

Skilling the Existing Workforce

Final Project Report
Australian Industry Group
December 2008



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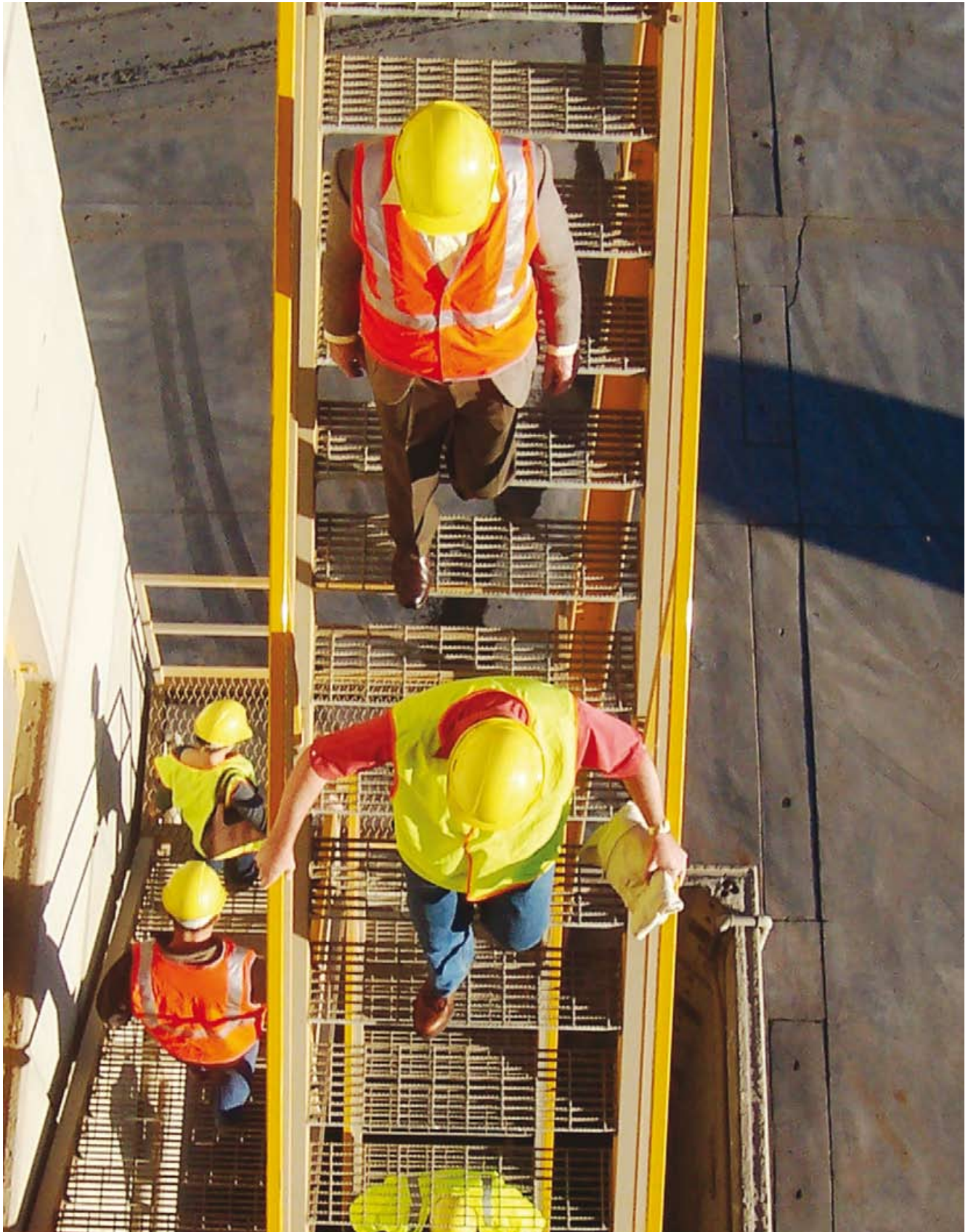
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Foreword

When the Australian Industry Group first raised this issue of skilling the existing workforce we were responding to a training system which was focused squarely on entry-level training. This remains important – but training is now much more than readying young people to move from school to employment. It is our view that more attention needs to be devoted to the skilling needs of the existing workforce. The resulting *Skilling the Existing Workforce Project* report breaks new ground with its emphasis on the skilling needs of existing Australian workers.

Companies were telling us that skilling is increasingly important to their operations especially in a climate of skills shortages. We know from our *World Class Skills for World Class Industries* report that skills must be updated more often, broadened over time and be at a higher level if Australian industry is to remain competitive and productivity is to grow. Many of the skills needed by Australian business must come from the existing workforce – skills shortages and demographic change mean it is not possible to address skills needs by only looking external to the firm.

We always operate from an evidence base and so the first stage of the project was the preparation of a background research report supplemented by a comprehensive literature review prepared by the National Centre for Vocational Education Research. This research basis established *Workforce Skills Development* as the organising theme for the project.

In addition to our research and various consultations around the country we worked directly with a small group of Australian companies as trial sites or case studies over an extended period. We wanted to find out what companies are currently doing in this area and what works. This highlighted many challenges and provided a snapshot of what companies have already tried to do to address skills shortfalls.

A significant set of findings and policy implications have emerged which reflect the centrality of skilling the existing workforce. The project showed how important it is for companies to be able to access the information and advice they need to make skilling decisions; where skilling is within the context of the broader strategic goals of the organisation and the skilling activities take into account these identified future needs, and build on current workforce skill levels.

But this independent advice is not sufficiently available which is why we have called for support for an expansion and extension of current advisory arrangements supplemented by a fund which can be used to help companies move through the necessary preparatory phases and arrive at the point where they can confidently address their skilling needs. There is a strong case for increased and more effective investment in Workforce Skills Development. It is time to actively promote demand driven approaches to skilling the workforce.

The project found that almost all companies engage in informal learning. While large companies tend to have access to specialist in-house training staff this is not the case for SMEs. In recognition of this, the project calls for support to be extended to the roll out of targeted training designed to support those in SMEs who are taking on this responsibility – along with many others – to be able to more effectively fulfill this function. We need to build the internal capability of our companies to more effectively skill their workforces.

We also need to build the capacity of Registered Training Organisations to rise to the challenge of meeting the workforce development needs of industry. Support for professional development of the VET workforce is critical for this.

Another significant finding concerns the issue of the level of literacy in the workforce. A lack of literacy is having a serious impact on the capacity of companies to remain competitive. It is time to consider the development of a national workforce literacy strategy.

We have achieved a major shift in our thinking about the education and training landscape through this project and greatly appreciated the funding provided by the Commonwealth Department of Education, Employment and Workplace Relations. Australian companies recognise the imperative to skill the existing workforce and as a community we all need to rise to this challenge if the Australian economy is to continue to prosper.

Heather Ridout
Chief Executive

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Executive Summary

Introduction

Skilling the existing workforce has emerged as a critical priority for Australian industry and Australian governments.

Skills shortages and technological and demographic change mean that now, more than ever, many of the skills needed by Australian business must come from the existing workforce.

This *Skilling the Existing Workforce Project* set out to explore how companies are working with their workforce to develop the skills the business needs to remain competitive. The project has not confined itself to an analysis of formal training as we know from our earlier research that this is only part of the story.¹ Consideration has also been given to the importance and roles of informal and non-formal learning methods such as mentoring and coaching.

The project

To fully explore the issue the Australian Industry Group, with the support of the Commonwealth Department of Education, Employment and Workplace Relations, commenced the *Skilling the Existing Workforce Project* in January 2007.

The project included the following stages:

- The development of a major background research report on skilling the existing workforce, supplemented by a national and international literature review;
- Consultations on the findings of the research report;
- Trials of and case studies into enterprise experiences with skilling the existing workforce; and
- An overview report into the trials and case studies.

Reports prepared for the stages of the project are available through the Australian Industry Group website www.aigroup.asn.au

The work of the project was overseen by a steering committee comprising representatives of Commonwealth and state governments, public and private training providers, a research organisation and industry.

An early decision of the steering committee was to adopt a 'Workforce Skills Development' approach for this project which covers all forms of learning and skills acquisition. This approach did not limit the work of the project to formal training or alternatively to focus on workforce development, a much broader concept which includes a wide range of human resource management issues well beyond skilling, the primary focus of this work.

Skilling for Innovation – implications for existing workers

In addition to these project stages, in April 2008 the Ai Group asked almost 500 companies as part of the *Skilling for Innovation* survey to identify the most effective means of meeting skills requirements. Across both firm size and industry sectors, the retraining of existing staff is considered the most effective method for meeting current skills needs (61.2%). This is almost twice as high as the number who favour taking on and training unskilled staff, the second most popular method (30.4%). Manufacturing firms are the strongest proponents of retraining existing staff (83.4%) and smaller firms are more likely to look within their organisation for solutions to meet skills shortages.

CEOs were asked which methods their business had used to introduce new skills to existing employees. More than three-quarters (76.7%) of respondents confirmed using informal in-house training sessions to introduce new skills to their existing workforces. Formal training, both external and in-house, is also popular for upskilling. More than half of the respondents indicated they use formal training to introduce new skills (61.0% externally and 54.7% in-house). Mentoring (44.8%) and vendor training (24.8%) are less frequently used methods of upskilling.

Firms in the services sector are greater users of external formal training, formal in-house training, mentoring, and vendor training than manufacturing and construction companies.

The methods most used by firms to upskill employees are not the methods businesses consider to be the most effective.

¹ World Class Skills for World Class Industries report found that 89% of firms use informal coaching, 88% used in-house training and 88% used informal instruction. Figure 3.5 page 37.

While informal in-house training is the upskilling method most used by Australian firms, formal in-house training is the most highly regarded. Nearly 38.3% of all CEOs judge formal in-house training to be 'very successful' in introducing new skills to existing employees, despite it being the third most adopted upskilling method. This finding suggests that costs, as well as access to and availability of formal in-house training, may be factors restricting current upskilling efforts. Mentoring is also highly regarded as an upskilling method, with 35.9% identifying it as 'very successful'. This is despite this upskilling method being the fourth most adopted by firms.

Approaches to Skilling the Existing Workforce

The Background Research Report identified that skilling the existing workforce is increasingly important for a range of reasons including:

- The consequences of the trend of the ageing of the population and the resultant need to retain existing workers;
- The lack of post-school skills and qualifications acquisition by many existing workers;
- The rapidly changing nature of skills required in the modern workforce; and
- The need for a highly skilled and flexible workforce to help ensure that enterprises become and remain competitive in an increasingly competitive global market.

Forms of learning for existing workers are varied and include training provided as part of the national vocational education and training system, and learning acquired through non-formal learning experiences. Informal and non-formal approaches to learning are increasingly important as learners age but these forms of learning are not well recognised in current policy settings.

There are many factors which influence patterns of participation in Workforce Skills Development. Participation in all forms of workforce learning and training declines with age. Participation in work-based learning entrenches, rather than alleviates differences in skills levels because those with the highest levels of skills receive more skills training than those with low skills levels. This is even more pronounced for workers whose primary language is not English, people with low literacy and numeracy levels, unemployed people and people in casual and part-time employment.

Other factors which influence the general level of participation in training include the skills levels required for particular occupations and the nature of the industry; the size of the organisation as larger organisations are far more likely to invest in skills development than small organisations; the ownership of the organisation as public sector organisations are more likely to invest than private sector organisations; and the level of union membership as unionised workplaces are more likely to have high levels of investment in skills development.

There is also evidence of reluctance to participate in skills development by employees where they feel they already have the skills to do the job; where they feel competing pressures from work and family obligations; and where they do not see a likely return on their investment of time and money.

Finally, the research report identified that workplaces are becoming increasingly important sites of learning, using their own resources or by working in partnership with education and training providers, workplace trainers, facilitators, and through change management and continuous improvement processes.

Priorities for Workforce Skills Development

The Background Research Report proposed some critical priorities for Workforce Skills Development which were tested through the consultations. The priorities identified include:

- Improve the level of participation for those with low skills levels in Workforce Skills Development;
- Increase the proportion of workers with high skills levels through Workforce Skills Development;
- More effectively link formal, non-formal and informal learning through Workforce Skills Development;
- Improve information flows about and understandings of Workforce Skills Development; and
- Build world class skills outcomes for individuals and enterprises through high quality Workforce Skills Development.

Consultation Outcomes

In addition to testing the Workforce Skills Development priorities, the consultations also considered the analysis and findings of the research report, discussed the policy implications, gathered enterprise experiences of skilling existing workers and collected information from companies to assist in the development of trials within enterprises about skilling the workforce.

Six key themes emerged from the consultations:

- Skilling the workforce is a priority.
- The definition of ‘workforce’ needs to be redefined to capture casual and part-time employees and those seeking to enter/re-enter the workforce.
- Approaches to training are broad (ranging from mentoring and coaching, to company and technology specific training which is non-accredited, and formal training supplemented by informal training) and need to cater to the specific needs of enterprises.
- Pathways to high level qualifications and skills levels must be created while supporting the retraining of those in the workforce with low-level skills.
- The barriers to training and upskilling the existing workforces could be succinctly summed up as ‘cost, time and interest’.
- Skilling is considered a shared responsibility between government, industry and the individual.

These themes reflected and expanded on the findings of the Background Research Report.

Trials and Case Studies

Following the consultation phase, Ai Group worked with a small group of companies over a period of more than six months to see how individual enterprises address the issue of skilling their existing workforce. The trials and case studies highlighted many challenges:

- The range of enterprise attitudes towards training;
- The difficulty of finding time to concentrate on training when operational problems arise;
- The importance of management support for skilling;
- The cost of providing compliance training for workers; and
- The problems faced when training cannot keep pace with the latest innovations and technology.

The trial provided not only a snapshot of what companies are currently doing to address skills shortfalls, it also demonstrated that many enterprises have a deep commitment to training and the benefits it brings to productivity and prosperity. The experience of the trials was supplemented with a number of case studies which provided some best practice examples of how companies successfully blend formal and non formal training.

Project Findings

The Centrality of Skilling the Existing Workforce

The development of the skills of the existing workforce is a major priority for Australian businesses. All enterprises involved in the project used a breadth of approaches to skills development including formal, informal and non-formal learning methods and this was the case across different industries, firm sizes and the different states that participated in the project.

The challenges of delivering effective Workforce Skills Development were greater with small and medium size enterprises particularly those facing significant competitive pressures requiring cost reductions and productivity improvements.

Companies demonstrate a strong willingness to invest in all levels of Workforce Skills Development where there is a clear link between skills development and broader enterprise strategic goals.

Pre-Conditions for Workforce Skills Development

The lessons of this project indicate that a Workforce Skills Development approach is most effective when certain pre-conditions are met including:

- A clear linkage between Workforce Skills Development and the broader enterprise business goals;
- Implementation of Workforce Skills Development initiatives as part of the overall business processes of the company;
- Flowing from the above, a clear identification of skills needs by the enterprise;
- Support for the approach by senior management, including senior management beyond training and human resource departments within larger organisations;
- Proper resourcing of Workforce Skills Development;
- A preparedness by company employees to undertake the training;
- The adequacy of employees’ English language literacy skills;
- A capacity by external and internal education and training providers to understand the broader business needs and drivers of the enterprise and the skills needs which flow from these drivers; and

- A capacity to provide skills recognition and training services that meet these needs in a way which has least impact on cost and productivity.

Assisting Enterprises to meet Pre-conditions

To achieve many of the pre-conditions set out above, enterprises need access to high quality information and advisory services. This includes effective identification and analysis of their current and future skilling needs and information and advice about potential skilling providers.

The most successful of the enterprise trial sites received direct access to advisory services and this was a critical factor in their success. The use of these services was more resource intensive in the initial stages than originally anticipated and enterprise needs and circumstances changed significantly in some of the trials.

The Importance of Workforce Literacy

The project confirms the importance of workforce English language and literacy and provides a practical demonstration of the impacts of widespread literacy difficulties on Workforce Skills Development. The project found that a large proportion of the workforce did not have adequate literacy, numeracy and problem solving skills to operate effectively in the workplace.

