Melbourne Institute of Technology) and the Centre for Research into Learning and Work (University of Tasmania). Each of these centres put together comprehensive programs of research and afforded the essential focus for an aggregation of researchers in these universities to work together on many of the key priority areas for the government's training reform agenda.

The ANTA Research Advisory Council also funded research projects, scholarships and innovative training activities. These activities, together with centre and research partner funding, proved to be critical to the building of research capability in the sector and to the development of the VET research community in Australia. There was, however, only limited networking between these centres and others engaged in VET research in the sector, particularly those focusing on research into VET policy and practice in state-based vocational education and training agencies, TAFE colleges or in industry. It was with the arrival of the Australian Vocational Education and Training Research Association (AVETRA) that the extent and potential of this broader research community came to be better understood.

A single association of vocational educators and researchers

The Australian Vocational Education and Training Research Association was established in 1997 with an initial grant from ANTA Research Advisory Council of \$10 000 and additional support from the National Centre for Vocational Education Research. Flagged as Australia's only national, independent association of researchers in vocational education and training, its membership is open to any individual who has an interest in VET research.

The goals of the Australian Vocational Education and Training Research Association are to:

- ✧ further the contribution of VET research to the development of Australian VET policy
- ✧ independently review VET research priorities
- ✧ promote independent and significant research in VET
- ✧ raise the profile of VET research in the academic and training communities
- ✧ promote training in research methods for those working in or with the VET sector
- ✧ provide platforms for the dissemination of research findings (AVETRA website, <<http://www.avetra.org.au/about/index.shtml>>).

In the ten years of its existence, the organisation has maintained a steady membership of around 200, although the number of active members is somewhat less than this figure. But it is the make-up of the association's membership that best reflects the changing nature of research in vocational education and training. Members include not only university-based researchers but also practitioner—researchers and practitioners from public, private and enterprise registered training organisations; training managers from major corporations; VET policy-makers and researchers from state and territory-based agencies; industry skills council representatives; and consultants. Such an array suggests that the association has been able to achieve its goal of raising the profile of VET research across the sector, a situation that has been made possible through successful annual conferences and state-based October VET events across the country.

While capacity building has been a long-standing imperative for the association, such activities require commitment from the membership and the broader VET community—policy-makers, funders and researchers alike.

NCVER: Raising the profile, making the connections

Since 1997, NCVER has played a significant role in building Australia's VET research capacity by contributing to 'the growth of an accessible stock of knowledge and research on vocational education and training' and 'the human capacity to undertake and use VET research' (KPA Consulting & Phillips Curran 2003, p.5).

Managing knowledge, sharing knowledge

NCVER's vision is 'for policy and practice in vocational education and training to be based on sound evidence' (NCVER 2007, p.2). In line with this vision, the organisation manages the national competitive grants program, undertakes strategic in-house research and collects and analyses statistics and survey data. The outcomes of these activities are made freely available to government agencies, training providers, peak industry bodies, enterprises and individuals. National and international sources and resources are also available via the world-class research database, VOCED.

Such a vast collection of knowledge, most of which is readily accessible and down-loadable is an invaluable resource for VET researchers, students of vocational education and training, as well as practitioners, planners and managers in the field. This is particularly true when clusters of projects are generated around themes which are of critical interest to specific stakeholder groups. Good examples of these are the collections of research around return on investment in training, generic

skills, workplace learning, learning styles, flexible learning and literacy and numeracy activity in the VET sector. The power of this themed approach is that the accumulation of knowledge around a topic offers diverse and sometimes multi-layered perspectives which are attractive to those who want answers to the problems they might be facing in their day-to-day work.

The bodies of work produced by the two NCVER-managed consortium research programs have similar potential. The outcomes of 'A well-skilled future: tailoring VET to the emerging labour market' should provide policy-makers, peak industry bodies, training providers and employers with a sound foundation for policy development, planning and targeted training. For training providers and policy-makers, evidence from 'Supporting VET providers in building capability for the future' should support decision-making about many of the critical workforce issues currently facing registered training organisations across the sector.

Utilisation of research, however, is very much about changing mindsets, and ease of access to research findings is a crucial factor in uptake.

Dissemination, brokerage and support

In writing about how educational research can best make an impact on educators, Figgis et al. (2000, p.366) suggest that:

... research has to be propelled out of its abstract conceptual space and into an arena where educators [and policy makers] can engage with it and decide if and how it will be useful to them.

For the last decade, NCVER has used multiple strategies to bring research into the many arenas where potential end-users reside. Acknowledging the diverse needs of the sector, publications like *Research messages*, *Insight* and *At a glance* are designed to provide key information in summary form, while the NCVER's website (<www.ncver.edu.au>) allows electronic access to full research reports and the range of summarised information.

In addition, NCVER conducts state-based forums on key priority areas and brokers research findings to targeted stakeholder forums and briefing sessions to ensure connections are made with those who can best use the outcomes. Identified by Robinson (1999, p.14) as 'a core and critical priority for NCVER', this brokerage role continues to be a paramount activity in building research capacity in the sector.

Of equal importance to emerging researchers is the annual NCVER National VET Research Conference. For many years this conference has been the stepping-off point for novice VET researchers, particularly postgraduate students and practitioner-researchers. Now in its sixteenth year, this 'no frills' forum offers the opportunity to make connections, test ideas, present practice-based action research, trial research methods and tap into the wisdom of more experienced researchers in an open and low-key environment.

The extent to which NCVER has engaged in capacity-building for the VET research community is best summed up in the following statement from the Australian Vocational Education and Training Research Association submission to the 2006 review of NCVER's research and statistical services:

NCVER has supported and promoted the activities of AVETRA in a positive and meaningful way through publications, statements and the willingness of NCVER staff to engage with and support VET research and VET researchers

(Australian Vocational Education and Training Research Association 2006, p.3).

Building and sustaining research capacity: The challenges

Clearly great headway has been made in VET research since the days of *No small change*, with more dollars being dedicated to the activity and more research being undertaken across a range of priority areas for the sector. But is this effort sustainable? A close look at the state of the community of

VET researchers and the environment in which it operates would suggest continuity and sustainability are an issue.

The community of VET researchers

Given the diverse nature of vocational education and training, it is difficult to ascertain with any degree of accuracy the numbers of researchers working in the sector. It would be appropriate to assume that the largest proportion is located in universities, with a smaller number in TAFE institutes and NCVER itself. An unknown number are working as consultants, or in state and territory training authorities, government departments and industry.

In the period 1997 to 2002, 218 projects were funded through the national VET research competitive grants program; 53% were conducted by university-based researchers, 27% by consultants, 11% by TAFE-based researchers and 10% by researchers in government departments and others. Gibb (2003 unpublished) estimated that among the 218 projects, approximately 10% were conducted by principal researchers 40 years of age or younger, while approximately 43% were carried out by principal researchers over 50 years of age. Gibb noted that reputation and experience required time to establish, and therefore it was unsurprising to find such a high percentage of principal researchers in the older age groups.

From 2001 to 2005, a total of 226 researchers conducted 186 projects under the national VET research competitive grants program. Fewer projects were undertaken by researchers in TAFE and government departments; however, 23% were done by consultants and 69% by university researchers, highlighting the dependence that the sector has on higher education for research input. As in previous years, the majority of principal researchers were probably above 50 years of age.

The ‘greying’ of the VET research community and the subsequent erosion of critical mass, however, is not the only issue impacting negatively upon the maintenance of viable numbers in VET research. Attracting new or emerging researchers to the field and retaining the ones already there have become key issues for funding bodies, research centres and the Australian Vocational Education and Training Research Association alike. Opportunities for mentoring appear to be quite limited outside postgraduate programs, as are training programs for practitioners working in the field.

Without the introduction of new people into the research community to replace those who are leaving, together with targeted training and the ongoing support of highly experienced mentors, the VET research community would seem to be in a highly vulnerable position. Sustaining Australia’s VET research capacity under these circumstances will require considerable commitment of time, energy and resources from key players in the sector.

Research environment: Infrastructure and culture

NCVER lists 20 research centres on its links page—the majority of which reside in universities. The amount of VET research these centres undertake, as would be expected, is dictated by the availability of funding. Currently there is insufficient funding available through most National Vocational Education and Training Research and Evaluation projects to sustain even the smallest of these centres. As a consequence, centre directors must identify alternative sources of research funding to meet internal university financial targets and ensure the ongoing survival of their centres. Grants from sources beyond those in vocational education and training not only offer opportunities to build and sustain research capacity, they promote the redirection of research interest and effort elsewhere. As an outcome, the critical mass of researchers focusing on VET no longer really exists within the majority of these university centres, and any opportunities for the development of Research Quality Framework-promoted research concentrations specifically directed at exploring policy or practice in the sector are likely to be few, if any.

Within the sector itself, a similar process of diminution and redirection of effort has been in evidence in TAFE systems for a considerable time. Research within training providers and state and territory training authorities is largely directed at fulfilling business and political imperatives and is

conducted to support quality systems, compliance requirements, planning and market research. In parallel with these changes, a lack of resources has diminished the amount of teaching and learning-focused practitioner action research occurring across the sector.