Role of Registered Training Organisations

Enterprises were prepared to use Registered Training Organisations (RTO) when appropriate to their workforce skills needs and when the RTOs could demonstrate a capacity to understand and meet these needs. There was a preparedness to use RTOs particularly when valued relationships had already been established. In some instances, project objectives could not be realised where the RTO was not able to respond to enterprise needs within the required timeframe.

The Importance of Initial Skill Assessment

The identification of required skills, skill audits, skills assessment and recognition emerged as very important initial steps in Workforce Skills Development. Often enterprises needed assistance to come to terms with these issues and external advisory services played a very important role in this regard.

Skilling Needs and Approaches to Learning

In many instances, enterprises met their higher level needs through workplace – based non-formal and informal learning, particularly in relation to technology and products specific to the enterprise.

Demand is strong in base and entry level technical and occupational qualifications across the existing workforce to support multi-skilling, for language and literacy programs and employability skills including communication.

Demand for workplace trainer and assessor and front line management skills to improve the quality of informal and non-formal workplace learning is also evident. Knowledge transfer from experienced and retiring staff is a priority issue that is gaining importance but strategies to achieve this are not yet evident on a systematic basis.

Importance of Competency Standards

The project findings highlight the continuing importance of industry competency standards as benchmarks for skills assessment, recognition of current competence, quality assurance and consistency. Competency standards and qualifications need to be relevant and sufficiently flexible to meet diverse needs of the workforce and particularly the requirements of leading edge enterprises. The process of the continuous improvement of National Training Packages by Industry Skills Councils to engage leading enterprises is important in this context.

Project Recommendations

This project identified a clear set of recommendations.

1. Develop a Workforce Skills Development Advisory Network

The importance of advisory and brokerage services demonstrates the need for a ‘case management’ approach to Workforce Skills Development. Under this model, independent Workforce Skills Development advisors would work with enterprises to:

- Provide advice to enterprises to link Workforce Skills Development to broader enterprise business and HR strategies;
- Develop tools to assist return on investment in Workforce Skills Development;
- Undertake initial analysis of skills needs;

- Develop strategies to encourage and support employee participation in Workforce Skills Development;
- Assist in the development of enterprise and individual learning plans;
- Provide advice to support the building of the internal capacity of enterprises to improve Workforce Skills Development (e.g. by training managers and experienced workers as coaches, mentors and workplace trainers and assessors);
- Assist the enterprise to access relevant programs and services offered by RTOs and to make informed choices and judgments about those programs and services; and
- Develop tools to assess and monitor implementation and outcomes.

This network could be achieved through an expansion of the Commonwealth Government Education and Training Advisors program and through a re-definition of the role away from a focus on apprenticeships to this broader advisory role. The network could complement the role of existing State-based initiatives to assist individuals.

2. Establish a Workforce Skills Development Fund

A more flexible and responsive approach to public funding is required to support the services provided by a Workforce Skills Development Advisory Network. In addition to the funding for the Advisory Network, a further Workforce Skills Development Fund is required to address identified enterprise needs. The Network would provide the assistance and, when the pre-conditions for successful Workforce Skills Development are achieved, the Development Fund would be activated. Independent advisors/brokers would work with enterprises and have access to a fund which could be flexibly applied in direct response to the enterprise needs which have been identified through the interaction with the Workforce Skills Development Advisory Network. These needs include:

- Building the capacity of enterprises to upskill and reskill their workforces by developing coaches and mentors;
- Improving the skills of nominated workers to provide formal, non-formal and informal skilling through nationally recognised training and assessment units and qualifications;

- The development of a skilling plan to support the strategic plans of organisations;
- A comprehensive skills audit, alignment to national training packages and skills gap analysis;
- The negotiation of suitable formal training and ensuring the RTO delivers what is required and at a time to suit enterprise needs; and
- measuring the return on investment.

As an initial step, this proposed fund could be trialed in conjunction with a funding round of the Productivity Places Program. Enterprise co-funding options could also be incorporated within the trial.

3. Establish a National Workforce Literacy Strategy

The importance of the core enabling skills of language, literacy and numeracy to underpin the skills required for the existing workforce emerged consistently throughout the trial sites and case studies. The absence of a national literacy strategy seriously undermines strategies to skill the existing workforce. A national strategy is needed to encompass the following elements:

- Recognise that workplace literacy provision is an essential part of a wider Workforce Skills Development approach;
- Refocus the current Language, Literacy and Numeracy Program (LLNP) on building core skills required for the workplace rather than concentrating on the shortcomings of individual workers;
- Expand and enhance the Workplace English Language and Literacy (WELL) program which has been highly valued by participating employers;
- Provide opportunities for industry bodies to have a practical and strategic role in the provision of advice and allocation of funds under the LLNP and WELL program; and
- Develop linkages between a national workforce literacy strategy and the provision of funded places for existing workers within the Productivity Places Program.

4. Build Understanding and Capability in Registered Training Organisations of Workforce Skills Development

There is growing recognition within RTOs about the concept of Workforce Skills Development but effective responses by RTOs to enterprise needs in relation to existing workers need to be assisted by:

- RTOs and, as appropriate, their funding and representative organisations in partnership taking a more systematic approach through professional development;
- RTOs forming and/or extending industry partnerships to facilitate the placement of teachers and trainers in enterprises and the conduct of further case studies into successful practice particularly between enterprises and RTOs and by enterprise RTOs; and
- RTOs participating in the Workforce Skills Development Fund.

5. Increase Priority for Investment in Workplace and Organisational Learning Programs

There is a need to increase investment in programs that build the capability of enterprises to deliver skilling programs. These programs include Frontline Management, targeted qualifications and skill sets within the Training and Assessment Training Package and the newly developed organisational learning and capability development qualifications within the Business Services Training Package. A comprehensive implementation plan is needed to engage industry and to sell the efficiency benefits of an investment in building in-house training skills.

6. Continue to Advocate and Support Flexible, Demand and Outcomes-Based Funding

To respond to identified skills needs, the current policy direction for demand and outcomes-based funding must be maintained and translated into major and sustained change. This will only be achieved through additional funding which reflects identified industry skills needs, and is not limited to skills shortage categories.





Chapter 1

Introduction



1.1 Project Rationale

The Australian Industry Group was aware that the need for workforce reskilling in Australia had been recognised in several key reports.

- ANTA's 2004 – 2010 national strategy for Vocational Education and Training *Shaping our Future* included an action strategy to “develop and implement a strategic plan to respond to emerging skill needs of the mature age workforce and our ageing population”.¹
- The Ministerial Council on Employment, Education, Training and Youth Affairs addressed the issue in the Declaration on Adult and Community Education (2002). The Declaration stated:

Over 50 per cent of the adult populations do not hold post-school qualifications. Thirty eight per cent of adults aged 45-54 and 49 per cent of adults aged 55-64 did not complete the highest level of schooling.²

During 2006, Ai Group released two major reports which confirmed this direction. *The Manufacturing Futures: Achieving Global Fitness Report*³ highlighted the “importance and urgency in the task of significantly building up the capabilities of the workforce” and noted that by May 2004, only half of Australia's population, and not necessarily the workforce, had obtained a qualification in addition to schooling. This does not compare well to other equivalent OECD countries.⁴ The report emphasised the need to increase the focus of the training system to the upskilling and re-skilling of existing workers.

Ai Group has also been aware of the limitations of relying on the traditional apprenticeship system in relation to existing workers. Policy has been released in the form of *Contemporary Apprenticeships for the Twenty First Century* which focuses on more relevant apprenticeship arrangements for adult and existing workers.

In May 2006, Ai Group released the landmark report, *World Class Skills for World Class Industries*. This report highlighted the centrality of skills and building the skills base as a key strategy to remain globally competitive, and that an inability to secure skilled staff was the greatest barrier to company success.⁵

Beyond this, the report identified the main implications for future skilling as:

- Higher level skills;
- The need for a broader range of skills; and
- The need to update skills more often.

There has been too much concentration on entry-level training in VET reform to date and the report called for a greater focus on higher level skills for the existing workforce.

The *Skilling the Existing Workforce Project* is a key element in the implementation of the recommendations of the *World Class Skills for World Class Industries* report. As a direct result of that project's findings, Ai Group sought and gained funding from the Commonwealth Department of Education, Science and Training (now the Department of Education, Employment and Workplace Relations) to conduct the *Skilling the Existing Workforce Project* to identify and address the skills needs of existing workers.

1.2 Project Stages

The project has four stages:

1. The development of a major research report on Skilling the Existing Workforce.
2. Consultations on the findings from the research report.
3. Trials of, and case studies into enterprise experiences with skilling the existing workforce.
4. An overview report into the trials and case studies.

The project commenced in January 2007 and was overseen by a Steering Committee comprising representatives of Commonwealth and state governments, public and private training providers and industry. A list of Steering Committee members is included at Appendix A. Peter Noonan was retained as a consultant to the project. His involvement included the development of the major reports of the project together with extensive technical guidance and support.

¹ Australian National Training Authority: *Shaping our Future*; Australia's National Strategy for VET 2004 – 2010.

² Ministerial Council on Employment, Education, Training and Youth Affairs, 2002: MCEETYA Declaration on Adult and Community Education, Melbourne.

³ *Manufacturing Futures: Achieving Global Fitness*, Australian Industry Group, April 2006, page 68.

⁴ In 2002, 39% of Australians had left school and never returned to formal education compared to the OECD average of 32% (*Manufacturing Futures*, page 68).

⁵ 85% of employers indicated that 'building the skills base' was a key strategy for remaining competitive (page 18) and 74% indicated the inability to secure skilled staff as the greatest barrier (page 53).

1.3 Project Methodology

1.3.1 Background Research Report

The first element of the project methodology was to develop a Background Research Report. The objectives of this research were to:

- Consider recent key national and international policy developments concerning the skilling of the workforce;
- Consider the nature and forms of workforce skills;
- Examine the patterns of and influence on participation in workforce skills;
- Consider how existing workers learn and acquire skills; and
- Determine the strategies required for skilling the existing workforce.

A detailed account of this research is contained in Chapter 3. The resulting document acted as the theoretical basis for the project work and advanced the central organising concept of 'Workforce Skills Development' for the project.

This report is located on the Ai Group website www.aigroup.asn.au

1.3.2 Literature Review

The Workforce Skills Development approach included consideration of a range of different forms of learning including formal, informal and non-formal which were identified in the Background Research Report. Given the importance of these elements it was decided to undertake a literature review of these different forms of learning. Ai Group commissioned the National Centre for Vocational Education Research to do this work. An abridged version of the literature review is included at Appendix B.

1.3.3 National Consultations

The next stage of the project was to undertake a series of national consultations with key stakeholders and enterprises. Consultation papers for both key stakeholders and for enterprises were developed to assist in this process.

The main purpose of the consultation sessions was to:

- Consider the analysis and findings of the research report;
- Consider the policy implications of the research findings;
- Gather from enterprises their experiences of skilling existing workers; and
- Gather information from companies to assist in the development of trials within enterprises about skilling the workforce.

The detail of this process is contained within Chapter 4 and the outcomes of the process are available on the Ai Group website www.aigroup.asn.au

1.3.4 Enterprise Trials and Case Studies

A major stage in the methodology was working closely with enterprises to trial different strategies of skilling existing workforces. Five trial sites were selected to undertake the work. In order to supplement this activity and provide a balance across different states, an additional five enterprises were included as case studies. At the conclusion of the work with enterprises, an overview report was developed. This report is available on the Ai Group website. The details of this stage of the methodology are outlined in Chapter 5.

1.3.5 Findings, Policy Implications and Recommendations

The final chapter in this report includes the implications for public policy and a set of recommendations and is detailed in Chapter 6.

1.4 This Report

This report documents in detail all stages of the *Skilling the Existing Workforce Project*, drawing extensively on the written material that has been developed over the course of the project. In addition, the report looks at the policy implications of this work and makes a series of recommendations.



Chapter 2

Skilling for Innovation



This chapter draws on Ai Group's inaugural National CEO Survey report 'Skilling for Innovation'. The survey canvassed the views of Australian CEOs on many aspects of innovation, skills issues and the linkages between the two.

This chapter is an abridged version which particularly focuses on the implications of the survey findings for existing workers; the full report can be accessed at www.aigroup.asn.au

2.1 Introduction

Australian businesses are finding it increasingly difficult to attract and retain the skilled workers needed to survive and prosper in today's economic climate. Skills shortages are also restricting the innovative ability of Australian firms and this places the future competitiveness of many companies at risk.

In order to better inform the policy debate, Ai Group, in conjunction with Deloitte Touche Tohmatsu, undertook a comprehensive survey of Australian CEOs in 2008 on issues regarding skills and their importance to innovation. A total of 492 CEOs in the manufacturing, services and construction sectors participated in the study. These companies had sales revenue of around \$35.0 billion in 2007 and employed almost 100,000 people.

The overall objective of the study was to gain an understanding of the links between the level of skills within an organisation and the firm's subsequent ability to be innovative. The study measured the extent of skills shortages in Australia and identified the types of skills considered to be most lacking. It also considered the types of skills and organisational capabilities most integral to a company's ability to be innovative. The study explored the strategies businesses are using to increase the skills of current employees and the perceived success of these measures.

Skilling for Innovation provides important insights into:

- The impact skills shortages are having on business innovation in Australia;

- The innovation skills most lacking in firms; and
- The degree to which businesses are using upskilling as a means of lifting innovation.

2.2 The need for greater innovation

To be productive, innovative and profitable, businesses require a highly-skilled workforce.

2.2.1 Skills are a driver for success

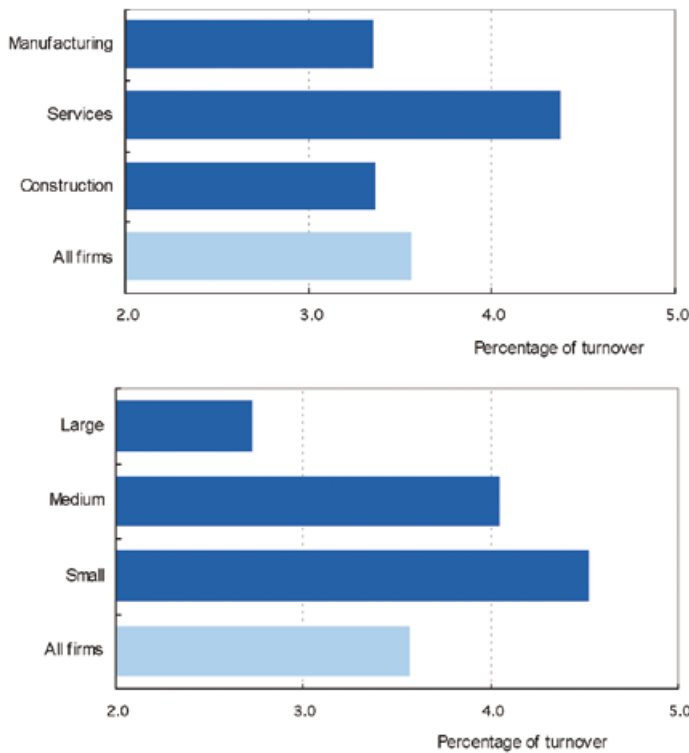
With human capital acknowledged as core to economic activity, the need to align skills and capabilities with an innovating economy becomes central to ongoing industry strategy. Encompassing new products, new processes and new business models, innovation needs to underpin both strategy and operations in organisations. When innovation is a foundation for organisational strategy, it follows that innovative skills and capabilities of all employees in a company need to be developed and maintained. The 2006 study commissioned by Ai Group, *World Class Skills for World Class Industries*, identified 'an inability to secure skilled staff' as the most important barrier to business success. More recent survey work conducted by Ai Group found companies are not only focusing on skills for their success but are seeing skills as a way of bringing about innovation to drive success.

2.2.2 The changing landscape for business

Companies looking to the future need the organisational capability to develop new business models or pursue business strategies that throw open the traditional boundaries of an organisation. With rapid and disruptive change becoming more common to business activity, the capability to constantly re-invent can determine a firm's sustainability. New forms of coordination and management techniques need to pre-empt major disruptions that might necessitate changes to existing procedures, engineering capabilities or knowledge bases. Developing a strategic approach to innovation management will ensure any weaknesses or challenges can be addressed.

Fostering innovation means managing a company for high levels of efficiency and high levels of creativity at the same time. The need for stability competes with a need for change in a global environment that is highly volatile and unpredictable. Companies are changing assumptions about business models as they organise for speed and adaptability.

Figure 1: Expenditure on innovative activities



2.2.3 Company investment in innovation

Australia’s business expenditure on research and development (one measure of innovative activity) has increased relative to most OECD countries in recent years. While the Productivity Commission has noted that industry structure has contributed to Australia’s low research and development effort, even at 1.04% of GDP, it is still lower than the OECD average of 1.5%.

With regard to non-research and development areas of innovation, Australian Bureau of Statistics data from December 2006 suggested that one in every three companies had undertaken innovation, either through introducing new or significantly improved goods and services, processes or structures.

A 2006 Global Innovation Scorecard (GIS) prepared for the European Union found Australia’s innovation performance to be middle-ranking, with a score of 0.52. Previous survey work conducted by Ai Group in 2006 found innovation expenditure

by the manufacturing sector was equivalent to 3.2% of sales in 2005-06.

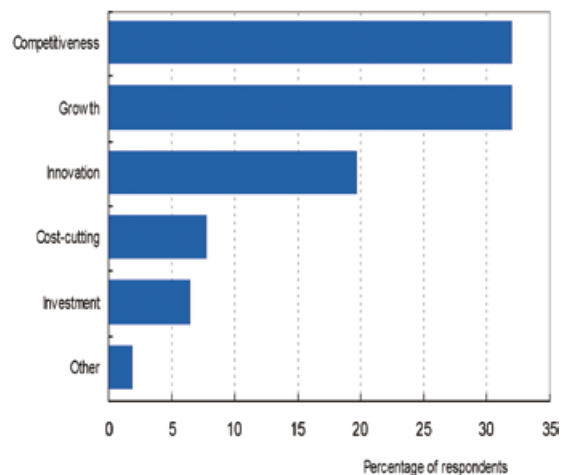
CEOs in this survey were asked for the proportion of their turnover devoted to innovative activities in 2007. Of all the firms responding, the proportion of turnover spent on innovative activities was 3.6%. The spend on innovation declined as the size of the firm increased with small firms spending the most on innovation (4.5%), medium firms 4.1% and large firms 2.7% of turnover. The services sector reported the highest investment in innovation at 4.4%, while both the manufacturing and construction sectors spent 3.4%.

2.3 The importance of innovation to business strategy

The survey asked CEOs to rank the strategic approaches of innovation, investment, growth, cost-cutting, and competitiveness in regards to their importance to overall business strategy.

The importance of innovation strategy to overall business strategy was rated third (19.7%), behind competitiveness and growth strategies (both 32.0%). While firms reported a concentration on specific competitiveness and growth strategies, innovative strategies act to underpin both of these. The lower emphasis placed on cost-cutting strategies (7.8%) indicates a general attitude towards expansion. A lower importance reported for investment strategy within overall business strategy (6.5%) may indicate a focus on business process and business model innovations to drive growth and competitiveness, rather than research and development.

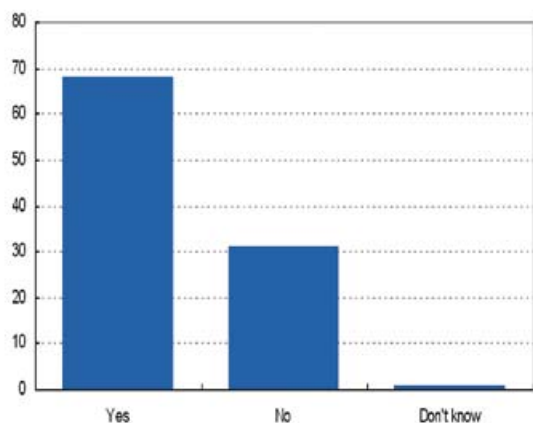
Figure 2: Importance to overall business strategy



2.4 Skills shortages in Australia

Skills shortages are clearly being felt by a majority of firms in the Australian economy. To assess the extent of skills shortages in Australia, the survey asked firms whether skills shortages had impacted on their business over the past 12 months. More than two-thirds (68.1%) of respondents confirmed that skills shortages had impacted on their business over the past year.

Figure 3: Percentage of firms with skills shortages



The construction and services sectors reported the highest proportion of respondents citing impacts from skills shortages, 83.3% and 78.0% respectively. Of the manufacturing sectors, machinery and transport equipment (73.0%) and metal products (69.2%) recorded the highest incidence of impacts from skills shortages. Only half of the food processing and manufacturing firms surveyed cited impacts from skills shortages over the past year, the lowest incidence across sectors.

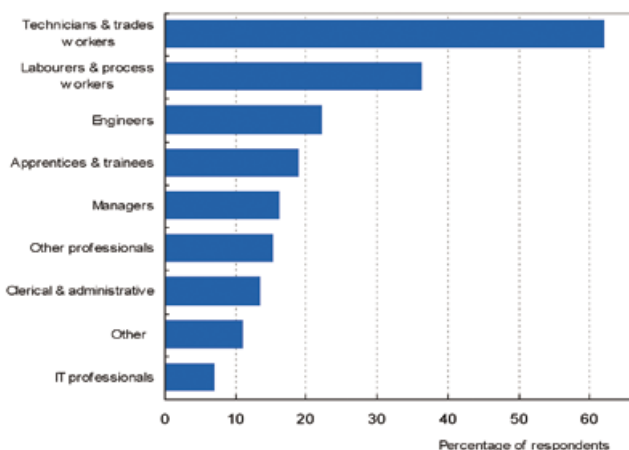
Large firms reported the highest incidence of impacts from skills shortages; 81.3% of companies with more than 100 employees indicated they had been impacted by skills shortages. Nearly two-thirds of medium-sized companies reported impacts from skills shortages over the past 12 months. Despite recording the lowest incidence of impacts from skills shortages, a majority of small firms (59.7%) still cited impacts from a deficiency in skills.

2.4.1 Occupations experiencing skills shortages

CEOs were asked to identify the major occupations where they had experienced skills shortages. Across firms of all sizes and sectors, a large proportion of companies cited difficulties securing the skills of technicians and trades workers (62.2%).

Other occupations where a high proportion of firms are experiencing skills shortages include labourers and process workers (36.3%), engineers (22.2%), and apprentices and trainees (18.9%). (The high incidence of shortages in the trade and technical occupations partly reflects the strong representation of manufacturing firms in the survey.)

Figure 4: Occupations with skills shortages



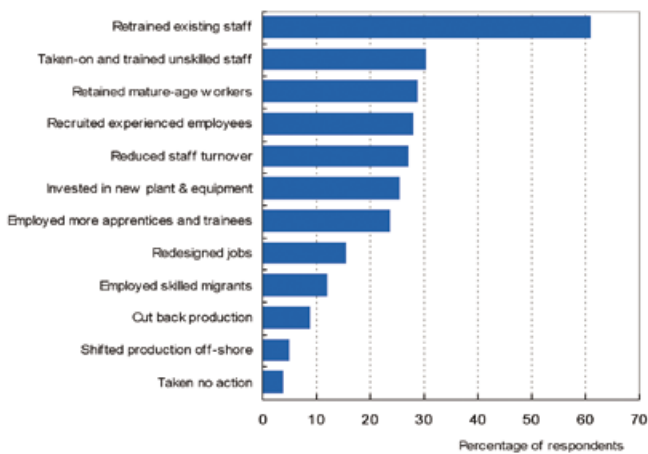
Large firms reported the highest incidence of shortages in engineers (45.6%) and managers (36.8%), while medium-sized firms faced considerable shortages in labourers and process workers (40%).

2.4.2 Methods to meet current skill needs

There are a number of actions firms can take to overcome skills shortages. The survey asked CEOs to identify the most effective of these in meeting their skill requirements.

Across both firm size and sectors, the retraining of existing staff is considered the most effective method for meeting current skill needs (61.2%). Taking on and training unskilled staff (30.4%) and the retaining of mature-aged workers (29.0%) were the next most widely used methods to meet skill requirements. More than one-quarter of firms found recruiting experienced employees (28.1%), reducing staff turnover (27.1%), and investing in new plant and equipment (25.7%) effective in overcoming skills shortages. Employing additional apprentices and trainees was a more popular course of action for meeting skill needs than employing skilled migrants, shifting production off-shore, and cutting back production. Only 3.9% of respondents indicated they had taken no specific actions to better meet their skill needs.

Figure 5: Methods to meet current skill needs



Manufacturing firms are the strongest proponents of retraining existing staff (83.2%), retaining mature-age workers (42.6%), investing in new plant and equipment (39.8%) and taking-on and training unskilled staff (39.8%). Employing additional apprentices and trainees is a more popular method for overcoming skills shortages in the construction sector (32.1%) than in manufacturing (28.9%) and services (26.6%).

Smaller firms are more likely to look within their organisation for solutions to meet skills shortages, namely through retraining. By contrast, larger firms are more likely to look outside of their business for the skills they require (recruitment).

2.4.3 Barriers to upskilling

There are a number of barriers that prevent firms from increasing the skills of their workforce to required levels including:

- Cost (51.5% of CEOs believe cost is the major barrier faced in upskilling);
- Departure of staff following training (40.7%);
- Lack of government incentives (36.2%);
- Uncertainty with respect to future needs (31.5%);
- Lack of relevant training (29.9%); and
- Employee resistance (29.7%).

Companies appear reasonably satisfied with the training available for upskilling staff. Only 12.1% of firms cited the poor quality of training as a barrier to upskilling and only 19.3% identified the inflexibility of training.

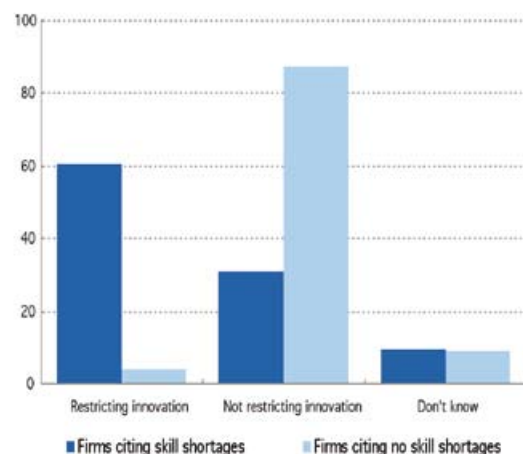
2.4.4 Impacts of skills shortages on innovation

There appears to be a clear link between skills shortages and a lack of innovative ability in Australian firms. This suggests that policies which help lift the nation’s skills base will have direct and positive effects on business innovation in Australia. Skills shortages are regarded as one of the infrastructure inhibitors of innovation.

- Possessing the relevant skills is core to firms addressing specific demands from customers, staying ahead of competitors, and expanding market share.
- Skills shortages impact on innovation by limiting the ability of firms to source fresh ideas from employees. A lack of skills in science, engineering and technology, other specialist business and management capabilities, and in the soft skills areas all affect a firm’s innovative capacity.
- Management skills are vital in extracting value from ideas, developing new products, processes and business models, and implementing knowledge management strategies. Without this capability, firms are challenged in their drive to remain globally competitive.

More than 68% of Australian firms have been identified as suffering from skills shortages. Of the firms citing impacts from skills shortages, 60.2% found they were restricting innovation. A significant proportion of CEOs overall reported that skills shortages are restricting innovation (42.2%).

Figure 6: Skills shortages and impacts on innovation



2.5 Importance of generic skills for innovation

Generic skills are increasingly recognised as central to enabling innovative capabilities in all workers. In addition to technical skills, the skill sets required for innovation and industry competitiveness incorporate:

- Skills enabling all individuals to be creative and problem-solve; and
- Skills for managers to develop innovative strategies across a company, create the fundamentals for an innovative culture, and motivate and manage others as part of organisational innovation.

The first set of skills encompasses generic or 'soft' skills; those that underpin the effective performance of all workplace activities. CEOs were asked to rank the soft skills – problem-solving, team work, communications, and adapting to change – in terms of importance for innovation. Respondents recognise the need for generic skills in individuals. Problem-solving is rated as most important (31.7%), followed by communication (25.8%), adapting to change (23.5%) and teamwork (18.9%).

2.5.1 Shortages of skills for innovation

CEOs were then asked to identify the generic skills areas in which their organisation was lacking. While problem-solving skills are regarded as the most important for innovation, communication skills are considered to be most lacking (53.5% of firms). Nearly half of the firms surveyed (47.2%) indicated they lacked skill in adapting to change. Just over 30% of respondents cited shortages in team-work and problem-solving skills (33.3% and 31.5% respectively).

CEOs were asked whether they use upskilling as a strategy to increase innovation in their business. Nearly two-thirds of all firms (65.9%) indicated they had used upskilling as an innovation strategy.

There appears to be a positive correlation between the size of a company and their propensity to use upskilling as a strategy to increase innovation. Large firms reported the highest usage of upskilling as a strategy for increasing innovation, with 78.2% confirming they had used such an approach. By contrast, only 60.4% of small firms stated they had used upskilling to boost innovation levels in their business.

2.5.2 Upskilling expenditure as a percentage of turnover

There appear to be clear links between the skill levels of an organisation and its ability to be innovative. Expenditure on upskilling is expected to lift moderately in 2008 as firms are planning to increase their expenditure on upskilling, as a percentage of turnover, from an average 0.46% in 2007 to 0.54%.

Despite a lower proportion of small firms using upskilling as a strategy to increase innovation, on average they tend to spend more of their turnover on these expenses than their larger counterparts. In 2007, small firms spent an average of 0.53% of their turnover on upskilling, compared with 0.45% for medium-sized firms and 0.36% for large firms.

2.5.3 Occupations with the greatest priority for upskilling

The ability to lift skills in the occupations with the greatest priority will boost the effectiveness of upskilling as a strategy to increase innovation. Occupations might be considered a priority for upskilling if their current levels of skills are insufficient. Alternatively, the importance of the occupation to the overall success of the firm may deem it a priority for upskilling.

CEOs are strongly of the view that technicians and trades workers are the greatest priority for upskilling (27%), yet have been identified as the occupations suffering most from skills shortages.

Labourers and process workers are also considered to be a high priority for upskilling, with 22.6% citing workers in the occupation as being the most in need of new skills. Apprentices and trainees (15.3%) and managers (14.4%) are the other occupations considered to be a priority for upskilling.

The relatively high priority given to upskilling managers suggests that while there might be less of an overall shortage of managers than for other occupations, the need to improve their skills is more of a concern. It also accords with the need for greater management capabilities for organisational innovation, as acknowledged in the previous section.

In the manufacturing and construction sectors, technicians and trades workers, and labourers and process workers are identified as the occupations with the greatest priority for upskilling. Services sector firms believe the managers, professionals, and engineers in their businesses are more in need of upskilling than firms in the manufacturing and construction sectors.

Small companies are firmly of the view that technicians and trades workers are the greatest priority for upskilling (33.1%). By contrast, medium-sized firms identified labourers and process workers as the most in need of upskilling, with 29.3% citing the occupation as a priority. Managers (20.0%) and engineers (20.0%) are considered by large firms to be the greatest priority.

2.6 Introducing new skills to existing employees

The quality of upskilling training available to firms will influence the degree to which improved skills lead to greater innovation.

2.6.1 Methods for introducing new skills

CEOs were asked which methods their business had used to introduce new skills to existing employees. More than three-quarters (76.7%) of respondents confirmed using informal in-house training sessions to introduce new skills to their existing workforces. Formal training, both external and in-house, is also popular for upskilling. More than half of the respondents indicated they use formal training to introduce new skills (61.0% externally and 54.7% in-house). Mentoring (44.8%) and vendor training (24.8%) are less frequently used methods of upskilling.

Firms in the services sector are greater users of external formal training, formal in-house training, mentoring, and vendor training than manufacturing and construction companies.

External formal training was the most used upskilling method for services companies, with 81.5% of respondents claiming to be users. Manufacturing firms were the biggest users of the relatively less expensive informal in-house training (77.3%). They were significantly less likely to use external formal training (54.8%); formal in-house training (50.2%); and vendor training (19.3%) than services and construction companies.