These difficulties associated with developing capacity are exacerbated by a culture in vocational education and training in which research is not generally valued. Practitioners are only rarely encouraged to dedicate time to reflecting on their practice or the research that might impact upon it in a systematic way. While *Reframing the Future*, with its Goal 5, *Applying information and research*, goes some way to addressing this issue, its reach and impact are not broad-ranging.

Despite the best efforts of NCVER, VET research organisations and individual researchers, a similar situation exists with key decision-makers in training providers and those in organisations overseeing the vocational education and training system (Taylor 1999; KPA Consulting & Phillips Curran 2003; Department of Education, Science and Training 2006). While debates continue over quality, utility and timeliness, this lack of identity or visibility for research means that it may not be considered in the formulation of policy. Any disconnection between research and policy-makers limits the potential that research might have to broaden existing perspectives and explore alternative approaches. And where effective connections have been made, the constant whirlpool of change that exists in the sector means 'the connections and networks needed for the transfer of research to policy have been increasingly difficult to sustain' (Kell 2005, p.5).

Looking forward: The future of VET research in Australia

To ensure that research capacity is further developed and sustained, different strategies will need to be developed to address the challenges facing VET research. This will require the combined energies of NCVER, the Australian Vocational Education and Training Research Association and the research community as a whole. Needless to say, such strategies will need sympathetic policy and funding support.

NCVER: More of the same and then some

As the primary VET research organisation in Australia, NCVER's role in developing and sustaining VET research capacity is a significant one. Importantly, many of the strategies for building capacity are already in place. These include broad-ranging consultations, close communication with key stakeholders, quality dissemination of research using a range of media and the conduct of activities for sharing and applying research outcomes, all of which raise the profile of VET and confirm the value of research to the sector.

NCVER also has the capacity, as a research centre conducting research in its own right, to attract new researchers to the organisation, quickly building their understanding and experience of the sector through mentoring and training. But it is the pool of experienced researchers within NCVER that is perhaps the greatest asset to the research community at a time when more and more researchers are moving out of VET research. Such a resource could be used for building capacity, particularly in mentoring novice researchers, providing technical advice, conducting workshops on research methods and supporting research networks in key priority areas. Another option would be to offer opportunities for inexperienced researchers to undertake a brief 'cadetship' or shadow a senior researcher in the organisation. The advantage of these strategies for NCVER would be to retain closer connection with practitioners and researchers in the sector.

In relation to the management of the National Vocational Education and Training Research and Evaluation program, NCVER has already established the value of collaborative research activities which utilise the expertise and differing perspectives of groups of researchers drawn from diverse organisations. With reduced numbers of VET researchers in universities, it would seem most appropriate to continue the concept of networked research activities, particularly around priority areas. Linkages between researchers from different locations, organisations, perspectives and

disciplines may continue to form through naturally occurring relationships. However, it may also be appropriate for NCVER to encourage researchers with specific priority area expertise to register their interest as a network for particular projects or group projects. Such an approach may mean a proportion of each round of funding being dedicated to commissioned work undertaken by networks with preferred provider status in particular areas. The challenge will always be to provide research networks with the stability and flexibility they need to sustain their research effort. This requires longer-term funding and continued support and encouragement for research networks.

It is also acknowledged that participation in National Vocational Education and Training Research and Evaluation projects must be broadened to include many more researchers than the 'experienced and respected' mentioned in the recent review of NCVER's research and statistical services (Department of Education, Science and Training 2006, p.12). While scholarships, traineeships and fellowships might be difficult to resource, strategies that encourage researchers to involve new researchers in projects are a step in the right direction. A potentially more powerful approach would be to *insist* that this occurs in the majority of National Vocational Education and Training Research and Evaluation projects.

The Australian Vocational Education and Training Research Association: Building commitment to build community

The Australian Vocational Education and Training Research Association, as an independent association, has an opportunity to play a key role in developing Australia's VET research capacity by addressing some of the issues of sustainability. In fact, the association's very survival may well be dependent upon its doing so. With annual conferences, state and territory-based October VET activities, the journal and newsletters, the association is well placed to raise the profile of VET research. It is also in the position to actively recruit new and potential researchers, facilitate connections between leading and emerging researchers, encourage knowledge-sharing, sponsor programs to build the research capacity of university students and VET practitioners, and conduct activities for sharing and applying research outcomes.

In addition, members of the association are well placed to collect information about postgraduate courses and research skills training across Australia's universities and to build the skills and confidence of novice researchers through internal individual mentoring, training and technical support.

The research community as a whole: Communicating the value of research

Research capability building can be fostered or discouraged by shifts in prevailing policy. Policy can either facilitate or deter collaboration between researchers. It can provide the environment in which developmental opportunities for researchers can flourish, or it can threaten the sustainability of supportive structures like research centres, research networks and even professional associations. It is imperative, therefore, that the research community as a whole focuses on communicating the importance of VET research to the sector by:

- ✧ building linkages with key policy-makers at local, state and federal levels
- ✧ developing the political skills to navigate a place for research evidence in policy formulation, program implementation and review
- ✧ developing strategic partnerships with VET organisations like the TAFE Development Centre, the Australian Council for Private Education and Training, and TAFE Directors Australia
- ✧ strengthening grassroots connections with potential end-users of research, particularly in the realm of practice.

By restating the importance of quality research to policy and practice in the sector, it is more likely that a case can be made for sustained and growing investment in the activity.

Conclusion

In the aftermath of *No small change*, there was a considerable growth in interest and action in VET research in Australia. With an injection of additional funding, a national strategy, a thriving NCVER, a strong and independent association of researchers and 20 research centres, Australia's VET research capacity was well developed. In recent years, the critical mass of university researchers drawn together by ANTA's key centres has diminished considerably because of natural attrition and the attractiveness of other funding sources and different research directions. For NCVER, the Australian Vocational Education and Training Research Association, research centres and individual researchers, a major challenge is now to attract and nurture new researchers. Another is to continue to build the vital connections with those who can best use the results of the research endeavour—policy-makers and practitioners. As with *No small change*, the time is now right to re-emphasise the considerable potential that research has for quality policy and practice in the VET sector.

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Berwyn Clayton's paper on developing and sustaining a VET research capacity raises a number of interesting issues for the future of VET research in Australia. As Berwyn makes clear, thanks largely to the funding made available through the Australian National Training Authority and latterly, the Department of Education, Science and Training, since the early 1990s, VET research has flourished in Australia to the point where it ranks as a world-class research activity. Few, if any, other countries have developed such a focused and consistently funded research program in VET. But it is in danger of diminishing rapidly for the reasons that Berwyn has outlined in her paper. Essentially VET research has hit a classic skills shortage situation—a rapidly ageing workforce and not enough younger researchers coming through to take the place of retiring researchers. However, as Berwyn acknowledges in her paper, in the case of university-based VET researchers, who comprise the majority of researchers in this area, the situation is exacerbated by recent developments in national research policy and its impact on university research structures. The question is what to do about this. I want to pick up on three themes which arise from Berwyn's paper and which may provide some possible responses to the VET research skills shortage.

The first is networking. Berwyn is quite right to highlight the importance of networking amongst VET researchers as a means of boosting capacity. When the research community is shrinking, it makes sense for the remaining researchers to work more closely and purposively together. Berwyn referred to the research centres listed on the NCVER website that carry out VET research. Ten years ago the NCVER counted some 20 centres dedicated to VET research throughout Australia. These had largely been brought into being by the increased funding from the mid-1990s. Now most of these dedicated centres have disappeared with only one or two honourable exceptions. Today's centres undertake VET research usually as a sideline to their mainstream research activities and foci. Research centres are a good way to develop research capacity as they encourage younger researchers and sponsor research students. But the traditional notion of the research centre may be problematic in that it can be exclusive to a particular place and rarely include all the best researchers in a field. In a sparsely populated research community such as the VET research community, too many centres can simply spread the talent too thinly, reducing rather than enhancing capacity. One way to counter this effect is to think of centres as networks of researchers rather than as places where they work. The example of the Economic and Social Research Council's Centre on Skills, Knowledge and Organisational Performance (SKOPE) in the United Kingdom is useful here. SKOPE has had a far-reaching influence on thinking and policy-making in VET not only in the United Kingdom but around the world. It has achieved this by linking all the best researchers in the United Kingdom, Europe and in the United States in a networked centre. NCVER has had some success recently with research consortia, which could be seen as precursors of fully networked research centres. I think there is scope (pardon the pun) for us to think more carefully about more permanently funded networked VET research centres in Australia along the lines of the SKOPE centre.

The second point is leverage. Berwyn rightly observed that university-based researchers are under pressure to increase their research funding from all sources. This can be a major distraction from VET research as researchers seek Australian Research Council and other funding sources to maintain their position within universities. But the search for diversity in research funding can also provide opportunities for VET research. Australian Research Council linkage grants provide a good example of leveraging available research funding to advance VET research. Many VET institutions can be partners on linkage grant applications—state training authorities, skills councils, employer bodies, unions—even the NCVER itself has had some involvement. My sense is that we could make more of this type of leveraged funding if more VET researchers were encouraged to take the linkage route. Perhaps this might be a role for NCVER as keeper of the national research priorities in VET—to work with VET researchers to produce research proposals with suitable partners and which have a high probability of gaining Australian Research Council funding. But leveraging is not

confined to Australian Research Council schemes. The bodies that want more research could, over time, perhaps work more closely together to fund research in VET that would push the envelope of research funding past the \$2–3 m of annual National Vocational Education and Training Research and Evaluation program grants into something much larger and more strategic.