Despite spending a smaller percentage of their turnover on upskilling, large firms were greater users of external formal training (85.3%), formal in-house training (77.3%), mentoring (56.0%), and vendor training (48.0%) than their smaller-sized counterparts. Medium-sized firms (83.7%) and small firms (78.5%) were more prolific users of informal in-house training, than large companies.

2.6.2 Success of methods for introducing new skills to existing employees

The methods most used by firms to upskill employees are not the methods businesses consider to be the most effective.

While informal in-house training is the upskilling method most used by Australian firms, formal in-house training is the most highly regarded. Nearly 40% of all CEOs judge formal in-house training to be 'very successful' in introducing new skills to existing employees, despite it being the third most adopted upskilling method. This finding suggests that costs, as well as access to and availability of formal in-house training, may be factors restricting current upskilling efforts. Mentoring is also highly regarded as an upskilling method, with 35.9% identifying it as 'very successful'. This is despite this upskilling method being the fourth most adopted by firms.

Informal in-house training and external formal training, the most used upskilling methods, are only considered 'very successful' by 28.2% and 23.8% of respondents respectively.

Manufacturers (39.9%) and construction firms (35.7%) consider formal in-house training to be the most successful way to upskill existing staff. By contrast, firms in the services sector regard mentoring as the most successful method to upskill staff (40.0%). Services sector firms have a much lower regard for informal in-house training and vendor training than their counterparts in the manufacturing and construction sectors.

Formal in-house training is considered the most successful upskilling method in firms of all sizes. Small firms have a higher regard for the upskilling methods of external formal training and informal in-house training than large and medium-sized firms. Vendor training was most highly regarded by medium-sized firms; with 34.4% stating it was a 'very successful' method to introduce new skills to existing staff. Large firms found mentoring arrangements more successful as an upskilling method than their small and medium-sized counterparts.

2.7 Summary of key findings

- 68% of respondents to the *Skilling for Innovation* survey confirmed skills shortages had impacted on their business over the past 12 months; almost two-thirds of these firms stated that they were restricting their innovation efforts.
- Australian businesses consider problem-solving to be the most important 'soft' skill for innovation.
- Communication skills are considered to be the soft skill most lacking in firms.
- Nearly two-thirds of firms use upskilling as a driver for innovation and average expenditure on upskilling is expected to lift moderately this year.
- The method most used to upskill employees, namely informal in-house training, is not the method businesses consider most effective.
- Australian businesses believe formal in-house training and mentoring are more effective ways in which to improve skills.



Chapter 3

Background Research



This chapter examines recent Australian and international research into the importance of workforce skills to the competitiveness of Australian industry. The Australian Industry Group commissioned Peter Noonan and Associates to produce the *Skilling the Existing Workforce Project Background Research Report*. This chapter is an abridged version; the full report can be accessed at www.aigroup.asn.au

3.1 Introduction

3.1.1 Background Research Objectives

The objectives of the Background Research Report into the importance of workforce skills to the competitiveness of Australian industry were to:

- Consider recent key national and international policy developments concerning the skilling of the workforce;
- Consider the nature and forms of workforce skills;
- Examine the patterns of and influence on participation in workforce skills;
- Consider how existing workers learn and acquire skills;
- Consider the growing importance of work-based learning;
- Build an understanding of the importance of broad competence in the workforce; and
- Determine the strategies required for skilling the existing workforce.

3.1.2 Why workforce skilling is important

Recent policy developments confirm that skilling the existing workforce is increasingly important for a range of reasons. These include:

- The consequences of the ageing population and the need to retain existing workers;
- A lack of post-school skills and qualifications acquired by many existing workers;
- The rapidly changing nature of skills required in the modern workforce; and

- The need for a highly skilled and flexible workforce to help enterprises become and remain competitive in an increasingly competitive global market.

Forms of learning for existing workers are varied and include training provided as part of the national vocational education and training system, and learning acquired through non-formal and informal experiences. Informal and non-formal approaches to learning are becoming increasingly important as workers age, but these forms of learning are not well recognised in current policy settings.

Skilling the existing workforce therefore requires a broad approach that can be referred to as a 'Workforce Skills Development' approach. This approach should incorporate all forms of skill acquisition through formal, non-formal and informal learning experiences.

There are many factors which influence participation in, and patterns of, Workforce Skills Development. It is important to be aware that participation declines with age and that there are inequalities in the access of existing workers to Workforce Skills Development opportunities. Decisions to invest in training are driven by the needs of enterprises and the links between business and training strategies.

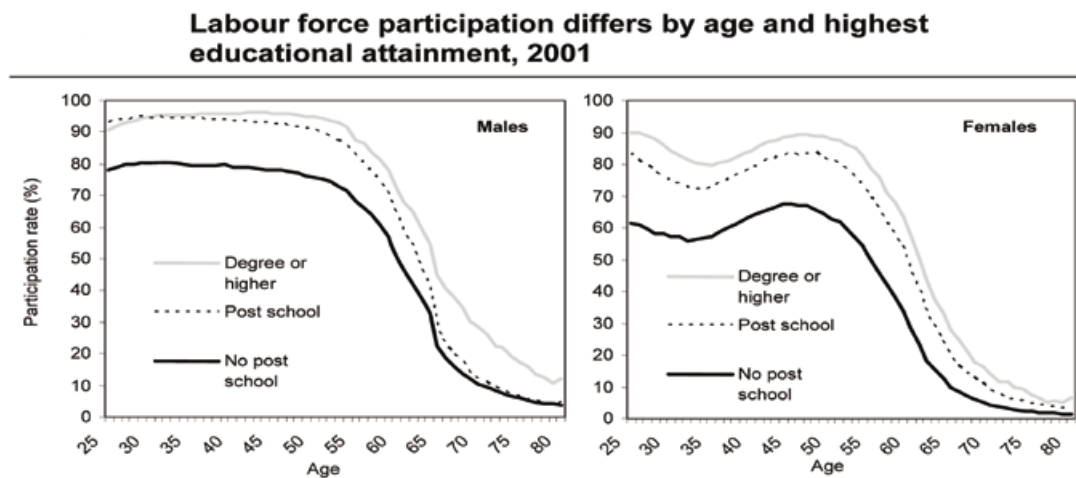
Workforce Skills Development approaches need to be aware of the influences on and patterns of participation, embrace both codified and tacit knowledge, recognise that the workplace is an increasingly important learning site, consider a broader notion of competence and utilise a workplace learning pedagogy that reflects these requirements.

3.2 Current Workforce Participation and Skills Policy

3.2.1 Recent policy influences

Since 2002, a number of major reports have identified the imperative to boost Australia's levels of workforce participation to address the issue of population ageing and to boost the supply of skilled labour. This imperative has been increased by high levels of economic growth, a tight labour market and intensifying skills requirements. International benchmarking based on OECD data suggests that while Australian workforce participation levels were just above the OECD average, they

Figure 7: Labour force participation.



lagged behind other OECD ‘benchmark’ countries, although this conclusion has been challenged by more recent research.⁶

In 2002, the Ministerial Council on Education, Employment, Training and Youth Affairs released a Declaration on Adult and Community Education. The Declaration highlighted the danger of a growing knowledge gap between adult Australians with high levels of skills and qualifications and those without, including, “people who are poor, have disabilities, have low levels of literacy and numeracy, are from non-English speaking backgrounds, are geographically and socially isolated, and Indigenous Australians”.⁷

In 2003, the Department of the Treasury Intergenerational Report placed the issue of demographic change and workforce ageing squarely on the public policy agenda. A subsequent report by the Productivity Commission for the Council of Australian Governments (COAG) illustrated the important relationship between levels of educational attainment and workforce participation. The report highlighted that younger people have higher levels of educational attainment than older people and those with higher levels of attainment were more likely to participate in the labour market and for longer (this effect is particularly marked for women).

The OECD in its Economic Survey of Australia 2004 came to similar conclusions to the Treasury and the Productivity Commission. It found that “international comparisons of structural unemployment, overall employment ratios and participation rates suggest that there is ample room for raising labour inputs in Australia”. The OECD concluded that:

Training and up-skilling persons already in work should be given higher policy priority... Policy initiatives should be closely tailored to the needs of adult workers so that lifelong learning outcomes meet the underlying costs of tuition and production losses from being out of work.⁸

At a state level, the Victorian Government, through the Department for Victorian Communities and Victoria’s Workforce Participation Taskforce, commissioned a report by the Allen Consulting Group on barriers to and options for increased workforce participation in Victoria. That report highlighted the need to increase levels of adult skills and educational attainment as a key policy strategy among all adult population groups.⁹ The South Australian Government released a report following an enquiry into the future of skills development in that state which contained a new focus on skills through the concept of workforce development.¹⁰ Issues related to demographic change and analysis of future workforce skills needs were also highly influential in major reviews of VET in Queensland, Victoria and New South Wales.

Against the background of these reports, it is important to note that the year-on-year effects of population ageing are slight and will not begin to be felt until the end of the decade or later.¹¹

6 2007 Productivity Commission staff working paper.
 7 Ministerial Council on Education, Employment, Training and Youth Affairs 2002. *MCEETYA Declaration on Adult and Community Education, Melbourne*.
 8 OECD 2004 Economic Survey of Australia 2004: Policies to lower unemployment and raise labour force participation.
 9 The Allen Consulting Group, 2005, *Barriers to and Options for increased workforce participation in Victoria Melbourne*.
 10 Lomax-Smith the Hon. Jane, 2003, *Skills for the Future Final Report of the Ministerial Inquiry South Australia* Government of South Australia, Adelaide.
 11 Cully M, 2004, *Older Workers. In Equity in Vocational Education and Training Research Readings Bowman (edit) NCVER, Adelaide*.

The focus on workforce skilling is being driven by a range of factors including high rates of economic and employment growth; delayed and complex patterns of labour market entry by young people; intensifying skills requirements relative to the capabilities of the current workforce; and skills shortages in some occupations and some geographic areas.

3.2.2 Lifelong Learning as a policy driver

For over a decade, the concept of lifelong learning has highlighted the importance of adults continuing to learn over the course of their adult lives, yet the concept of lifelong learning has gained little public policy traction. This is arguably because the benefits, costs, priorities and outcomes of lifelong learning were not well defined for individuals, government and enterprises.

Despite the rhetoric around lifelong learning within the education and training sectors, little has been done on a systematic and comprehensive basis to address the issue, although national and state VET priorities have given increasing priority to the needs of existing, and particularly older, workers. It is also important to recognise that, as the VET system expanded, participation among older adults grew by 25 percent between 1997 and 2001.

Through the 1990s and the first part of this decade, government policy and program priorities continued to be directed to addressing issues related to the immediate years of post-compulsory schooling to raise school retention rates and improve post-school pathways to the labour market, together with reforms to and expansion of the apprenticeship system.

3.2.3 A shift in policy focus

In 2006, the growing policy focus on the connection between adult skills and educational attainment levels across economic development, industry, finance and education and training portfolios and major industry groups resulted in an outcome. In that year, the COAG decisions on Human Capital outlined a new policy direction to:

- Increase the proportion of adults who have the skills and qualifications needed to enjoy active and productive working lives; and

- Improve overall workforce participation, with a particular focus on target groups, in a manner consistent with the long-term interests of the individual and the economy, giving due regard to productivity.

In the same year, the Prime Minister in his Skills for the Future Statement stated:

One of the biggest skills challenges we face as a nation is to improve the basic skills of our workforce. Almost a third of Australians aged between 25 and 64 are without Year 12 or equivalent qualifications. Many adults fall short of functional levels of literacy and numeracy which are now essential for just about all jobs, and certainly all jobs that involve the operation of computers and digital technology. Because many Australians left school or arrived in Australia without the levels of English literacy and numeracy necessary to gain qualifications, they miss out on the opportunity to move into more skilled jobs. This leaves them vulnerable to economic change and Australia misses out on their full potential.¹²

COAG also asked the Ministerial Council for Vocational and Technical Education to undertake a series of reforms to VET including a strong emphasis on Recognition of Prior Learning for adult learners. (A number of projects are now underway in the VET sector flowing from the COAG decision).

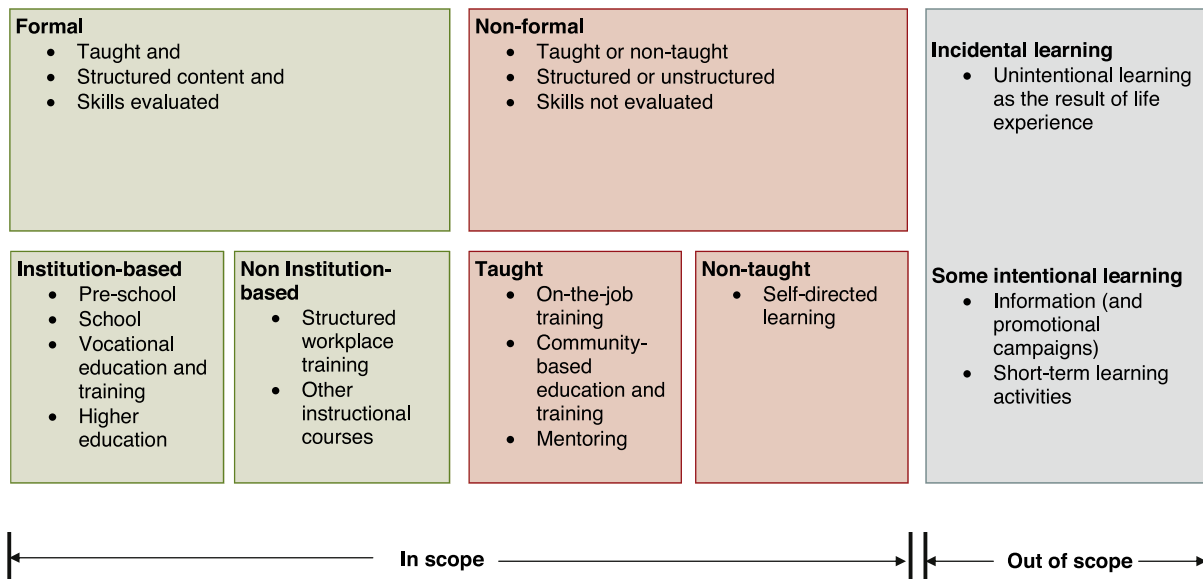
The analysis suggests there is now an appreciation at the highest levels of government and industry of the growing imperative to boost the levels of skills and knowledge in the Australian workforce and adult population. What remains to be determined is the extent to which current policy settings and institutional arrangements are sufficient to meet the challenge, particularly in the areas of skills and knowledge essential for increased workforce participation and productivity. Similarly, it is unclear how and where government and industry should invest to maximise the return on training.

To fully understand and analyse these issues, it is important to review the full scope and context of workforce skills and examine in detail:

- Patterns of participation;
- Influences on participation;

¹² Howard Rt. Hon J Prime Minister 2006 *Ministerial Statement on Skills for the Future*.

Figure 8: ABS Framework for Measuring Learning in Australia.



- The changing nature of skills;
- Broad competence; and
- The importance of workplaces as learning sites.

3.3 Workforce Skills – scope and content

Any consideration of workforce skilling must identify how adults acquire skills and knowledge, and what forms of skills and knowledge are most important.

Strategies to improve workforce skills among the existing workforce are more complex for adults than for younger entry-level learners as adults acquire skills in many different ways. The traditional focus of public policy has been largely limited to the formal education and training sector which plays only a partial role in Workforce Skills Development and one which declines with workforce age. Richardson makes the point that:

Vocational education and training (VET) encompasses employment-related training provided through the technical and further education (TAFE) sector and private training providers. But vocational education is broader than this. It includes the development of job-related skills and attributes which increase a person’s productivity in the workplace. Economists refer to this as human capital. These skills can be learned through the formal education system (schools and higher education); through the vocational education system (TAFE and private providers); and through formal and informal learning on the job.¹³

3.3.1 Forms of learning

The OECD, in its work on the Knowledge Economy, distinguished between formal learning (structured and accredited), non-formal learning (structured but not accredited) and informal learning (non-structured and non-accredited). Non-formal and informal learning are particularly important for adults.

The Australian Bureau of Statistics (ABS), in a paper Measuring Learning in Australia – a framework for educational statistics, has developed a model which illustrates this point, and which also shows what may be in and out of scope in measuring learning in Australia.

Investment in training in Australia has traditionally underestimated employer contributions to enterprise-specific skills development. As a range of sources suggest, experience gained through time spent in the workforce and informal, unstructured learning is often more important in successful workforce participation and progression than formal training and qualifications.¹⁴ This finding is also in keeping with the findings of Ai Group’s *World Class Skills for World Class Industries* report which indicates that both formal and informal learning approaches are important strategies for Australian enterprises. The report indicates that training and learning opportunities may be provided informally in the workplace for a number of reasons including:

- Learning needs may be ad hoc, and not justify the expense of entering formal training arrangements;
- Formal training that adequately matches workplace needs may not exist; and
- Employers and/or employees may not see a benefit in obtaining a formal qualification.¹⁵

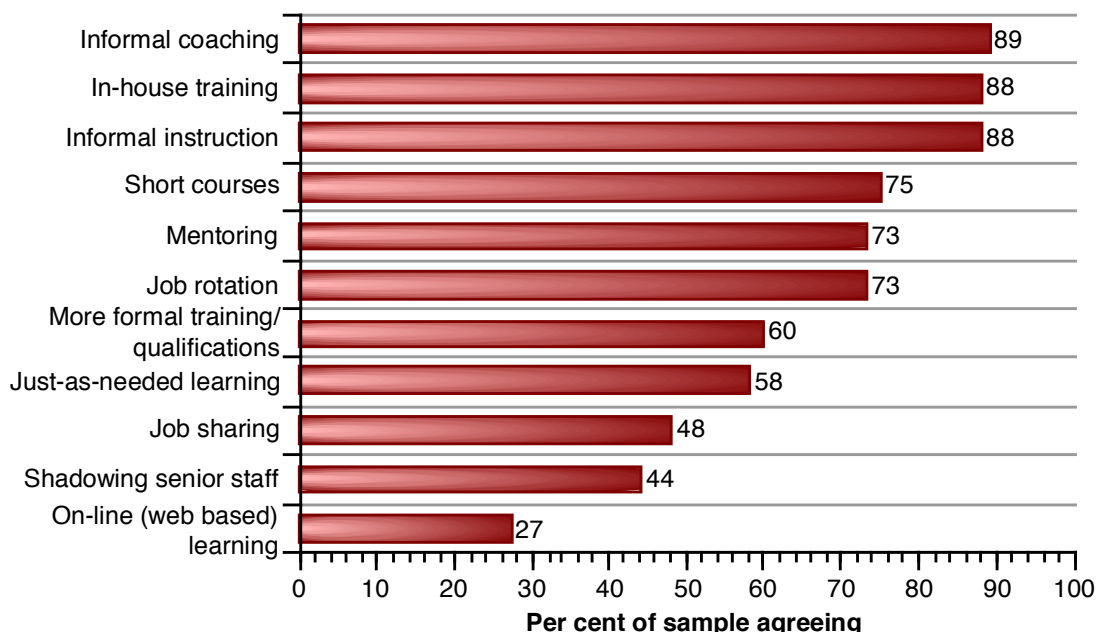
¹³ See Richardson 2004 Employers Contribution to Training NCVET for an overview of the contribution of informal employer sponsored training.

¹⁴ See Mawer and Jackson 2004 *Training of Existing Workers Issues Incentives and Models* NCVET.

¹⁵ Ai Group, p. 35.

DOES THE LEARNING EXPERIENCE IN YOUR COMPANY INCLUDE THE FOLLOWING APPROACHES?

Figure 9: Types of learning opportunities, Australian companies, 2005



The report illustrates the range of approaches to learning employed across the companies surveyed.

The implication of this analysis is that we cannot limit our consideration of workforce reskilling (or to adult learning more generally), to the formal education and training system and particularly to what is often termed institution based learning. As Richardson concludes:

The main implication drawn is that what is happening informally in the workplace is very important for determining the future quantity, quality and character of the skills of the workplace. There is a large public interest in what happens in the domain of on-the-job learning.¹⁶

A broader and holistic approach to workforce skills should not devalue formal learning and nationally recognised qualifications. On the contrary, informal and non-formal learning may well result in an increased uptake of formal learning and increases in workforce qualification profiles. The *World Class Skills for World Class Industries* report highlights the intention of employers to increase the proportion of formal learning over the next three years. Reasons cited by employers include: *‘to reinstate training that had previously been wound down, because formal training more easily meets safety requirements and because employees appreciate the recognition they receive from formal qualifications’.*¹⁷

Formal qualifications are also essential for entry to many skilled jobs, particularly in licensed trades and where career paths, occupational progression and wages are linked to qualification levels. Qualifications are also a broad signal to an employer of essential competence, although specific hiring decisions are likely to take into account other factors. Qualifications, particularly where they are linked to national competency standards, should signify consistency and quality of outcomes.

Acquiring qualifications may also be an important motivation and incentive for learners to participate in formal learning, an issue which is being explored by the OECD in its work on linkages between national qualifications systems and lifelong learning.

3.3.2 Integration of formal and other forms of learning

There is evidence of increasing integration of nationally recognised training with enterprise human resource development and training strategies. This integration is driven by policy changes including the creation of a private training market, the expansion of the apprenticeship and traineeship system, the ability of enterprises to become Registered Training Organisations and the introduction of national training packages. The increasing numbers of training staff familiar with, and able to use, the national training system also appears to be a contributing factor.¹⁸

¹⁶ Richardson, 2004, p. 34.

¹⁷ Ai Group, p. 36.

¹⁸ Smith A, *The Development of Employer Training in Australia*, Charles Sturt University p.13-14.

Australia has a relatively flexible approach which allows learners to undertake individual units or modules rather than full qualifications. However, arrangements to allow individuals to accumulate recognition or credit to build qualifications on a more flexible basis could be improved. This is an important issue as evidence suggests that adults with low skills levels, particularly those not in or marginally attached to the workforce, gain little labour market benefit from module only completions.

Similarly, Recognition of Prior Learning or Current Competence has the potential to enable learners to receive recognition for skills and knowledge acquired through informal and non-formal learning processes. These should not be seen as alternatives to formal learning, but as different learning mechanisms which can be flexibly applied according to individual and enterprise needs and circumstances within a broad workforce development strategy.

3.3.3 Workforce Skills Development – a preferred approach

The need for a more holistic and integrated approach to how workforce skills are acquired and used has led several commentators to suggest Australia should adopt a comprehensive workforce development approach to training. This would include and go beyond, conventional approaches such as the formal education and training system. The concept of workforce development was given formal expression in the South Australian Skills Enquiry where Schofield argued that ‘workforce development’ should be used as a preferred term and policy construct as it would encompass:

..those activities that increase the capacity of individuals to participate effectively in the workforce throughout their whole working life and which increase the capacity of firms to adopt high-performance work practices that support their employees to develop the full range of their potential skills and value.¹⁹

The South Australian Enquiry Report noted:

The existing language of ‘education and training’, ‘VET’ and even ‘skills formation’ does not capture adequately the dynamics of skill in the contemporary world of work where the content of skill is changing and where skills are developed formally and informally in multiple contexts through multiple pathways, physical and virtual throughout a working life. Nor, as noted earlier, does it reflect the multiple contexts in which skills which are acquired are actually used.²⁰

Workforce development can also encompass a broad range of factors to influence how skills are acquired and used including employee health and well being, enterprise culture, management practices, work roles, career and remuneration systems. While these factors can influence and are influenced by skills, for the purposes of this report the term *Workforce Skills Development* is used to focus analysis and discussion on issues related to skills.

¹⁹ Lomax-Smith the Hon. Jane, 2003, *Skills for the Future Final Report of the Ministerial Inquiry*, South Australia Government of South Australia, Adelaide.

²⁰ Lomax-Smith the Hon. Jane, 2003, *Skills for the Future Final Report of the Ministerial Inquiry*, South Australia Government of South Australia, Adelaide.

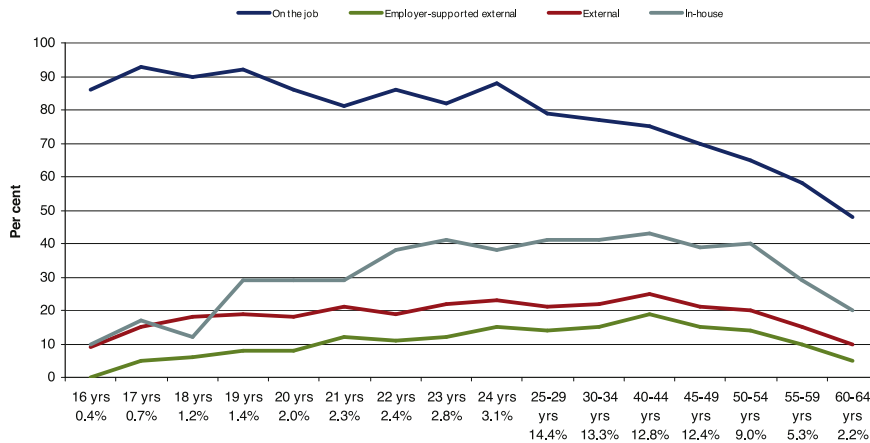
3.4 Issues in Workforce Skills

3.4.1 Patterns of participation in Workforce Skills Development

Age

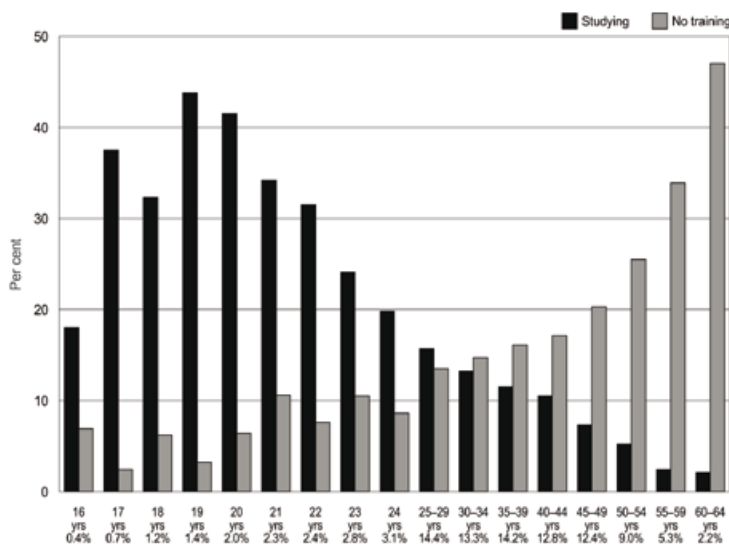
Participation in all forms of workforce learning and training declines with age.

Figure 10: Training by age²¹



This figure also highlights the relatively low percentage of workers participating in any form of external training.

Figure 11: Formal Learning by Age



These findings for Australia are fully consistent with analysis by the OECD through its country reviews and thematic reports on adult learning.²²

²¹ Richardson S., p. 14.

²² OECD, 2003, Beyond Rhetoric: Adult Learning Policies and Practices (Highlights).

Entrenching inequality

Current patterns of investment and participation in both formal and work-based learning entrench rather than alleviate differences in skills levels. That is, those with the highest levels of skills receive more skills training than those with low skills levels. This is even more pronounced for workers whose primary language is other than English, people with low literacy and numeracy levels, the unemployed and those in casual and part-time employment. The OECD concluded:

Participation in adult education tends to follow closely the patterns of success in initial education, with the alarming result that inequalities among young people grow even wider. The same holds true for participation in job-related training. Employers devote on average significantly more resources for training high-skilled, well-educated employees than others, reinforcing skill differences. The International Adult Literacy Survey also found after controlling for other factors – hours worked, company size, professional grade – that those making greatest use of their skills at work are six to eight times more likely to receive company training than the low-skilled.²³

Over time, gaps in educational attainment levels and in skills levels may be reduced as a consequence of higher levels of educational participation and attainment among young people. However there is a long-term legacy as a consequence of the historical patterns of participation and attainment.

This issue cannot only be seen in terms of conventional equality of opportunity and fairness. Static workforce participation levels and under-utilisation of the skills base of the workforce may create inefficiencies, impact on productivity and result in higher outlays for social security (such as health, crime prevention, criminal justice and social welfare systems). The overall effect could reduce the available levels of social capital. In 2005, the then Governor of the Reserve Bank of Australia, concluded that 'equity of access to human capital formation' was one of the fundamental institutional settings for ongoing economic growth and social prosperity in Australia.²⁴

Existing workers are not homogenous

It is important not to treat existing and particularly older workers as a homogeneous group. Older workers comprise both the most advantaged and some of the most disadvantaged individuals in (or not in) the workforce.²⁵

Indiscriminate investment in adult skills development may serve to entrench rather than reduce disadvantage. Evidence suggests that employers are reluctant to invest in lower level skills development because of perceived or actual low rates of return. Employers are more likely to invest in employees with talent who are likely to be the most productive. Accordingly, the greatest scope for public intervention and public investment is in the area of lower level skills.

It is also important to note, that Australia has relatively high levels of adult participation in post-school education, although that participation is not equitably based. Due to high non-completion or module only completions, participation does not appear to result in increases in workforce qualification levels.

3.4.2 Influences on participation

From an analysis of the literature, a range of factors appear to influence both the general level of participation in training and the pattern of participation in formal, as opposed to non-formal and informal learning.

- Participation is strongly influenced by the skills levels required for particular occupations and the way job roles are organised in companies. The higher and broader the skill requirements, the more likely it is that people will receive both formal and non-formal training.
- The nature of the industry is also important with differences in participation levels reflecting differing skills requirements.
- Size is important - larger enterprises are far more likely to invest in training and skills development than small enterprises.
- Public sector organisations are also more likely to invest in skills development than private sector organisations.
- Unionised workplaces are more likely to have high levels of investment in skills development. What is not clear is if this is also influenced by high levels of union membership in public sector and larger organisations, where investment is higher.

²³ OECD, 2003.

²⁴ Macfarlane J 25 August *Geography Resources or Institutions* Reserve Bank of Australia.

²⁵ Cully, 2004.

- Casual and part-time workers are less likely to participate compared to full-time workers.
- People from non-English-speaking backgrounds and people with language and literacy deficits are less likely to participate in all forms of skills training.²⁶

Specific issues affecting participation in Workforce Skills Development include the attitudes and values of both managers and employees. For example, managers are unlikely to invest in training except where they perceive a clear and immediate return, or are required to do so to meet occupational health and safety, regulatory or quality assurance requirements. There is also evidence of resistance to participation in structured training by employees where they:

- Already have the skills and ability to do the job
- feel competing pressures from work and from family obligations; and
- Do not see a likely return on their investment in time, course fees or lost wages if they receive little or no employer support.²⁷

The market segmentation work undertaken by Quay Connection²⁸ for the former Australian National Training Authority identified several market segments of individual learners who were either not motivated or perceived barriers or lack of rewards from further learning. The groups least likely to learn were about the same size as the 'passionate learners' group. Overall, the segments which were less likely to participate in or value learning outweigh the groups committed to and involved in learning. The Quay Connection market research also identified a significant segment of employers who were not interested in training, particularly among small businesses, and that these employers were also more likely to use informal learning and training methods as a means of skills development. However, experience with a range of marketing strategies in the VET sector suggests that decisions to invest and participate in training by both individuals and enterprises are driven by need, relevance, cost, quality and convenience.

For enterprises, Smith suggests that strong linkages between business and training strategies are the most powerful influence on the implementation of training arrangements.

The qualitative research suggested that many more enterprises were conscious of the importance of linking training to business strategy in order to capitalise more effectively on their training investments.²⁹

3.4.3 The changing nature of skills

Ai Group's *World Class Skills for World Class Industries* report highlights the challenges facing Australian enterprises in increasingly competitive and global markets and increased demand for skills at higher levels and changing skills requirements. These demands are intensified by skills shortages in some key occupations and skills deficits in the current workforce in terms of current and emerging occupational demands.