Finally, internationalisation. Just as it has been a traditional response for Australia to look overseas during times of skills shortages, perhaps we could look internationally to increase our domestic VET research capacity. VET has clearly become increasingly internationalised in recent years. But this is not just about the export of education. The problems that we face with skills and training in Australia are very similar to those experienced in other developed countries. We often look overseas to learn from the experiences of other countries, and other countries look to Australia. There is a powerful two-way exchange of ideas for improving VET policy and practice. But our research tends to be very national in scope. By comparison, VET research in Europe is highly internationalised, as one might expect through the European Union, and this has led to the creation of international networks of VET researchers working on larger, high-quality research programs. Australia could benefit by becoming more integrated into these international networks.

International funding is now becoming more available for Australian VET researchers. The Australian Research Council has joint programs with both the United Kingdom Economic and Social Research Council and with the European Union. Australian researchers can participate in well-funded research programs such as the European Union framework program, as third country partners, and are also accessing American National Academy of Science grants in collaboration with United States researchers. International cooperation of this kind can both enrich VET research in Australia, bringing new perspectives to complex problems, and increase the pool of VET research expertise upon which we can draw.

I want to thank Berwyn for an interesting and stimulating paper and I hope my comments might help us move towards some possible solutions to the VET research skills shortage.

A patchwork quilt: The development of national training statistics

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Introduction

Australia has a long history of gathering statistics on education. In common with most other statistics of the pre- and early Federation period, the primary source was administrative records maintained by individual states, which were then aggregated to report national statistics. What is distinctive about education and training statistics—viewed across schools and higher education, as well as vocational education and training (VET)—is how heavily reliant they still are on administrative collections. In many other domains of social and economic life, administrative collections have yielded to household and business surveys and the five-yearly census, most of these conducted by the Australian Bureau of Statistics (ABS).

The ABS runs two major household surveys on education and training. The Survey of Education and Training, first conducted in 1989, then each four years since, and the annual Survey of Education and Work are extremely valuable and rich data sources for understanding patterns of participation (and non-participation) and educational attainment, and the relation of both to measures such as employment and earnings. The census and various other specialised surveys—those relating to disability and adult literacy, for example—also contain much valuable information.

However, the ABS is unable through its surveys to meet the information needs of the VET sector—more so than any other sector of education. One example will illustrate the point. Educational attainment, as measured by the ABS, is based on qualifications that have been completed; yet the norm in the VET sector is for students to complete only part-qualifications. ABS measures of attainment in any given period, therefore, will significantly understate the true quantum of skill development that has taken place. Even if sample surveys *were* capable of getting to grips with the nuance of the sector, it remains the case that the information demands extend well beyond the acceptable error limits of even large sample sizes. That is, there is considerable demand for small area and small group statistics. A typical example would be the number of Indigenous students enrolled at certificate II level for each state and territory. Only administrative collections are able to meet such narrowly defined data requests.

The difficulty of constructing or designing an administrative collection that can adequately cater for both nuance and fine detail should not be underestimated. Indeed, the development of national training statistics is a tale that can broadly be characterised as one of satisfactorily resolving the tension between, on the one hand, a national desire for comparable (across time and space) statistics on the activities of technical and further education (TAFE) institutes and, on the other, the fragmented, inconsistent and incomplete records maintained by TAFE authorities. It was a long time in resolution and, as we will go on to argue, the work is not fully done. Grant and Fisher (1994) provide a detailed account of the slow development up to 1994, impetus coming from

national developments book-ended by the report of the Kangan Committee in 1973 and the national training reform agenda of the early 1990s, but interspersed by long periods of lull, with national committees unable to reach agreement on matters such as purpose and cost.

It is not our intention to pick up where Grant and Fisher left off and recount the history of those developments since the early 1990s, although some history is needed to understand why things have developed as they have. Instead, we offer two observations, observations which will provide the basis for the remainder of this paper. First, the considerable progress made over the last decade or so can largely be attributed to the design of statistical standards which accommodate a range of interests—national, jurisdictional and providers themselves—and through governance arrangements which allow for these to evolve and adapt over time to changing and emerging information requirements. Second, while the VET sector might be said to be ‘moderately well-served statistically’ (ABS & NCVER 2002), and to be of good standing internationally, there are a number of embedded flaws in the underlying design which limit the utility of the statistics in meeting public accountability and monitoring requirements and for undertaking applied policy analysis and evaluation. Some future directions are suggested in our conclusion.

Why do we have national training statistics?

To meet the needs of TAFE administrators and state training authorities a range of state-based data collection systems had evolved over time. These systems were non-comparable in many respects, which hampered or prevented national training statistics being produced.

The rationale for stitching these various systems together arose as part of the push to create a national VET system out of the existing federated system. At much the same time as the Australian National Training Authority (ANTA) was established in 1992, the Australian Government made its funding conditional on data collection, reporting and accountability arrangements. These arrangements, agreed to by states, were much stronger than had existed previously and led directly to the national collections of VET provider and financial information, managed by NCVER under the direction of the National Training Statistics Committee and its predecessors. It was this development, more than any other, which broke the impasse noted by Grant and Fisher.

It is true that new funding agreements did not in themselves create an imperative for national data collection arrangements, as reporting requirements could have been met through specific arrangements with each state. However, the legislation which established ANTA included a statutory obligation to develop key performance measures and report these annually to Parliament. The requirement to report measures, which were consistent and comparable across states and over time, greatly increased the need for national training statistics.⁴

Further pressure for national training statistics capable of meeting a range of information needs came from various national strategies and national priorities for VET. Strategies and priorities relating, for example, to young people (including the 1991 Finn targets), Indigenous Australians, students with a disability, students in rural and remote areas, recognition of prior learning, the extension of apprenticeships and traineeships to existing and older workers and so on, have all required national data which can be disaggregated to provide statistics on a specific area of interest. This is one of the key reasons for having unit-record data collections rather than summary returns, as the latter permits no further or alternative disaggregation.

The national collection of data on (as they are now called) Australian Apprenticeships also required the cooperation of both the Australian and state governments because the former is responsible for

⁴ In the early years of the national data collections the raw data were often not of sufficient quality for reliable reporting of the key performance measures. NCVER played a key role as an adviser and data adjuster to improve the reliability of what was reported overseen by the National Advisory Committee on Vocational Education and Training Statistics (NACVETS).

incentives paid to employers, while state governments have legal responsibility for the training contract and provide funding for the formal part of the training program. In 1997 ministers agreed that the national apprenticeship and traineeship statistics produced by NCVER would be the official statistics for reporting and accountability purposes. Previously some states had reported raw figures which did not take account of notification lags or administrative artefacts.

The original driver of national data collection arrangements, namely, the information that is needed for monitoring and accountability, is relatively narrow, while that which is needed for reporting on key performance measures is somewhat broader, particularly those measures which relate to specific student groups. There is no question that the existence of this broader detail has had an 'upward spiral' effect. Among policy developers, researchers and other users, having some information generates an expectation for more, on a broader scope and at a greater level of detail.

ABS sources or new national collections?

Grant and Fisher (1994, p.175), writing of the 1980s, note that:

... little reliable assistance [on the VET sector] is gained from ABS statistics. Some of these latter deficiencies reflect ABS policy—leaving functional statistics to functional agencies—and some reflect the difficulties of collecting reliable data from such a diverse sector.

As we have shown, the initial motivation for collections was management and accountability, particularly relating to the funding agreements between the Australian Government and the states. However, a wide range of stakeholders now expect the detailed information which we have from the VET collections to be available routinely. The decision of Ministers in the early 1990s to require complete counts of unit-record data rather than statistical returns has proved particularly far-sighted. Not only did it allow detailed checking—even auditing—of the data, leading to quality improvements, but it increased immeasurably the utility of the collections at a relatively low marginal cost and in ways which are not usually possible with summary returns.

Among ABS collections, only the census supports the level of disaggregation that is possible with the national collections of VET provider data and Australian Apprenticeships data. In theory, the census could provide much of the finely nuanced detail that is needed for reporting performance measures, particularly those related to participation. However, the fact that this detailed information is only available once every lustrum, often with long delays before it is released, is a major practical barrier. A more serious barrier, which applies to all ABS collections and surveys, is that of reliably identifying VET providers and activity.

In the community, some institutions—schools, universities and TAFE—have a clear identity. Beyond that, identification of VET providers by individuals is imprecise. Few would be aware, for example, that the Australian Red Cross is one of the country's largest training providers, while many employees, including Australian Apprentices, would not be aware that training and assessment undertaken at their workplace is being provided by a TAFE institute or even their own employer if it is a registered training organisation. Also, while apprentices in traditional trades will be quite clear that they are doing an apprenticeship, those doing an Australian Apprenticeship in a non-traditional area may not identify it as anything more than paid employment.