The *World Class Skills for World Class Industries* report concluded that many firms are experiencing difficulty in recruiting people with middle and higher level skills, as a consequence of strong economic growth. It also identified higher skills demands, and that firms are experiencing difficulties in recruiting people with the right kinds of employability skills.³⁰ These findings confirm other research which suggests that skills shortages have both a quantitative dimension – the supply of labour relative to demand – and a qualitative dimension. Even if supply and demand is in equilibrium, do current and potential workers possess the broader skills and capabilities required in contemporary workplaces? As highlighted earlier, qualitative aspects of skills development are equally, if not more, important than the availability of labour with the required technical skills for particular occupations.

In its important work on the Knowledge Economy, the OECD looked in detail at the kind of skills and knowledge that are important in the modern labour market, and in terms of current and emerging needs of enterprises. The OECD has defined knowledge required in a modern economy as:

- *Know-what* which refers to knowledge about facts;
- *Know-why* which refers to scientific knowledge of the principles and laws of nature;
- *Know-how* which refers to skills or the capability to do something; and
- *Know-who* which involves information about who knows what and who knows how to do what.

²⁶ This summary is informed by CEET 2002, Richardson 2004, Cully 2004.

²⁷ See Mawer and Jackson 2004, Smith, Pickersgill Smith and Rushbrook 2005.

²⁸ Australian National Training Authority, 2000, A National Training Strategy for VET – Meeting Client Needs.

²⁹ Smith A, p. 8.

³⁰ Ai Group, p. xii.

These distinctions are important because formal qualifications often reflect *codified* knowledge that is, 'know what and know why' forms of knowledge reflecting accredited standards and curriculum. Tacit knowledge is more commonly acquired through experience, the application of codified knowledge, from observation and working with others, and is more about 'know how' and 'know who'.³¹

As the OECD says, tacit knowledge is critical because:

Codified knowledge might be considered as the material to be transformed, and tacit knowledge, particularly know-how, as the tool for handling this material. Capabilities for selecting relevant and disregarding irrelevant information, recognising patterns in information, interpreting and decoding information as well as learning new and forgetting old skills are in increasing demand.³²

Many technical and professional qualifications are based on an integration of tacit and codified knowledge to meet qualification or occupational licensing requirements. The integration of theory and practice has long been recognised as a valuable, if not essential, learning process, underpinning the apprenticeship model and work practices in most vocations and professions.

The *World Class Skills for World Class Industries* report emphasises the importance of technical skills and broad individual employability skills. This finding is consistent with other national and international studies and with the development of the employability skills framework.³³

The NSW Board of Vocational Education and Training (BVET) in its 2005-2008 strategic plan states that:

It is recognised that workplaces now require more emphasis on innovation and seek adaptable, responsible, ethical workers with higher level interpersonal skills such as group and social problem solving and conflict resolution. These "new" generic competencies will need to be integrated into the future

delivery of vocational education and training programs where appropriate, to complement the technical skills required by employers.³⁴

Another dimension to knowledge and skills requirements in advanced workplaces is the role of 'knowledge work', that is, occupations which are underpinned by the management, application, generation and dissemination of new knowledge and innovation. In their High Level Review of National Training Packages, OVAL research concluded that:

This working knowledge is also rarely codified in text books, formal training programs, competency standards, or procedural manuals and text books. Instead, it is developed within the context and environment of the immediate workplace from the base of relevant skills and knowledge, including technical knowledge, held by workers.³⁵

Together with other factors including changes in pedagogy, the review also highlights that workplaces are becoming more important as sites of learning. The review recognises that the extent to which knowledge work is a reality in Australian workplaces is highly contested and that it may be a description of the future rather than of current realities. However, they conclude:

This perspective leads to the idea that all workers irrespective of the industry in which they work, now require higher levels of cognitive and intellectual abilities than were previously expected.³⁶

The importance of knowledge work leading to increases in skills requirements was advanced by the OECD in 1996 in its work on the Knowledge Economy, and is now supported by considerable evidence of growth in higher skills occupations or skills deepening. Based on projections of increased qualification levels from 2001-2005, Burke and Shah conclude that:

The proportion of employed people with qualifications in 2016 is estimated to be 71.2 per cent compared with 58 per cent in 2005, with increasing numbers achieving qualifications at higher levels. Among the additional VET

31 Noonan P, 2005, *The case for a national workforce development strategy* in Lifelong Learning CEDA Melbourne drawing on the OECD 's work.

32 OECD 1996, p. 13.

33 See Australian Chamber of Commerce and Industry 2004, *ACCI Employability Skills – an employer perspective*.

34 NSW Board of Vocational Education and Training Strategic Plan for Vocational Education and Training 2005 – 2008.

35 See ANTA 2003 High Level Review of Training Packages Phase 1 Report undertaken by OVAL Research University of Technology Sydney *An analysis of the current and future context in which Training Packages will need to operate*.

36 See ANTA 2003 High Level Review of Training Packages Phase 1 Report undertaken by OVAL Research University of Technology Sydney *An analysis of the current and future context in which Training Packages will need to operate*.

qualifications needed, they conclude that 49.3 per cent will need to be at Certificate III/IV, 35.7 per cent at diploma/advanced diploma and 15 per cent at Certificate I/II.³⁷

Similar modelling was also undertaken to support government policy directions for VET in Queensland and Victoria.

Intensifying skills requirements are driven partly by factors such as globalisation, changes in technology, the growing sophistication of consumers, niche markets and product differentiation, and increased regulatory, health and safety and environmental considerations. To meet new skill demands, sophisticated business strategies are now being employed to provide workers with the skills to:

- Think and act strategically;
- Innovate, both inside and outside the firm;
- Foster and maintain relationships, both inside and outside the firm; and
- Use judgement and be comfortable with ambiguity.³⁸

With these changing and intensifying skills requirements, acquiring workforce skills is becoming increasingly important. But can these skills be taught or can they only be acquired through experience or through the integration of different forms of knowledge skills and learning modes?

3.4.4 The approach to competence

Since the introduction of competency-based training in Australia there has been an ongoing debate about the merits or otherwise of competency approaches. However, the strengths of competency-based approaches which emphasise the application and outcomes of learning and provide ample scope for the integration of codified and tacit knowledge, are evident.

In the 21st century, the productivity and competitiveness of the Australian workforce will continue to be strongly influenced by workforce skills and capabilities.

A primary focus should be to ensure the development of highly capable and broadly skilled workers who effectively engage in the workforce and in further learning over the course of their

working lives. The role of generic skills also becomes highly relevant as modern workplaces increasingly rely on communication, teamwork and collaboration, often across multiple sites, supply chains and information channels and in an increasingly global environment.

A second, and possibly even more challenging consideration, is to ensure that learners are able to access and become involved in workplace learning in order to acquire full and effective competence, particularly in areas where tacit knowledge is important and can only be acquired in workplace contexts.

A key consideration emerging from this analysis is that formal learning programs, in which participants are not able to apply skills and knowledge, build tacit knowledge and experience, and develop networks and understanding of work practices and workplace cultures, may be of limited benefit to participants. In addition, participants who have not been engaged in the workplace for some time will be at a particular disadvantage as they are less likely to be able to develop these skills and capabilities. Workplace learning and experience per se will not necessarily promote the deeper and broader skills and knowledge outlined above. This will be driven by the quality of work-based learning and workplace experiences.

The diverse means by which adults acquire skills and knowledge, together with deepening and intensifying skills requirements, highlight the importance of good adult learning and workplace pedagogy – teaching and learning strategies which are relevant, effective, high quality and built around work. The challenge will be to broaden the definition of competence while maintaining the primacy of occupational competence.

3.4.5 The importance of workplaces as learning sites

Workplaces are becoming increasingly important sites of learning, using their own resources or by working in partnership with education and training providers, workplace trainers, facilitators, and through change management and continuous improvement processes. As the *World Class Skills for World Class Industries* report found, enterprises are employing a wide range of techniques to develop the skills and capability of the workforce, with learning and skills development central to strategies to increase competitiveness and attract and retain employees.

³⁷ Burke and Shah (CEET 2006) Qualifications and the Future Labour Market in Australia Paper Prepared for the National Training Reform Taskforce p. ix.

³⁸ Ai Group, p.18.

The OVAL Research report for the High Level Review of National Training Packages argues that:

...if learning has become an integral part of working, arguably formal education and training systems would need to consider what new role they might play in the development of the workforce. One specific implication is that formal education and training is no longer a stand-alone intervention in economic productivity – to have full effect, it must be more systematically linked to wider strategic human resource management strategies encompassing new approaches to job design and work organisation.

The Report goes on to say:

This form of learning is different from that involved in formal award courses in that it:

- Does not rely on the intervention of institutionally based teachers or organisationally based workplace trainers;
- Is not structured around pre-determined vocational outcomes;
- Is not determined by qualifications frameworks and endorsed Training Packages;
- Is not guided by pre-specified content; and
- Is not organised around the enabling disciplines.

Instead the main characteristics of this learning are that it:

- Is context bound, driven by specific and immediate work requirements;
- Emphasises learning over teaching or training as a defining characteristic;
- Depends on the responsibility for learning being spread between a number of people within the workplace; and
- Is consistent with new learning concepts such as learning networks, learning organisations (Senge 1994), and communities of practice (Wenger 2000).³⁹

The OVAL Research report which was part of a research program looking at older workers reviewed the international literature on optimum work-based learning and workforce skills approaches. Its authors conclude that with work-based and adult learning approaches, many different types of learning should be utilised rather than relying on normative and value laden debates which

give primacy to one approach over the other. UK research into learning at work cited by OVAL suggests that:

...learning by doing, workers organising and checking their own work, and, crucially, advice, understanding, coaching and counselling from line managers emerge as keys to the development of effective and productive staff.⁴⁰

The need for pedagogical approaches to be driven by learner, enterprise and industry needs reinforces the importance of developing demand-driven and highly flexible Workforce Skills Development systems. This will ensure a better understanding of what approaches work for particular groups, the need for proper assessment and diagnosis of enterprise and individual skills needs, and better information to match suppliers and providers of skills and training with enterprises.

3.5 Priorities for Workforce Skills Development

The implications of this analysis for government, industry and the VET system are significant and suggest some critical priorities for Workforce Skills Development. These include:

- Improve the level of participation for those with low skills levels in Workforce Skills Development;
- Increase the proportion of workers with high skills levels through Workforce Skills Development;
- More effectively link formal, non-formal and informal learning through Workforce Skills Development;
- Improve information flows about and understandings of Workforce Skills Development; and
- Build world class skills outcomes for individuals and enterprises through high quality Workforce Skills Development.

It will also be important to clarify the respective roles of government, enterprises and individuals in pursuing these and other priorities.

The quality and effectiveness of Workforce Skills Development in enterprises is increasingly becoming more crucial and continues to build on the substantial innovation that is already occurring.

³⁹ Oval Research Chappell, Hawke, Rhodes and Solomon (undated) Major Research Program for Older Workers Stage One the Conceptual Framework.

⁴⁰ Oval Research Chappell, Hawke, Rhodes and Solomon (undated) Major Research Program for Older Workers Stage One the Conceptual Framework.

3.6 Conclusions

Recent policy developments confirm that skilling the existing workforce is increasingly important for a range of reasons including:

- The consequences of the trend of the ageing of the population and the resultant need to retain existing workers;
- The lack of post-school skills and qualifications acquisition by many existing workers;
- The rapidly changing nature of skills required in the modern workforce; and
- The need for a highly skilled and flexible workforce to help ensure that enterprises become and remain competitive in an increasingly competitive global market.

Forms of learning for existing workers are varied and include training provided as a part of the national vocational education and training system, but also include learning acquired through non-formal and informal experiences. Informal and non-formal approaches to learning are increasingly important as learners age but these forms of learning are not well recognised in current policy settings. Skilling the existing workforce requires a broad approach that can be referred to as a *Workforce Skills Development* approach. This approach should incorporate all forms of skill acquisition through formal, non-formal and informal learning experiences.

There are many factors which influence participation in and patterns of Workforce Skills Development. It is important to be aware that participation declines with age and that there are inequalities in the access of existing workers to Workforce Skills Development opportunities. Decisions to invest in training are driven by the needs of enterprises and the linkage between business and training strategies.

Workforce Skills Development approaches need to be aware of the influences on and patterns of participation, embrace both codified and tacit knowledge, recognise that the workplace is an increasingly important learning site, consider the approach to competence and utilise a workplace learning pedagogy that reflects these requirements.



Chapter 4

Consultation Outcomes



This chapter brings together stakeholder views from the formal consultations conducted as part of the *Skilling the Existing Workforce Project*.

4.1 Introduction

The consultation report was prepared by Peter Noonan as a result of national consultations conducted in May 2007 and sought input on the issues, insights and perspectives of enterprises and other key stakeholders. Ai Group's network of Education and Training Advisors and Regional Industry Careers Advisors was also asked to assist in expanding the number and range of companies consulted during the early phase of this project undertaking targeted interviews with 50 companies.

4.2 Summary of Consultation Outcomes

Participants were asked to consider a range of questions based on the issues and analysis identified in the *Skilling the Existing Workforce Background Research Report*.

The main purpose of the consultation sessions was to:

- Consider the analysis and findings of the research report;
- Consider the policy implications of the research findings;
- Gather from enterprises their experiences of skilling existing workers; and
- Gather information from companies to assist in the development of trials within enterprises about skilling the workforce.

Six key themes emerged from the consultations:

- Skilling the workforce is a priority.
- The definition of 'workforce' needs to be redefined to capture casual, part-time employees and those seeking to enter/re-enter the workforce.
- Approaches to training are broad (ranging from mentoring and coaching, to company and technology specific training which is non-accredited, and formal training supplemented by informal training) and need to cater to the specific needs of enterprises.

- Pathways to high level qualifications and skills levels must be created while supporting the retraining of those in the workforce with low-level skills.
- The barriers to training and upskilling the existing workforces could be succinctly summed up as 'cost, time and interest'.
- Skilling is considered a shared responsibility between government, industry and the individual.

These themes reflect the key priorities identified in the Research Report.

4.3 Issues

Consultation participants were asked to consider the issues in addressing workforce reskilling and if the concept of Workforce Skills Development was a useful approach.

4.3.1 Outcomes

While consultation respondents did not identify a significant number of new or additional issues, a number of respondents indicated the analysis was more relevant to larger enterprises and did not sufficiently recognise the issues and challenges facing small and medium size enterprises. The position of micro-businesses and the skills required by owner-managers were issues which need to be considered in subsequent phases of the project.

Dairy industry representative, Victoria

We have a small business focus with the average number of employees being one. We're concerned about the definition of workforce – for our members it's often just the owner. In this industry, the success of training depends on the owner, their support and their skills. The propensity to employ often comes back to the skills of the owner – a lack of appropriate skills/confidence to employ can be a limitation to growth. We're not sure if the approach suits small business.

Older and existing workers are turning the traditional concept of educational pathway 'on its head', typically moving from formal to informal and non-formal learning, rather than 'the other way around'.

The workforce also needs to be defined more broadly to include casual and part-time workers, people currently not in the workforce and those seeking to re-enter or enter the workforce.

The types of approaches to Workforce Skills Development already evident (although that term is not widely used in practice) included a number of issues and barriers enterprises and TAFE Institutes encounter in seeking to address the needs of the existing workforce, particularly in moving to models which are driven by enterprise need, rather than individual student demand.

The key elements of the Workforce Skills Development approach outlined in the research report were supported but responses tended to be directed to immediate and practical needs and issues rather than some of the more theoretical content of the research paper.

Retraining the existing workforce is a clear priority for many firms.

Manufacturer, Victoria

We employ 45 people and the company is competing with imports. We have a group of machine operators who now don't understand the changes in their job; these are largely migrant workers with Year 6-7 education who have gone from operating straightforward machines to working in a touch screen driven environment; they're running 'seriously technical equipment.' The company had to develop an internal training program because we couldn't get the external training we needed.

It is not clear from the consultations whether or not the key points of difference between VET, as currently conceived, and the broader concept of Workforce Skills Development as a model for retraining the existing workforce have been sufficiently well defined or are well understood at this stage in the project.