Similar fuzziness exists with VET qualifications. Some recognised qualifications do have a clear identity, such as a senior secondary certificate, a bachelor degree, PhD or a trade certificate. However, a person being surveyed or responding to the census might not know whether their certificate or diploma is a qualification under the Australian Qualifications Framework (AQF) or an unrecognised certificate issued by an unregistered provider. The preponderance of jargon and acronyms in VET is also likely to be a source of confusion among respondents and therefore of errors in responding to questions.

The problems of accurate identification are compounded when it is considered that the respondent to most ABS surveys, including the census, is a responsible adult on behalf of individuals in a household.

While it was never practicable that the ABS could become the source of student activity data, it is worth reflecting on the two sample surveys instituted by the national VET system to meet its own requirements and collected by NCVER, rather than ABS.⁵ As with the administrative collections, their development has been very much driven by the requirement to report progress against key performance measures.

An annual survey of students exiting from the sector, the Student Outcomes Survey, has now been in place for over a decade. The survey is both a vehicle for monitoring students' assessment of the learning experience and also of their absorption into the labour market post-training. It is with sample surveys that the trade-off between fine detail and the cost of collection becomes most pointed. Various models have been tried, including at one stage a census of all exiting students, and have now settled down to a sequence where each two years sufficient numbers of students are surveyed to provide reliable results for each TAFE institute in the country, with intervening years based on a much smaller sample.

A survey of employers was first mounted in 1997. The ABS had itself conducted surveys of employers in relation to training practices and expenditure in 1993, 1996 and 1997 (these were brought together in 2001–02). The initial Survey of Employer Views began from a different premise. Rather than being a general survey on what employers thought of the adequacy of the offerings of the VET system, the initial survey was the corollary of the Student Outcomes Survey. It did this by, in effect, tracking the exiting students to their places of employment and asking their employers how satisfied they were with the skills of the student—a clear expression of who were the clients of the system.

Both surveys, it might reasonably be argued, are more akin to market research than to social statistics, and for this reason alone ABS might well have shied away from conducting them. There are other reasons also. The sample of students for the Student Outcomes Survey is drawn from the National VET Provider Collection, which made it practically easier for NCVER to mount the survey in its own right. The existence of a substantial market research industry, with many players, some quite large, also meant that it was practically possible to collect the data independently of ABS.

In 2005, the employer survey went through a substantial re-design to focus on employers' use of the VET system in equal measure to gathering their views upon it. The sample is also now a general one of employers rather than those who have recently hired VET graduates. In its current guise, therefore, the employer survey is now much closer in purpose and sample design to the ABS employer survey of training practices, a survey the ABS has no plans to repeat in the foreseeable future.

The importance of setting statistical standards

The development of national VET statistical collections necessitated agreed national standards. Historically, VET in Australia was state-based, with each jurisdiction pursuing its own priorities and approaches. In TAFE institutes, student record systems, enrolment information, rules, practices and procedures and software systems all varied, sometimes even within a state.

There are sound administrative reasons for all this variation and it is certainly not the job of a national data collection to impose some kind of uniformity—it must describe reality, not shape it. Agreed standards are needed to specify what information will be collected, the timing and

⁵ The very first TAFE Graduate Destination Survey, the predecessor of the Student Outcomes Survey, was managed by ABS but all subsequent surveys have been managed by NCVER.

frequency of collection, classifications to be applied to describe the information that is collected and data formats. This is the key function of the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS).

The enormous diversity of the VET system must be accommodated in a cost-effective way if the national data collections are to successfully meet the information needs of the sector. This diversity is not confined to administrative and structural characteristics. Individuals and employers use the system in widely varying ways. The national collection of TAFE enrolment information operating before 1994 assumed, in effect, that all learners in TAFE were enrolled in a course leading to a recognised qualification, whereas all the evidence since suggests that most learners enrol in subjects without completing or even intending to complete a qualification. Individuals of all ages and in all parts of the country access training, and the amount can vary from just a few hours in a year to hundreds of hours for students studying full-time at the higher AQF levels. Mobile trainers and training facilities are a reality, particularly in remote areas.

Standards such as the Australian Vocational Education and Training Management Information Statistical Standard have an important practical function. The process of developing statistical standards forces stakeholders to identify and prioritise their information requirements and, because reliable information is never free, allows the cost and benefits to be assessed. The process of developing and maintaining collection arrangements and standards also promotes buy-in and ownership among stakeholders, an important and often under-appreciated aspect—without it, data collections rarely run smoothly and may even provoke considerable hostility if they are imposed without proper consultation and cooperative development.

It is noteworthy that the very title of the standard reflects a dual role—to serve the management information requirements of providers and of state training authorities and to serve the statistical requirements of national consistency. This dual role of the standard is both its strength and its weakness. It is a strength in that the standard reflects a workable compromise between its utility to those at the point where the data are generated and those who are seeking to use the final aggregated data for statistical purposes.

A challenge for national VET statistics has been how to accommodate the very many institutional changes that have taken place in the national training system. We have already noted that the learning programs which students undertake and the qualifications and statements of attainment they receive have become considerably more uniform across the country. By contrast, management, delivery and funding arrangements have become more diverse and fragmented, magnified by the increasing interest in the whole recognised training system rather than just the part that is publicly funded.

Protocols have been developed under the governance arrangements to allow changes to the Australian Vocational Education and Training Management Information Statistical Standard to be introduced. The debates over the merits of proposed changes to the standard reflect its origin in serving both management information requirements and statistical purposes. In general, the collection of new data fields has only been agreed to where it was strictly required for monitoring or accountability reasons. New data fields that might serve a particular policy interest but have no direct utility as management information are generally not supported. An example is the proposal to capture information on students' intentions at the time of enrolment, particularly whether they intend to complete a whole qualification or only subjects. It is also the case that, while as a principle the standard follows the lead of ABS in how data fields are classified, this is not adhered to where it may conflict with the management information requirement. An example is the classification on type of provider. ABS aims to distinguish between private businesses whose main activity is providing education and training services from other private businesses where education and training is a secondary activity (for example, a product supplier). The Australian Vocational Education and Training Management Information Statistical Standard makes no such distinction among private providers as, for accountability purposes, it is only the ownership of the provider (that is, public or private) which is of concern.

Embedded flaws in the design of the national administrative collections

The national collections of VET data represent a major achievement and provide the sector with a statistical information base which few other countries can boast. However, it would be naive to pretend that there are not flaws and limitations, most stemming from the choices made in the early stages of development but some from other sources.

A fundamental issue is defining VET without ambiguity, in a way that distinguishes it from other categories of learning. The first attempt at a definition might say that VET is learning that is intended to develop skills relevant in the workplace, including preparatory learning designed to articulate to such learning. But immediately there are problems because such a definition would include much of the learning that occurs in schools and universities. Although undesirable in a definition (Joseph 1906, p.98), it becomes necessary to include a sectoral restriction and exclude school and higher education activity. A further difficulty emerges when we attempt to establish a boundary between recreation, leisure and personal enrichment studies and vocational learning: clearly this boundary is fuzzy—is a cake-decorating course vocational or non-vocational?

There is no theoretical way of resolving these issues: instead, pragmatism has prevailed. Recognised training; that is, everything which comes under the Australian Quality Training Framework (AQTF), is relatively easy to deal with and now constitutes the majority of VET activity. It neatly excludes higher education and allows VET undertaken by school students to be separated from their other learning. However, determining whether non-AQTF activity is VET is more problematic. Providers in both the TAFE and non-TAFE sectors deliver programs in areas such as religious, cultural and foreign language studies, and determining the status of these for collection purposes can be difficult. In practice, the intention of the designers of the learning program is used. If the intention is to develop vocational skills, then the program is VET, otherwise it is not. It is worth noting that the intention of learners is not used here but in reality there will be classes where learners have a mix of vocational and non-vocational intentions. The pragmatic resolution of the issue of definition has proved to be workable but remains a limitation of the collections.

Another serious limitation is scope. Currently, the scope for the provider and financial collections is VET funded by state training authorities, including any fee-for-service delivery by TAFE institutes. However, a considerable amount of recognised VET is funded from other sources, both public and private, and delivered by non-TAFE providers. The consequences of not ‘knowing the full score’ have become of particular concern. Strategies to address this limitation are now being implemented, but reaching this point has taken many years of negotiation with stakeholders, particularly the states, which have generally shown only limited interest in the VET that they do not fund. Relatedly, there are major impediments to capturing management and statistical information on training funded by government agencies other than state training authorities.⁶

The choice of discrete, retrospective collections—administratively the easiest—in preference to a single national database that consolidates and updates information relating to each learner, together with other early decisions, has resulted in further problems and limitations. Within a single period there will be multiple counting of learners who undertake VET with more than one provider, delivery sector or state. Statistics on VET in Schools, much of which is delivered by TAFE institutes, are particularly affected by this issue. It is not possible to say for a given age cohort what is the total number of people who are involved in VET. For 15 to 19-year-olds, for example, we cannot separate out VET in Schools students from other VET students from apprentices and trainees.

Information about longer-term participation and attainment in VET is also extremely difficult to obtain, because of the absence of unique student identifiers. Some links have since been established, for example, between the provider and Australian Apprenticeship collections, and

⁶ Both the Australian Government and state governments are affected by this.

student and other key identifiers, such as course and subject codes, must now be consistent over time. Even so, Australia is still some distance off a learner-centred administrative system. By way of comparison, the New Zealand Qualifications Authority has been operating the national Record of Learning system successfully for several years (NCVER 2004). This is an archive of learners' achievements, with managed access for providers and learners and the capacity to issue qualifications and transcripts. It also captures learners' achievements in all recognised post-compulsory education and training, that is, upper secondary schooling, VET and higher education. It is an example of a system that provides both an important service and important statistical information without the limitations that derive from the sectoral divisions within Australian post-compulsory education and training.

Finally, various attempts to develop robust and meaningful units of measurement for VET have so far been unsuccessful. Counting learners—VET students and Australian Apprentices—is not sufficient because of the enormous variation in the type and amount of training undertaken. The public VET system continues to measure VET activity using annual hours—the total nominal hours for a year, where nominal hours are the time taken to deliver a given subject in a traditional delivery situation—but these measures are essentially a surrogate for funding. Annual hours have little comprehensible meaning outside the VET sector, and the nominal hours used for calculation provide an unrealistic measure when training is undertaken in a non-traditional delivery mode such as online or wholly in the workplace.

Conclusion: Where to next?

The overall conclusion to be drawn from an assessment of the development of national training statistics is that they are a patchwork quilt with, in places, all-too-evident seaming. The system works best of all in monitoring and accounting for purchasing arrangements between state training authorities and providers, and between the Australian Government and state governments in respect of funding agreements. It has also produced a time series of indicators which can be used to assess how well the system is performing against its objectives at a broad level.

It is a manufactured compromise, one which tends to favour the interests of the producers of vocational education and training (that is, the providers and the state training authorities) over the consumers (that is, individual students and employers) and the general public interest. Three examples illustrate the point.

First, there has been interest in some quarters in more finely grained performance indicators, right down to individual provider level. The rationale is that this would act as a competitive spur to individual providers to improve their quality, while also presenting consumers with more informed choices. At present, however, data protocols do not allow individual training providers to be identified in published reports.

Another illustration is that the time lag between events occurring and the statistical reporting of those events—up to 18 months in the case of student enrolments, and around six months for apprentices and trainees commencing or exiting from a contract of training—is greater than some stakeholders would prefer.

A final illustration is that, while the datasets have some application for secondary analysis, this is constrained by the inability to trace learners across collections and over time (and also by other factors, such as the high item non-response—far higher than would be tolerated in an ABS collection—on some important fields). This considerably limits the utility of the data for answering applied policy research questions and results in most researchers favouring the use of ABS confidentialised unit record files, despite the bluntness of the survey instruments.

These three areas are all points of contention in the ongoing development of national training statistics and are likely to be areas where some changes may occur in the future. There are also

some evident areas where changes in the delivery of vocational education and training will continue to create challenges in the collection and reporting of national training statistics.

The main area of a challenge lies in attempting to ensure that the collections are complete. Private training providers account for around a tenth of publicly funded student places and hours and also deliver a substantial but, as yet, unquantifiable amount of fee-for-service education and training. Private providers have a growing presence in both higher education and VET, delivering in niche areas, especially in the newly introduced qualifications of associate degrees and vocational graduate certificates and diplomas. To 'know the full score' will require extending the manufactured compromise (and the Australian Vocational Education and Training Management Information Statistical Standard) to encompass private providers. The lesson from the past is that data collected need to be consistent with the management information requirements of private providers.

A second challenge, already identified above, is associated with the difficulties in identifying the learning pathways of individual learners, where the delivery of education and training is fragmented across sectors, across different types of providers within the VET sector, and across a range of funding arrangements (especially as the Australian Government is now a direct purchaser of some VET delivery). All indications are that this fragmentation will continue. This will put pressure on both developing cross-sectoral arrangements and information technologies for matching records across different administrative collections.

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DISCUSSANT: MICHELE BRUNIGES,
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Mark and Brian touched on the topic of the patchwork nature of statistics and perhaps ‘the quilt’ has been stitched together from what existed and has probably been supplemented by a couple of additions as well.

It was a great pleasure for me to come here this afternoon and to reply to the topic of the development of national training statistics. I have a real passion for data and information and how they can be used to make improvements in communities. In responding to Mark and Brian, I want to take the opportunity to pose a number of questions. I recognise that it’s far easier to ask questions than it is to answer them, and it’s important to reflect on what’s been achieved.

The VET sector has come a long way along a data continuum—and a continuum of data that runs from ‘something that we can count’ through to ‘something that we can measure’. I draw that data distinction quite deliberately, and I’ll come to that a little later on. Chris Robinson’s paper noted the importance of research and statistics in VET policy. In 2005, the Australian Government, along with the states and territories, invested about \$5.2 billion in vocational education and training. With such a large investment, we need to know how this investment has made a difference. What have been the costs and the benefits attributable to the investment, and indeed what is the future opportunity cost of not having an evidence-based approach to policy formulation? Fundamental to this discussion is: what are the policy questions that we are trying to answer through our collection, collation and dissemination of VET statistical data?

If we look around at who’s collecting information on vocational education and training and bravely suggest that our operating context affords us a possibility of examining the current model, we seem to have lots of high-level statistics but, in terms of responding to local community needs, is the level of generality of the statistical information we have sufficient to respond to local needs? If we had the opportunity to design a national training and statistics collection, what indeed would it look like? How different would it be from the one that has been outlined today and what changes would we make, if any, and why would we do things differently?

Any data collection, given its retrospective nature, suggests that we can predict trends using past trends. This can sometimes be a challenge. I don’t think we give enough thought to the changes in our operating context, and I do have a different view about using statistics of the past to reflect the trends of the future.

We know that the Australian Bureau of Statistics (ABS) has played a role in the collection and dissemination of VET statistical data. I believe however that the level of detail of the data collected and reported is insufficient to help support key policy drivers, such as understanding skill shortages at a regional and local level. Data underpinning the VET sector provides an interesting model for education generally, and NCVER has taken a lead role in terms of providing a valuable information source. The school sector hasn’t had the luxury of having the equivalent of NCVER in terms of dealing with data, so in that context, I think the VET sector is one step ahead of the school sector.

Data from many sources inform the VET statistical model and, in the context in which the model operates, the boundaries are becoming more blurred between various education sectors. So many organisations are involved in the collection and reporting of education and training data that I believe now is the time to consider more than just a national approach or a national protocol; it is time for us to consider a more consolidated approach to the collection and holding of data. Would it come in the form of an agency and protocols to use the synergies described by Mark, to look at individuals and learning across their lifetime? I believe that we would be better positioned as a nation if we carefully identified what strategic information these statistical collections contain and how some of the information could be more effectively utilised. It seems to me that now is the time for such reflection.

I would like to consider gaps in the data. We are collecting a huge range of data but there still seem to be some critical pieces missing. One of the key areas relates to staffing profile. Without that information, making strategic decisions about planning the workforce of the future is much more difficult. Furthermore, almost all of the data and information that have been referred to today focus on publicly funded VET. I know from recent ABS data that the publicly funded component of VET equates to around 65% of the total VET activity.

What's happening with the rest of the market? Addressing skills shortages with an incomplete picture means that we're less likely to succeed as a community. Peter Kearns touched on globalisation and that's a very important aspect. The changing nature of educational services delivery resulting from the significant increase in the use of technology, coupled with increasing globalisation, means that that we need to respond to the internationalisation of VET. The Australian VET system is widely regarded, and particularly by our Asian neighbours, as world class. The information we hold about the provision of Australian VET in other countries is very thin and leaves us further behind in understanding the overall VET market and where there are possibilities for expansion, and how we might address our skill needs of the future.

It's important not to underestimate the technological advances in relation to both the collection and analysis of information and how far we've moved down the technology path. What will be the role of technology in the future? How can we utilise technology further in the collection, storage, retrieval, analysis and dissemination of VET data? The operating context has changed and our data collections need to change with that context to ensure that VET remains relevant. How do we go about leveraging from the gains this operating context now affords us? Another question is: how do we improve our analysis? The funding of the VET system is currently based on inputs, but how do we know whether we're getting the appropriate mix? How do we achieve a better match between what we need, and indeed what our workforce wants and chooses to do?

If the VET sector is concerned with ensuring an appropriately skilled workforce, then it's not good enough to fund the system purely according to the number who participate. We have to know how training has helped and the relevance of that training. Getting a job or the individual achieving their goal is part of the story, but not all. We need to understand and know how training has provided value. If we don't know this, then the VET student's experience and specific outcome may equally have been caused by other external factors.

It's very clear that we have a great wealth of information about vocational education and training at our finger tips. This is an outstanding achievement not realised by many other sectors. The data collection systems are, in the main, robust and timely. While I question the level of detail and the influence we have in making changes within community contexts as opposed to the broad national context, we need to recognise that our vocational education and training system is a world leader. Other countries model their training system on ours, and this brings an additional national responsibility.

However, our focus is still primarily on inputs and outputs, and less on outcomes. We are measuring and monitoring the past very well, but how well do our current data collections translate to the future? What are the questions we're trying to answer and are we blocking the continued growth of our system because of current structures?