Participants were looking to share experience and gain ideas, insights and understanding of approaches and strategies they could adopt.

Textile Company, Victoria

We have now developed a very cohesive training package through Certificates II and III – it was necessary to do this to help employees cope with the introduction of new technology. We have recently embarked on a second phase of training sending our fitters and other technicians to Europe to see how the machines are made and operated.

The company has elected to go down the formal training route. Formal qualifications are the basis on which decisions are made about progression within the company though this is not guaranteed. We have brought in vocational students from Germany to work with the company to address specific issues which local university/RTO students couldn't do within the structure of their courses.

4.3.2 Strengths of the Workforce Skills Development approach

There is great potential to link Workforce Skills Development to broader human resource development strategies. This is based on:

- The growing imperative for firms to attract and retain skilled workers.
- The potential to link Workforce Skills Development to industry, regional and even social development strategies; and the potential to further link with 'whole of government' approaches in these areas.
- Recognition of the importance of work-based informal and non-formal learning:
 - Training strategies based on enterprise specific approaches, rather than formal VET;
 - Using a blend of enterprise specific and formal VET approaches;
 - Heavy reliance on formal VET particularly for entry level training and where industrial agreements reflect competency requirements; and
 - Skills development driven by, and integrated with, international requirements, particularly in areas of new and changing technology.

Glass Manufacturer, NSW

We are heavily reliant on internal training due to our unique product – there is no suitable TAFE training in glass-making. Our training is supplemented with management development programs delivered to some staff in our parent company in the UK.

- The potential for Workforce Skills Development to address the needs of enterprise skill needs across occupational and age categories.
- Strategies flowing from more recent priorities to workforce retraining, strategies to more effectively meet enterprise needs, workplace delivery and fee for service delivery to enterprises were seen to be consistent with the Workforce Skills Development approach outlined in the research paper.

South Australian TAFE representatives expressed the view that VET is used as an instrument of social inclusion and TAFE's being told it has to change, but within these broad expectations they're searching for what would be the priorities of a Workforce Skills Development strategy. They know they can't be all things to all people – but how to choose?

- The potential to use Workforce Skills Development as a focus to shape the future role of RTOs, in particular the role of TAFE as a public provider.

4.3.3 Issues for consideration

Some disadvantages – or issues to take into account in further developing the Workforce Skills Development model – were raised. These included:

- Few enterprises are currently at the 'leading edge' of work-based learning required for effective Workforce Skills Development as outlined in the research paper.
- The need for balance between individual learning needs and those of enterprises, for example, the extent to which individuals would gain required breadth and underpinning knowledge in areas not valued or required by enterprises.
- The importance of informal and non-formal learning to be recognised, but not at the expense of formal learning.

- The extent to which an enterprise focussed Workforce Skills Development approach is consistent with TAFE's traditional role in improving equity and social inclusion.
- The extent to which Workforce Skills Development is consistent with current government priorities, particularly in some states experiencing major skills shortages and with a heavy emphasis on apprentice and entry level training.
- Concern at the potential for cost shifting from enterprises to government.

4.4 Priorities

The consultation report suggested that government involvement in Workforce Skills Development could be based on the following priorities:

- Improving the level of participation for those with low skills levels in Workforce Skills Development;
- Increasing the proportion of workers with high skills levels through Workforce Skills Development;
- Effectively linking formal, non-formal and informal learning through Workforce Skills Development;
- Improving information flows about and understandings of Workforce Skills Development; and
- Building world class skills outcomes for individuals and enterprises through high quality workforce skills development.

Consultation participants were asked to review if the priorities were appropriate for Workforce Skills Development and what other priorities needed to be considered.

4.4.1 Observations

A number of relevant observations were made about specific priorities.

- The importance of improving information about the relevance of Workforce Skills Development, and the products, services and training providers required to meet particular needs.
 - There is a perceived need to stimulate demand for skills development within the workforce and in enterprises, and to increase understanding of its value and importance. In the current high demand and highly competitive business environment, skills development was often seen to be in competition with immediate business needs.

- For individual workers, the benefits of participation in Workforce Skills Development were not always clear, particularly in relation to the availability of overtime, sales and production bonuses etc. Specifically, some respondents identified reluctance by some workers to undertake skills development for higher level roles where these roles involved managerial and supervisory responsibilities.
- There is a need to create pathways to high level qualifications and skills levels while supporting the retraining of those in the workforce with low-level skills. Attaining low level qualifications was not considered a strong incentive in terms of return on investment for enterprises, or improved wage and labour market outcomes for individuals.
- Literacy, numeracy, and the capacity to use information technology and communication skills for further learning were identified as specific priorities for low skilled workers. These cannot be easily addressed by enterprises alone and require government assistance and specialist services from RTOs.
- While recognising the increasing complexity of skill demands on their workforce, some enterprises are cautious about a blanket priority to higher level qualifications, particularly in areas where skills are not required by enterprises. This was based on the expectations of increased remuneration which is linked to qualification levels, rather than to productivity and changed occupational roles.
- While the potential to more effectively link informal, non-formal and formal learning is acknowledged, it is not clear how these linkages could be reflected in priorities except by improving the provision of Recognition of Prior Learning.
- Priorities will be shaped by, and vary between, enterprises according to their business needs and strategies.
- There is a need to make the VET system generally, and RTOs specifically, more flexible and responsive in meeting enterprise skills development needs. These issues are explored further in the sections on strategies for Workforce Skills Development outlined below.

4.5 Framework for Stakeholder Involvement

4.5.1 Framework Elements

As most aspects of workforce development are primarily the responsibility of enterprises and individuals, policies underpinning government involvement must be focused on areas where public good is maximised. The paper suggested a framework for government involvement in Workforce Skills Development:

- Targeting public funding to areas where there is under investment in training by enterprises and individuals and/or where there are disincentives to invest;
- Ensuring public funding is driven by client (enterprise and individual) and not provider need;
- Helping to create informed demand by improving information flows about workforce development;
- Ensuring regulation and quality assurance is appropriate and drives continuous improvement in workforce development; and
- Helping to train a high quality training and development workforce.

Consultation participants were asked to review if the framework was appropriate for Workforce Skills Development and define the role and responsibility of government, industry and individuals.

Industrial Gases Company, Queensland

The company has a highly sophisticated training system, not accredited under the National Training System, for their employees. Ideally funding would be made available to deliver the in-house and non-accredited training currently undertaken. The training could be mapped across to national qualifications and a partner RTO could issue qualifications.

Vocational education and training stakeholder, South Australia

If we're to take this issue forward as a country we need to develop definitions of what's reasonable to expect each party to contribute. Should government help enterprises that don't train, or should they help those that do and leverage off this? Or neither? How do you even identify the extent of informal training?

4.5.2 Observations

- Almost universally, Workforce Skills Development was seen to be a shared responsibility of government, enterprises and individuals.
- The need to develop an appropriate framework of roles and responsibilities to guide decisions on 'who pays' for Workforce Skills Development was seen to be a particular priority, with considerable frustration expressed at current public funding models which are seen to limit flexibility and responsiveness, and which were driven by government accountability requirements rather than enterprise needs.
- The need to differentiate between the capacity of larger firms to undertake and resource their own Workforce Skills Development, compared to that of small and medium-sized enterprises was highlighted. The cost of Workforce Skills Development was not adequately recognised by government and within enterprises more appropriate funding models were required.
- The respective roles of RTOs, particularly TAFE, and that of enterprises needed to be clarified in terms of the skills development process. The most valuable contribution that TAFE can make is in the provision of general skills, including literacy and numeracy and foundation skills in technical and professional areas, with specific and advanced technical training being provided by firms themselves, particularly in areas of new and emerging technology.
- The potential to transform the role of TAFE through working in partnership with enterprises to be a facilitator of skills development and not just as a deliverer of training.
- An emerging role for government as the facilitator of independent intermediary and brokerage services to provide advice and support to enterprises to assist in Workforce Skills Development.

4.6 System Level Skills Development Strategies

4.6.1 The Strategies

A range of system level strategies have been raised for consideration by government and industry to meet the priorities for Workforce Skills Development.

- Raising the quality of both formal and non-formal workplace learning through ongoing training of relevant staff and assisting training organisations to become high-quality workplace delivery providers.
- Building strong linkages between non-formal and formal learning, by considering pathways from non-formal and informal learning in developing workplace learning programs, and creating tools which enable individuals to accumulate and record evidence of outcomes from non-formal learning for subsequent recognition.
- Helping to build networks and intermediaries, for example between Human Resource practitioners and RTOs.
- Raising awareness of the importance of high-quality workplace learning.
- Providing more flexible funding arrangements to increase the level of, and links to, enterprise level workforce development strategies.
- Continue the process of developing more flexible qualifications structures and training package frameworks including mechanisms to capture and recognise all types of learning as progress towards full qualifications.
- Ensuring that definitions, design and delivery of competency standards and qualifications are consistent with international best practice and international benchmarks.
- Further targeted investments such as the WELL program, a voucher program for low-skilled adults and State programs aimed at building literacy, numeracy and learning foundation skills to boost participation in formal and non-formal learning among low-skilled workers.

- Expanded government involvement in structured non-accredited learning and training in areas of high and immediate with a view to better linking this training to formal training and recognised outcomes. For example, assisting with the introduction of new technology associated with reduced greenhouse gas emissions; assisting managers and employees to address new regulatory requirements.

Consultation participants were asked to consider the system level strategies.

4.6.2 Observations

A full assessment of all of the system-level strategies was not possible in the timeframe of the consultations, but some consistent messages emerged:

- The importance of building industry networks and establishing intermediaries to advise and assist enterprises with Workforce Skills Development.
- Measures to build the quality of all forms of Workforce Skills Development, specifically, increasing knowledge and awareness of managers and HR practitioners by developing relevant standards, training programs, and learning resources.
- The need to significantly improve the availability, lower the cost and raise the quality of RPL.
- Increase investment in and provision of work-based literacy and numeracy programs, integrated with work and occupational roles.
- Assist in creating demand from individuals, enterprises and industry.
- Improve the responsiveness and quality of providers in meeting enterprise needs. Employers and providers highlighted the need for systemic changes to public funding mechanisms – consistent with models which reflect enterprise (rather than individual learner) need and demand.

TAFE Western Australia representative:

There has been a lot of innovation in TAFE, but the internal systems are not set-up to make this work (eg reporting and funding).

- The need for and value of 'skills sets' to be made available as part of the suite of products and services available to enterprises to meet their specific needs.

Boat Manufacturer, Queensland

We want to provide training to our workers over about the age 25 in chunk sizes. These are employees with good technical skills but they do not necessarily have leadership skills. Small blocks of training in areas like time management and planning skills are the way to go.

Vocational education and training representative, Victoria

Skill sets do not really address the question and there are low rates of return on investment at lower skill levels. Skill sets cannot be the sole response.

- Leading edge and innovative firms will always be ahead of the formal system while Training Packages were seen to reflect compromises between divergent interests (by implication, this suggested that the process for developing and updating Training Packages needed to be more efficient and perhaps explicitly aimed at meeting the needs of leading edge and innovative firms).

TAFE representative, South Australia

In the future TAFE wants to see itself as a facilitator of Workforce Skills Development rather than just the deliverer of training – working with companies on strategies to develop workforce skills and bringing companies together to help them solve issues together. Some initial pilot work has been successfully undertaken but there are issues about follow through and how the findings of the pilot can be mainstreamed.

Networking through industry reference groups has been effective and has helped people learn each other's language.

4.7 Enterprise Strategies

4.7.1 The Strategies

The consultation paper also set out a range of Workforce Skills Development strategies for enterprises including:

- Fully integrating workforce development into business strategies and plans.

- Setting and monitoring clear targets and benchmarks for required skill-levels within the enterprise to deliver on its business goals.
- Developing individual learning plans for employees encompassing both informal and formal learning linked to career paths and employee goals.
- Developing management roles and accountabilities which clearly set out workforce development opportunities for individuals and workgroups.
- Using workforce development strategies as a key element in employee attraction and retention strategies.
- Employing strategies to more effectively link informal and non-formal learning to formal learning by:
 - Ensuring informal and non-formal learning strategies result in high quality learning outcomes through the use of highly relevant and quality learning materials, appropriately trained staff or external providers, and ongoing processes for employee evaluation and feedback;
 - Linking employee appraisal (such as 360 degree feedback) to ongoing learning and professional development;
 - Integrating project and problem based learning approaches in job design and work organisation to address specific enterprise needs;
 - Developing employee learning portfolios to record and accumulate outcomes from formal and informal learning as the basis of Recognition of Prior Learning; and
 - Developing partnerships with Registered Training Organisations to enable programs to link to enterprise needs and build confidence in outcomes from informal and non-formal learning for the purposes of RPL.
- Adopting strategies to broaden participation in workforce development strategies at the enterprise level by specifically targeting low-skilled employees and employees with language, literacy and numeracy needs and developing highly relevant accessible and 'non threatening' programs employing informal and non-formal learning techniques.
- Extending access to workforce development programs for casual and part-time employees where it is currently not available.
- Working with suppliers and contractors to develop workforce skills in common required areas through supply chains.

- Developing strategies to identify, capture, apply and disseminate new knowledge generated through workforce development strategies as part of productivity and continuous improvement strategies, for example:
 - Ensuring project and problem based learning outcomes are properly recorded and their effectiveness in changing enterprise practices properly evaluated.
 - Encouraging and assisting workers to disseminate and apply new knowledge by becoming workplace trainers and/or mentors within the enterprise.

Participants in the consultations considered current, new and innovative approaches to enterprise level strategies.

4.7.2 Observations

The range of detailed enterprise level strategies could not be fully discussed in the time available in the consultations, however many of the suggested enterprise strategies were highlighted as examples of existing practice. Highly structured and innovative Workforce Skills Development models, which were integrated with the overall operations of specific enterprises, were also provided.

Small manufacturer, South Australia

We have grown from 25 to 77 staff in five years and have in place a skills matrix against which staff are assessed and gaps identified. The training is mainly in-house and includes moving people through different factory roles and in time into other areas of the business such as estimating, stores and purchasing. The company only uses outside training for specific training we can't do ourselves. Each person has a career path mapped out and our people always volunteer to take part in training. It is important to the participants that they get formal recognition for the training they complete.

A key theme to emerge is the importance of integrating Workforce Skills Development with enterprise goals and business plans. Workforce skills, skills shortages and employee attraction and retention are dominant business imperatives which need to be addressed though retraining the existing workforce. There was a sense of frustration at the extent to which demands arising from these imperatives could be addressed by the formal VET sector and internally due to priorities and the extent to which training and skills development was valued within firms.

Multi-national Manufacturer, Victoria

The publicly funded training system does not align well with the training needs of the organisation. The system focuses on the achievement of highly structured qualifications which do not necessarily address business imperatives, and sometimes appear to be more about meeting the needs of the RTOs.

These constraints include the extent to which training requirements clash with production requirements, and the capacity to access quality, relevant and cost effective training providers (particularly in areas in new and specialised technology). The impact of the resources boom in terms of salaries available for skilled workers in the resources sector and in some regional areas where dominant firms were heavily recruiting from a limited local labour force were also cited as constraints on willingness by firms to invest in training and their capacity to attract and retain skilled workers.

There is also a need to differentiate between the needs of SMEs and larger businesses.

Specific issues include:

- The importance of initial and ongoing assessment of workforce skills needs as the basis of identifying priorities and strategies for skills development.
- The need for assistance for firms in addressing the needs of low skilled workers, in particular in specialised areas such as literacy and numeracy, particularly for firms with culturally and linguistically diverse workforces.
- The need for better models to more accurately identify the costs of Workforce Skills Development and to attribute costs on a transparent basis across cost centres.
- The need for qualifications and training programs beyond entry level in some enterprises, in particular for workers to move from trades level to management positions, or to take on supervisory, customer relationship, quality assurance and other roles.
- The importance of building the capacity of owners, managers and HR professionals in Workforce Skills Development.
- The importance of, and potential for, strategies to identify and transfer the knowledge and experience of older workers prior to their retirement.