I conclude by asking how do we know that the VET system has made a difference and, even more importantly, what do we need to do today or what do we need to secure today to maximise the impact of the VET system in the future? Some of those questions have been answered this afternoon. When we know the answers to all of these questions, then we must sit down and have those hard long discussions, recognising the importance of reflection and the role that it plays in helping us learn and understand as a learning community. We will then be one step closer to having an even better VET system than we have currently.

Anticipating NCVER's 50th anniversary?

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It is my pleasure to round off the symposium with some views about the future of NCVER. Whether or not NCVER exists 25 years into the future—who knows? Twenty-five years in the future seems for ever but, looking back 25 years, 1981 does not seem so long ago.

I trust that NCVER will be an enduring institution. Certainly, it has changed its name from the TAFE National Centre for Research and Development, and over the next twenty five years it is likely to change its name again, although the National Centre for Very Elderly Researchers (NCVER) has a certain ring to it!

The reasons that it should be an enduring organisation are many. In my not necessarily objective view, its structure is ideal for a federation: owned by the nine ministers with responsibilities for vocational education and training, but run independently, as a company. It has large advantages compared with being part of a government department. First, it is at arm's length from government and thus tends to be seen as neutral by stakeholders (although this perception must be jealously guarded). Second, its work comes out under its name and therefore does not bind its owners in anyway. The downside for governments is basically identical to the upside. This independence means that governments cannot control the release of data and research to their own advantage.

It is a model that could be well considered for the other education sectors.

However, being at arm's length and having a certain degree of independence does not mean that it is an independent think tank. At the end of the day it is dependent on government for its finance, and the loss of, say, the statistics contract, would essentially doom it to extinction. Thus it must be very straight, and it would be very dangerous for NCVER to take a strong ideological or policy line. This does not mean that NCVER cannot feed into the policy debate by providing data and pointing to issues. Rather, it means that NCVER needs to steer carefully away from advocating particular positions.

My starting point in thinking about the future is two mottos. On the bottom of our letterhead is ... informing policy and practice in Australia's training system.

This is a very good starting point in contemplating what NCVER should be all about. I am also very taken by the motto of the Australian National University *First, to know*. By the way, this motto is a bit tricky and I have heard politicians leave out the comma, which gives the tag a very different meaning.

My view is that NCVER's work is all about understanding the VET sector and how it fits into our economy and society. The five themes we have used to classify our work give a pretty good picture of the scope of our work: students and individuals, teaching and learning, industry and employers, the VET system and VET in context.

In the rest of this paper, I wish to discuss in a little detail areas of work that we hope to address in coming years: data collections, research and analysis, and dissemination. I then want to spend a little time on thinking about how the environment has changed. I end with a couple of comments.

Data collections

This will inevitably traverse some of the same territory as Cully and Knight's quilt, but here are my thoughts.

We have currently the following collections:

- ✧ National VET Provider Collection (students in the publicly funded VET sector, including VET in the adult and community education sector)
- ✧ VET in Schools
- ✧ National Apprentice and Trainee Collection
- ✧ National VET Financial Data Collection
- ✧ Student Outcomes Survey
- ✧ Survey of Employers' Use and Views of the VET System (covering interaction with VET).⁷

While this is reasonably comprehensive and the data on the whole are of good quality, there are many ways the collections can be improved:

- ✧ There is no staff collection—perhaps the pressures of dealing with the ageing of the VET workforce will be the catalyst here.
- ✧ The apprenticeship and traineeship collection is comprehensive, but there is plenty of scope for it to be more useful. First, there is clearly a lot of interest in moving away from the current statistical concept based on the contract of training to a concept based on the individual. In fact, this is on our work program, and so in due course we hope to produce data on the proportion of people who complete an apprenticeship or traineeship. I also anticipate being able to publish data on completion duration (of direct relevance to current debates about accelerated apprenticeships), as well as being able to cut the apprenticeship data in a way better aligned to industry. (How many plumbers do we train for example?) An issue is a common policy preoccupation with total numbers rather than an understanding of the structural shifts behind the numbers. This was the primary motivation behind generating the 'traditional apprenticeship' series. Finally, given the interest in apprenticeships, I am surprised that we have no apprentice and trainee tracking survey.
- ✧ Our student collection covers only publicly funded VET, and I constantly battle to explain what this is in simple terms. I am hopeful that we will be able to measure all accredited VET in due course, including private provision; current proposals are to have a minimum data set as a condition of provider registration under the Australian Quality Training Framework. Even if we manage to crack this we will have some challenges. First, we will not be able to report on the total number of students (because students can attend more than one provider and we have no way of handling double-counting). Second, we will have to own up to the fact that our current collection (as does public VET funding) includes both Australian Qualifications Framework (AQF) accredited and non-AQF courses. This is for historical reasons, and as can be seen from table 1, covers higher education, secondary education, enabling courses and non-award courses, as well as the AQF VET courses. Thus one of the challenges will be to explain this to stakeholders.

⁷ This is not to overlook the ABS collections such as the Surveys of Education and Training, and the annual Survey of Education and Work.

Table 1 Students by major courses and qualifications, 2000–05

	2005 (%)
<i>AQF qualifications</i>	
Diploma or higher ^(a)	10.5
Certificate IV	10.9
Certificate III	26.7
Certificate II	15.1
Certificate I	5.7
<i>Non-AQF qualifications</i>	
Other recognised courses ^(b)	16.6
Non-award courses	5.8
Subject only-no qualifications	8.7

Notes: (a) Includes diplomas, advanced diplomas, bachelor degrees, graduate certificates, graduate diplomas.

(b) Includes statements of attainment, bridging and enabling courses, secondary education and other recognised courses not elsewhere classified.

- ✧ The VET in Schools data are not integrated into the main collection. This collection is in its infancy. The most recent collection is the first to be (mostly) based on unit record data and I expect to see significant improvement in data coverage in coming years.
- ✧ There is demand for increasing the amount of data collected. For example, there is pressure for a ‘prisoners collection’.
- ✧ A number of users have asked the question, given changes in technology, why we only collect and publish data once a year.
- ✧ For some years we have struggled with reporting the level of activity in the VET sector. Historically, the unit of account has been ‘hours’ but this sits oddly with the focus on competencies, as well as being very non-intuitive to users. While ‘hours’ may have been useful for public accountability, they have outlived their usefulness. Another irritant has been the measurement of training ‘outputs’ in terms of units of competence and modules completed. Not only do these have no meaning for an outsider, but the two units are not commensurable (that is, cannot be added up). This has some import, given that one has been going up and the other down, and therefore it is not possible to judge whether the output of the system has been going up or down. I am happy to say that we are doing a considerable amount of work in this area and I am hopeful that coming years will see a set of more useful measures.
- ✧ Another area where we are weak is in measuring flows or pathways. While we have good data at a point in time, it is very difficult to measure flow concepts, such as completion rates or access rates (the proportion of a cohort to attend VET), or the proportion that completes a second qualification or articulates to university or whatever. With current data we can make estimates, but they tend to have heroic assumptions. To really solve this issue we need a unique identifier that follows students through their life. There is a lot of interest in this at the moment, but it is going to need a high level of political support to make it a reality.
- ✧ The finance collection—or more pedantically, public finance collection—is currently coming under scrutiny. The impetus for this was the transfer of certain responsibilities to the Department of Education, Science and Training following the demise of ANTA. What is ‘expenditure on education and training’? Does it include the payments made to employers for apprentice and trainees, or exemptions to payroll tax for employers? This question has prompted us to begin to think about the whole conceptual basis of the finance collection. Should we be trying to measure private expenditure? There certainly seems to be considerable interest from industry bodies in the contribution that employers make to training.

To sum up, our collections form a solid base for public accountability and policy analysis but there is plenty of room for development. The motivation for such development is not to have better data

for the sake of it or for statistical ‘tidiness’ or comprehensiveness; rather, the motivation is always to gain a better understanding to feed into policy and practice.

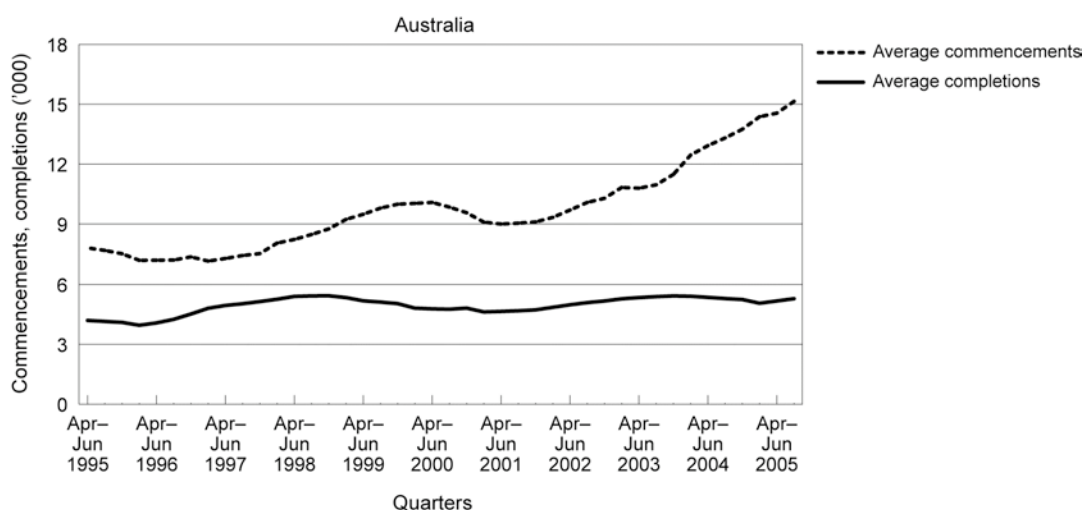
Research and analysis

The distinction I wish to draw is between *analysis* of extant data (and for the sake of argument we can assume it is NCVER data) and *research* which demands a wider consideration of issues. I would like to spend a little time on each of these and talk about NCVER’s role.

Taking the analysis first, I would like to provide a couple of illustrations of what I mean. The first is from the Apprenticeship and Traineeship Collection.

One thing that we had observed is that the number of commencements of traditional apprenticeships had been increasing for some time but the number of completions had remained absolutely flat.

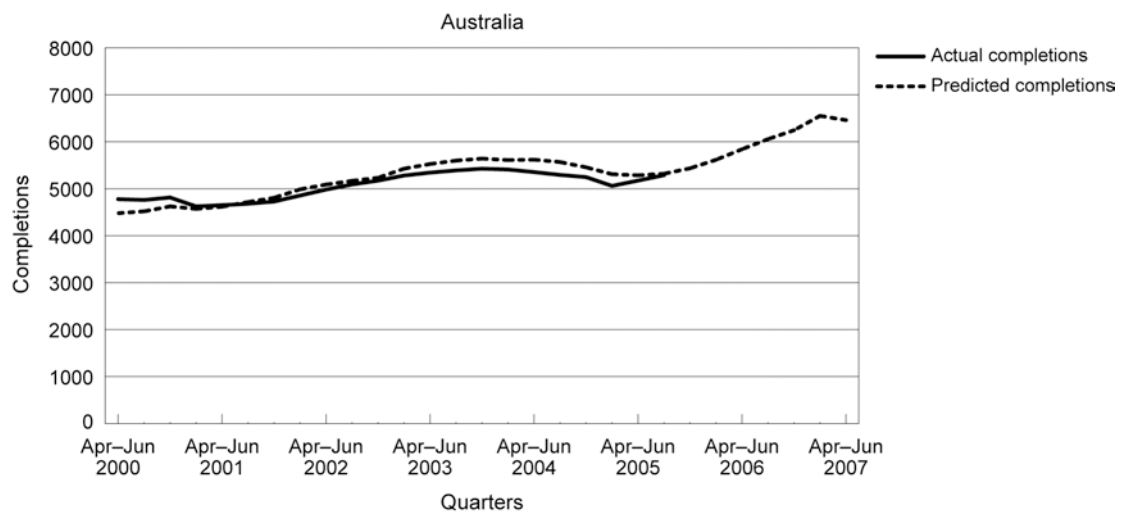
Figure 1 Commencements and completions for traditional apprenticeships (smoothed), Australia 1995–2005



Source: Apprentice and Trainee Collection 46 (NCVER)

In a draft of one of our briefs, a colleague had written something along the lines that we expect the number of completions to go up in coming quarters because there was a lag between commencements and completions. While this was very plausible, it was not founded on any hard analysis. An alternative explanation was that the completion rate had dropped and we were not going to end up with more completions, despite the increase in commencements. To get to the bottom of this we set up a very simple statistical model relating completions and commencements, based purely on the apprenticeship data (Karmel & Virk 2007). It was an exercise that anyone could have done and did not rely on privileged access to the data. Anyway, the results were rather interesting and indicated that, yes, we could justify a statement about expecting an increase in the number of completions in coming quarters.

Figure 2 Completion rates of traditional apprenticeships, 2000–07



Source: Derived from Apprentice and Trainee Collection 46 (NCVER)

However, the analysis also suggested a decline in completion rates. The analysis also had an unexpected outcome in highlighting variations in completion patterns and rates across the states and territories (table 2).

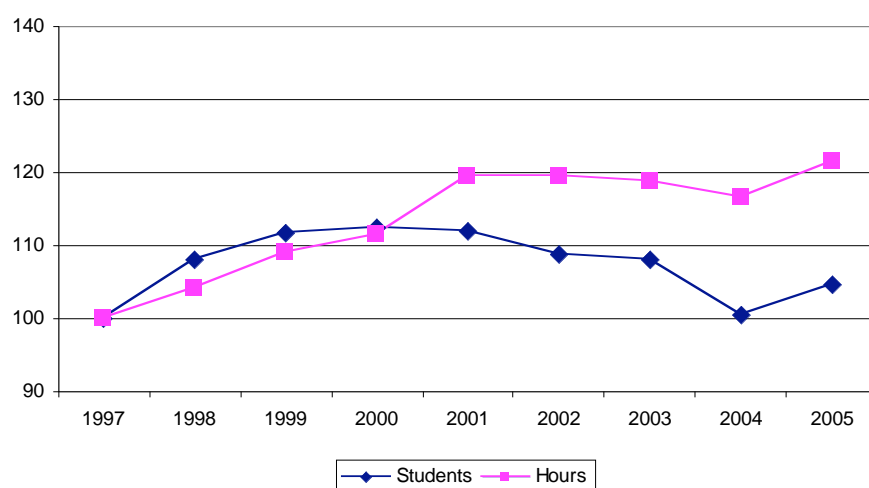
Table 2 Completion rates of traditional apprenticeships, 1998–2002, 2002–05

States	1998–2002	2002–05
New South Wales	0.52	0.45
Victoria	0.58	0.44
Queensland	0.84	0.85
Western Australia	0.87	0.87
South Australia	0.57	0.60
Northern Territory	0.79	0.80
Tasmania	0.92	0.86
Australian Capital Territory	0.88	0.78
Australia	0.64	0.57

Source: Karmel and Virk (2007)

Another example is an analysis of the divergence between student numbers and hours over a number of years (figure 3).

Figure 3 Government recurrent funded students and hours, relative to 1997 VET activity (%)



Again there was a possible rationalisation. There has been an increase in the number of people undertaking higher-level qualifications and we know that higher-level qualifications tend to take more hours to complete. So, it could be argued, the reason for the faster increase in hours than students was that there had been a move to higher-level qualifications. Such an explanation needed scrutiny. Perhaps this was not the reason and there had been an inflation of hours instead. (Given the way the system is funded, there is an incentive to report increased hours.) A simple shift-share analysis put this to the test. By looking at the relationship between qualifications and hours of study and at how the profile of qualifications had changed, we can break up the increase in hours into a number of effects (table 3).

Table 3 Components of change in government recurrent funded hours

	1997–2000	2000–01	2001–05
Average hours effect	-5.5	5.2	6.7
Qualification share effect	4.6	2.3	1.5
Growth effect	11.8	-0.6	-6.7
Residual	0.0	0.0	0.1
Total	10.8	7.0	1.5

In this case we can see that the situation is a bit complicated and that an examination of several time periods is needed to understand what is going on. The bottom line is that the proposed reason for the divergence does not hold up.

Three comments are in order. The first is that these types of analyses can be done by anyone; they are based on data that we would be happy to supply to anyone. The second comment is that the point of doing this type of analysis is to understand what is going on in the data. This is the type of work that NCVER should be heavily involved to back up its collections. The final comment is that this type of analysis does not explain why the data behave in the way they do.

This last comment provides a neat link to research. NCVER is involved in research on a number of levels. First, it does its own research. Secondly, it synthesises research. And thirdly, it manages commissioned research (currently, the major program is the National Vocational Education and Training Research and Evaluation program).

In the organisation's own research I see two main types. The first is a rather more elaborate version of the analysis that I talked about, in which we are trying to understand better a particular topic. The motivation is essentially to get policy-makers to think beyond the rhetoric: sometimes to get

some precision on a topic, sometimes to try to explode a myth. Examples here are the work we have done on lower-level qualifications (Stanwick 2005a, 2005b), on higher-level VET qualifications (Stanwick 2006), on apprenticeships and traineeships (Cully & Curtain 2001; Ball & John 2005; Karmel 2006).

To illustrate this point, I point to some work we have done on the supply of tradesmen (Karmel & Ong 2007).

A common despair by commentators is that we are running out of tradesmen. Not enough young people enter them (university is too attractive), and current tradesmen are middle-aged and about to retire. The ageing of the population means that we can no longer rely on young men to maintain the supply. But do these views really stack up? To answer this, we built a simple supply model in which people enter apprenticeships, either complete or not complete them, and then leave the occupation at some point. The data used comprise NCVER apprenticeship data on commencements and cancellations and withdrawal, and ABS occupational employment data. By making assumptions about commencement rates, cancellation rates, and attrition rates, all based on what we have observed historically, we can project forward the supply using ABS population projections. We do this by making use of a simple accounting formula that says that the number of employed persons in a trade equals the number last year, plus new apprentices, less apprentice withdrawals, less net attrition. These projections can then be compared with demand projections based on the output of a model such as Monash. What we learn from this exercise is that much of the current rhetoric is debatable. Unless the demand projections are completely wrong, there is not much of an issue *from the demographic angle*. Moreover, in most trades there will not be much of a change in the age profile.

The other type of research tries to get behind the numbers. An example of this is the work currently being completed by Misko and colleagues (2007), in which we conducted a survey and focus group discussion on attitudes to apprenticeships of students in Years 10 to 12 and with apprentices themselves.

Looking forward, there will always be a demand for this type of research.

The demand for the next category, synthesis, seems to be largely insatiable. Synthesis takes a number of forms: short publications (*At a glance*s) that bring together a range of material on a topic, and more sophisticated surveys (*Systematic reviews*). The latter has been a recent development, and my judgement is that they are a lot of work, but potentially quite rewarding. We have now done three: education and training and older people, what works for Indigenous Australians, and what works for small business. The main challenge to the systematic review is that they can expose real weaknesses in the research, and it always sits uncomfortably to spend large resources to conclude we need more research.

Of the three I think the Indigenous review has had the best pay-off. The evidence here was pretty definitive and the conclusions (box 1) are clear.

Box 1 Findings from the systematic review into Indigenous Australians and VET

Through a systematic review of existing research, clear evidence has been found that seven key factors lead to positive and improved outcomes for Indigenous Australians as a result of vocational education and training. These are:

- ✧ community ownership and involvement
- ✧ the incorporation of Indigenous identities, cultures, knowledge and values
- ✧ the establishment of 'true' partnerships
- ✧ flexibility in course design, content and delivery
- ✧ quality staff and committed advocacy
- ✧ extensive student support services
- ✧ appropriate funding that allows for sustainability.

Source: Miller (2005)

In terms of the future, one area I would support would be an in-depth survey of recent research on VET teaching and learning. There is a real debate about what goes on at schools at the moment (outcomes versus getting back to the basics), but I don't see a corresponding policy debate in VET.

In terms of the research that we manage, there are a number of issues that I would like to point to.

First, it is timely to re-examine the relative efficiency of funding individual projects. The consortium approach in which a group of researchers is funded at very significant levels to look at a particular topic (see box 2 for the two currently being funded), and the research centre approach in which funding is attached to a centre rather than a project might be more efficient models.

Box 2 The consortium approach to funding individual projects

Consortium 1

The program, 'A well-skilled future: Tailoring vocational education and training to the emerging labour market' was undertaken by a consortium of researchers from Flinders University's National Institute of Labour Studies (NILS) and Melbourne University's Centre for Post-compulsory Education and Lifelong Learning. Comprising a suite of 13 reports, the research program investigated the nature of future labour demand and supply, the changing nature of work organisation, the participation of existing and new workers in VET, and the VET sector's current and future capacity for change and adaptation.

Consortium 2

The research consortium, 'Supporting vocational education and training providers in building capacity for the future', comprises researchers from the Centre for Research in Education, Equity and Work at the University of South Australia, the Centre Undertaking Research in Vocational Education at the Canberra Institute of Technology, and the Australian Centre for Organisational, Vocational and Adult Learning at the University of Technology, Sydney. Comprising nine reports, this consortium investigated how VET organisations are building capability for and dealing with an increasing complex and rapidly changing environment.

The second issue is how to build researcher capacity, noting that the research depth is not particularly satisfactory in VET research. We are currently looking at a range of possibilities, including research scholarships and mentoring grants, and the 2007 NCVER 'no frills' conference has building capacity as one of its themes.

The third issue is research quality. While it is always easy to be critical, we continually struggle to keep researchers on the straight and narrow: a logical line of argument or story, and clear, simple and succinct expression. The way we manage our commissioned research work is quite different from the general approach. We put in a huge effort to get work to what we believe is an appropriate standard. By contrast, the more usual approach is to let researchers sink or swim. If the work is not up to scratch, it will not be published and future grants will not be forthcoming. However, this is not appropriate for VET research because of its very applied nature. If the work is not disseminated to the policy community and practitioners, then it has not achieved its purpose. There is little point in waiting for research to be published in the *Annals of VET research* or whatever; I suspect that our target audience does not spend too much time reading scholarly journals.

Dissemination

The last comment provides a neat transition to something that is very important to NCVER. We currently put a huge effort into dissemination and I expect that it is something which will dominate the next 25 years as well. Dissemination is about product and method. In terms of our research the major innovation in recent times has been the 1:3:25 research report, now transmuted into the 1:1:3:25 (box 3) research report. This seems to have been a relative success with readers, although some researchers feel constrained and, to examine their concerns, we plan to review the format. In implementing this format we are now contemplating not asking authors to write the key messages. It seems that often they are too close to the work and struggle with distilling the three or four key

messages that the journalists or senior policy-makers really want. Another product that seems to work well is the one-page flyer.

Box 3 Structure of NCVER research reports

1 page: the foreword, to provide context
1 page: key messages, to provide the three or four key points for policy-makers or journalists
3 pages: executive summary, a self-contained essay on the report
25 pages: the body of the report
Unlimited pages: supporting documentation

However, written reports are only one thing we do. We also organise research forums and road shows, and do a very large number of presentations. One format that works very well is a presentation to a relatively small number of people from an organisation, allowing interaction and discussion.

As well as these rather conventional approaches we are thinking about other possibilities. There is some interest in pod casts and chat rooms but I will leave it to others to argue their benefits.

I would like now to move to statistics. This is an area that is changing fundamentally because of the ability to present huge amounts of data on the web for a low cost. The days of the hard copy statistical publications are numbered, and we are currently putting quite an effort into moving away from them. The direction of the future is fairly obvious. First, we will be able to publish a huge range of tables, generated automatically (not hand-crafted) and unconstrained by space limitations. The great benefit of this is that we can cater for very specific interests at a low cost. For example, there is no reason why we could not publish a series of plumber apprentice numbers. We publish additional tables on the web at the moment to some extent (for example, state tables for *Students and courses* are published on the web but not in hard copy) and this is an area I envisage will grow exponentially. The other type of product will have the capacity to enable the user to construct their own tabulations interactively. We are working on this at the moment using *Space-time research* technology. The idea is that users can download the reading technology for free and then use it to build their own tables. The only constraints then will be the statistical classifications built into the collections, privacy/confidentiality considerations and, in the case of survey data, sampling error considerations.

In the same vein there is no reason why we can't have different 'cuts' of the data. The obvious example, and one we are working on, is the apprenticeship and traineeship data in which it is possible to have a contract of training view (the current approach) or a view based on individuals (allowing individuals to change their employers and occupation).

Another area where there are potentially important changes is in making research material more readily available. We are constantly looking at how VOCED, our research bibliographic database, can be made more effective. At the moment we are investigating how we can link it to other research databases such as ERIC, and whether we could maintain a digital library of all the materials referenced in VOCED. NCVER could act as an online library to the sector.

Some final comments

I would like to end with a question and a comment. First, I wish to ask the question whether there are potential areas that NCVER should not get into. Second, I wish to think a little about the policy environment.

There are two areas that I think would be problematic for NCVER. The first is that of policy. My view is that NCVER needs to be very careful about getting too close to policy. It is absolutely

critical that we feed into the policy debate through the provision of information and research, and I have no objection to putting conventional wisdom to the test, but NCVER is not a ‘think tank’ and should not be pushing a line. The second is policy evaluation. My feelings here are a little mixed. I certainly have no objection to NCVER undertaking an evaluation of a government program on a consultancy basis, in which case the report is clearly the property of the client. However, it would not be appropriate for NCVER to do its own evaluation of a particular government program. This is not to say that we cannot look at issues that relate to government programs. For example, in recent times we have seen the introduction of the Australian Technical Colleges and state trade schools. It will be up to the Australian Government to evaluate the technical colleges, not NCVER. However, this is not to say that we can’t do work in the area, and indeed we plan to produce apprenticeship and traineeship data that compares the performance of school-based apprentices and trainees with that of their non-school peers.

To look forward it is sometimes useful to look backwards. I worked at the Bureau of Labour Market Research in the mid-1980s. This organisation had some similarities with the NCVER in terms of structure (independent from a government department) and subject matter. Clearly, NCVER has done rather better, and in fact the Bureau of Labour Market Research had a relatively short life. This I believe was primarily because such organisations do not sit comfortably within government in Australia. NCVER’s structure, being owned by nine governments that typically cover both the Coalition and Labor dimensions of party politics, is a much sounder foundation.

My final comment relates to the economic environment. If you look at the issues back then and now, they are remarkably similar. Labour markets remain labour markets. There is still an emphasis on understanding how labour markets work (and vocational education and training is essentially about labour markets) and how various groups are faring. What is different is that in the 1980s the issues were driven by unemployment; in 2007 the drivers are skill shortages and how to improve the quality and quantity of labour supply. Structural adjustment was a big issue then, less so today. However, the drought and global warming may well force big adjustments in the economy that would change the focus yet again. The point of this comment is that the issues that drive our work will not go away and, from this perspective, NCVER’s future is assured. We will never get to the point where there is nothing more to learn. There will always be a need to provide information and research to aid the understanding that policy-makers and practitioners need.

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The National Centre for Vocational Education Research (NCVER) is an independent body responsible for collecting, managing and analysing, evaluating and communicating research and statistics about vocational education and training (VET).

NCVER's inhouse research and evaluation program undertakes projects which are strategic to the VET sector. These projects are developed and conducted by NCVER's research staff and are funded by NCVER. This research aims to improve policy and practice in the VET sector.

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