Engineering firm, South Australia

Our company focuses on upskilling existing workers by rotating people through various roles and sites to expand their experience and skills base. While we're happy with the largely informal, 'learn from peers' approach, the current labour shortages make it hard to release people to train others and so it doesn't get done properly.

- The potential to build networks between firms to share knowledge and experience and to jointly deliver training programs and to share costs; including models which would see major firms taking on lead roles for skills development within industries.
- In some instances strong partnerships between firms and TAFE and other RTOs were favoured, in other instances the firm was preferred as having responsibility for internal training, with training providers only used as required in specific areas.
- In some of these examples firms have developed their own internal training accreditation and quality assurance systems which sometimes reflect the international requirements of parent companies.

4.8 Conclusions

Key themes reflected the findings of the research report, highlighted the need to address a number of critical priorities, and assisted in the development of the enterprise trials and case studies which are discussed in Chapter 5.



Chapter 5

Trial Sites and Case Studies – Objectives, Experiences and Outcomes



In Chapter 5, the experience and outcomes from enterprise-based trials of approaches to skilling the existing workforce supplemented by case studies of existing practice, is reviewed. The Australian Industry Group commissioned Peter Noonan and Associates to produce the Skilling the Existing Workforce Trial Sites and Case Studies Final Report. This chapter is an abridged version; the full report can be accessed at www.aigroup.asn.au

5.1 Introduction

Skilling the existing workforce has emerged as a critical priority for Australian industry and Australian governments. This chapter outlines the experience with, and outcomes from, five enterprise-based trials of approaches to skilling the existing workforce, supplemented by five enterprise case studies.

The key concept to be tested in the enterprise trials is the notion of Workforce Skills Development. Workforce Skills Development was defined in the following terms:

Workforce Skills Development refers to strategies and programs which increase the skills, knowledge and capabilities of individuals, and groups, in the workforce and those seeking to enter the workforce.

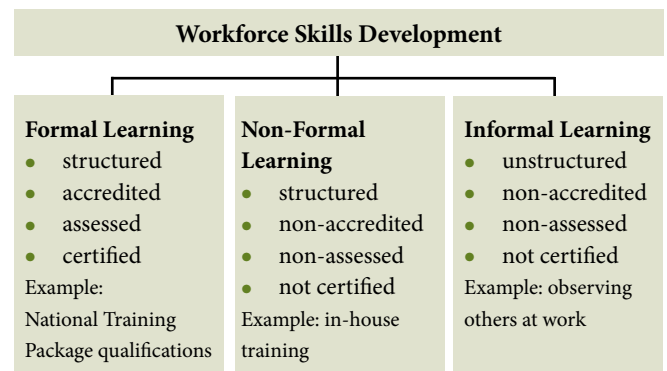
Workforce Skills Development includes formal, accredited education and training programs, but also includes other strategies and initiatives which have an explicit objective of increasing workforce skills, knowledge and capabilities. Examples include but are not limited to non - accredited on the job training related to the introduction of new technology compliance and quality assurance, coaching and mentoring, job rotation and professional development.

Workforce Skills Development needs are driven by and linked to broader enterprise business and human resource objectives and strategies.

The concept of Workforce Skills Development was preferred as a framework as it incorporates all of the mechanisms and processes used by companies to develop the skills of the existing workforce, and is a broader concept than Vocational Education

and Training (VET) and formally recognised and certified training.

Figure 12: Workforce Skills Development



Consistent with this broad definition, a wide range of industry and enterprise level strategies to skill the existing workforce were identified in the research report for trialling and testing with enterprises.

These strategies were grouped into three broad themes for ease of reference and communication with potential enterprises for involvement in the trials.

- **Increasing Skill Levels:** to increase participation among lower and high skilled workers emphasising older workers;
- **Integration of Skilling:** to assess enterprise needs to drive responses and develop tools and processes to more effectively integrate learning into the business and improve the quality of outcomes; and
- **Blended Learning:** to integrate formal, informal and non-formal learning and capture the experience and tacit knowledge of existing workers.

The trials involved active interventions through Ai Group about workforce skilling issues while the case studies examined existing practice in a number of companies.

Possible trial site companies were identified by:

- Companies signalling their interest after attending one of the *Skilling the Existing Workforce Project* industry consultation sessions;
- Ai Group state council member companies who came forward after hearing about the project through Ai Group council meetings; and

- broader Ai Group networks, including Ai Group field staff and others coming forward after reading about the project in an Ai Group publications. While Ai Group networks were largely used to identify the companies, not all of the companies involved were Ai Group members.

Around 15 companies were identified as possible trial sites for the project. In each instance, an initial phone briefing was conducted and, if the broad parameters of the project were met, a site visit conducted. Following the site visit, summary documents were prepared and exchanged with the company to ensure a common view was shared on the way forward and the form and extent of the involvement of both parties – the company and the project team – was clear.

A range of difficulties were experienced in the selection of the enterprises to participate in trials. A number of enterprises were approached and negotiations well advanced before an ultimate decision was made not to proceed.

- *Timing issues:* discussions were progressing well with the human resources or training sections of enterprises before senior management determined that involvement in the project was not a priority for the enterprise at that time. In one instance this was due to an imminent corporate takeover and in another the firm was about to embark on a major acquisition program.
- *Delays in commitment:* negotiations were proceeding for a considerable time before the enterprise began to be less and less responsive to communication about the project. In some instances this was because the enterprise was small and the principal, who is responsible for almost all aspects of the day-to-day operation of the business, had other demands on their time (eg unforeseen production problems) which received priority over the project.
- *Workplace organisation issues needed to be addressed before skilling issues could be considered:* despite negotiations proceeding satisfactorily, some enterprises determined they needed to start with an overhaul of operating procedures. (This was experienced with some manufacturing companies.) The decision was made by Ai Group that this approach would not fit within the parameters of this project and technically, was not a skilling strategy.
- *Changing priorities:* one of the companies took the decision to embark on a restructure meaning it was not possible to follow through on the planned skilling work.

It is worth noting that in all cases, the upskilling of the existing workforce remains an important issue for the companies. Almost all of these organisations have asked to be kept up to date on the project and expressed an interest in possibly being involved in the project in the future.

Arrangements varied considerably between trial sites. In two enterprise trial sites -- the South Australian manufacturer (ET1) and the South Australian hospitality group (ET2) – an external consultant was appointed to manage company involvement with the project. The consultant was responsible for the day-to-day roll out of project activities and liaison with Ai Group project manager.

The Western Sydney manufacturer (ET3) worked directly with a single TAFE Institute. Both the TAFE and the company liaised directly with Ai Group. For the Sydney plastics company (ET4) the local TAFE Institute appointed a business development manager who, working closely with the company, pulled together the identified activities across a very large and dispersed TAFE Institute. The TAFE and the company worked in close contact with Ai Group.

The Northern Sydney manufacturer (ET5) effectively provided a project manager who worked across RTOs, seeking to secure the necessary skilling components of the project and keeping Ai Group updated on progress.

The case study enterprise sites were selected by a variety of means. In some instances they participated in industry consultation sessions and volunteered to assist the project. Other sites were identified through consultation with a broader range of networks where enterprises were known to be conducting successful strategies in the re-skilling of their workforces. A number of enterprises were approached on this basis and agreement was achieved with five to participate in the project.

It should be recognised that the process of identifying and agreeing on objectives for the trial sites was highly iterative with, in some instances, objectives changing due to changing business needs and circumstances over the course of the trials, and as skills needs emerged.

In two cases, trials did not proceed in the timeframe of the project due to circumstances within the enterprise or because it was not possible to source the required skills provision. However, significant insights were obtained into the skills needs of those enterprises; strategies used by the enterprises to meet those needs; and the difficulties of brokering and arranging

training needs analysis and delivery issues with RTOs. There were also insights gained from the experience of working with an enterprise subjected to a sudden downturn in its commercial position. Although the formal stages of these trials did not proceed, insights were documented and have been included in the analysis for this report.

5.2 Trial Sites and Case Studies Summaries

Enterprises engaged in the trials and case studies and their partner organisations have not been named in this report. They are identified through trial or case study numbers and general descriptions. This is consistent with the nature of this project, examining both successful and less successful strategies and experiences and due to commercial in-confidence issues associated with the enterprises.

5.2.1 Enterprise Trial 1 (ET1): South Australian manufacturer

This fast growing, multi-national company in a highly competitive market distributes a wide range of products across the world. The company has 14 sites nationally (two plants in Adelaide) with over 800 employees. The trial examined training and workforce development at one site with 70 employees including machine operators and team leaders working in seven key production areas.

The company has training challenges. With a high turnover of production employees, there is a heightened need for efficient training practices which minimise lost productivity. As a result, development and retention strategies are required. Current practices have not produced a consistent approach to achieving knowledge and skill and efficient work practices. Many of the existing production employees were also considered to have a negative attitude towards training which can probably be attributed to a lack of structure and skill recognition by the company.

This trial was conducted over a period of five months and involved three main stages:

- Stage 1 – research conducted into current work and training practices at the trial site factory which involved interviews with experienced workers from each of the factory’s five production areas, desk analysis of all current training resources, and documentation and

discussions with the Human Resources, Operations, Factory and Quality Assurance Managers.

- Stage 2 – the development of training and assessment resources that met the needs of each department while reflecting the skills as described by the Metal and Engineering competency standards.
- Stage 3 - the development of a training and assessment process and schedule.

5.2.2 Enterprise Trial 2 (ET2): South Australian hospitality group

This is a large privately owned hospitality group in South Australia with a number of hotels scattered across the greater Adelaide metropolitan area. The group operates eight licensed venues and as a Registered Training Organisation operates across South Australia delivering qualifications up to Certificate III in Hospitality. The company has 300 employees working in a wide range of areas including administration, warehouse, kitchen, accommodation, bar, restaurant, bottle shop and gaming.

The company was uncertain of the skill levels of existing employees and unsure which employees wanted to build a future in the hospitality industry (rather than casual employment). The retention and dispersal of staff across the eight different sites were other key challenges for skilling within the company. The company also wanted to raise the skill levels of some staff to enable them to perform supervisory and management roles.

The strategies applied across the whole organisation comprised a number of stages:

- Stage 1 – the development and implementation of a workforce survey for all employees.
- Stage 2 – the development of a proposed business model to link skills initiatives to the overall business plan of the organisation. The model outlined a multifaceted approach to address the challenges of demand surges and changing demographics. The model clustered inter-related strategies at three levels of activity: organisational, enterprise/venue and individual.
- Stage 3 – the development of action plans at the individual enterprise level.
- Stage 4 – the development of individual employee learning plans.
- Stage 5 – the delivery of training consistent with the enterprise and individual training plans.

5.2.3 Enterprise Trial 3 (ET3): Western Sydney manufacturer

This is a well established engineering manufacturing and servicing firm located in Western Sydney employing approximately 70 people. Five individuals comprise the executive team, seven are in support positions, and the remainder are in manufacturing and servicing areas. Approximately 28 employees work in the manufacturing and production areas. The company employs eight apprentices and five are male. ET3 was established in 1946 to operate as a toolmaking firm but from about 1975 began concentrating on larger capacity Computer Numeric Controlled (CNC) and conventional machining, fabrication, project work and machine building.

The company identified its greatest skilling need as the building of capacity in the production, trade and technical areas on the shop floor. In particular, areas such as jig setting, CNC machining, cutting and fabrication were identified as needing attention. The company also hoped that through a proper investigation of their skill requirements and an examination of the skills of the workforce and gap training, an effective performance appraisal system could be developed.

Through existing training such as the Certificate III in Process Manufacturing, the Certificate III in Competitive Manufacturing and the Certificate IV Team Leader, a significant investment had already been made in training the workforce. The company was looking to the Project to realise a greater return on the existing training investment.

Stage one of this project involved a skills audit undertaken by a TAFE Institute.

Subsequently and outside of the scope of this project, indications are that the gap training plan will take the form of a combination of a limited amount of on-site classroom-based delivery, on the job delivery, project-based group work and follow-up coaching and mentoring to existing employees.

5.2.4 Enterprise Trial 4 (ET4): Sydney plastics company

This Sydney-based company specialises in custom plastic injection moulding and provides a number of ancillary services to customers including Computer Aided Product Design, Computer Aided Tool Design, Tool Making, Printing, Sonic Welding and Product Assembly. A number of the injection moulding machines have robotic pick and place units. The

company leads their industry sector in the use of robotics and plans to expand this use of robotics.

At the commencement of this project manufacturing staff had been through the Certificate III in Process Manufacturing (completed by 12 shop floor staff). The company wanted to continue to increase the skills of its workforce but faced a number of challenges:

- As a small company not able to fill a TAFE class, it is difficult to secure delivery of training.
- The equipment the company uses is more current than that available in RTOs. The strong preference is for the training to be delivered on-site – again, small numbers make this difficult to secure.
- Many staff members who need upskilling and re-skilling are reluctant to engage in further training.
- The company has financial constraints which limits the amount it is able to contribute towards the cost of training.
- Training is required in areas that are highly specialised; there are currently few people more skilled than the CEO who can deliver the training.
- Company CEO has been providing informal training, but he believes this could be done more effectively by an external provider.
- There are significant literacy and IT skill deficits among the existing workforce.

At the commencement of the project the company had a staff of 24 with half of the workforce engaged in manufacturing.

Stage One – production of a training strategy document for the enterprise taking into account:

- Current and previous training activities;
- Processes for gaining the support of the workforce; and
- Future strategic directions in terms of operations, equipment, client demands, marketing and succession planning.

Stage Two –

- Conduct a training needs analysis to identify current company training needs and to ensure current skills and training of individual employees is properly identified and taken into account;
- Select RTOs;
- Deliver training; and
- Evaluate training.

The company submitted a document outlining its skilling needs in the face of growing competitive pressure. However the trial did not proceed beyond Stage 1 as the company was forced to retrench a number of employees targeted for skills upgrading due to a sudden deterioration in trading circumstances.

5.2.5 Enterprise Trial 5 (ET5): North Sydney manufacturer

This privately owned company located in the far northern perimeter of Sydney has established itself as a key enterprise in the manufacture of precision machined components used in a range of industries including biomedical, communication, power transmission, automotive, railway, commercial, defence and office automation industries. Major customer industries are defence and medical.

The company has had extensive involvement in the skilling of its workforce using the full range of formal, non-formal and informal strategies:

- In 2007, the company offered English as a Second Language training to all employees with the offer taken up by ten staff members. However, the company does not believe the course was as successful as it could have been due to training being undertaken out of the work context and in an unfamiliar environment.
- The company is very supportive of the standard CNC training delivered by their local TAFE believing it delivers very good basic trade skills to apprentices. Notwithstanding, there is a belief that this training has not fully met the company's needs. ET5 wishes to supplement the on campus training with specific onsite skill-set related training in CNC skills and maintenance training.
- Informal learning, including coaching and mentoring, is used widely and delivered by the Operations Manager and, to a lesser extent, supervisors and tradespersons. Training by equipment suppliers is the main method used for new equipment training and is delivered either on or off site depending on the particular supplier.

Preliminary discussion with the enterprise identified four priority areas:

- Literacy and English language training for a number of migrant employees;
- CNC training for employees who are not apprentices;
- Maintenance and fault finding training for apprentices;

- Mentor training for potential supervisors.

Training needs relate to the technical skill needs of the current workforce as well as the need to further develop existing employees. Where migrant employees are concerned, a lack of language skills is inhibiting further technical skill development. Mentor training is a critical need as the company is anticipating expansion and work re-organisation and has a requirement to develop employees who can assist with employee training as new work and responsibilities are allocated. Employees targeted for technical training would have better career paths if the designated training was undertaken.

The trial did not proceed in part due to the resignation of the Operations Manager during the course of the project and also as a result of the reported lack of capacity of the enterprise's preferred TAFE Institute to be able to provide training needs analysis and delivery in the timeframe of the project.

Enterprise Case Studies

The case studies were undertaken in a range of companies with a strong existing commitment to Workforce Skills Development. Strategies used for Workforce Skills Development were examined and compared to the experiences and outcomes from the trials.

5.2.6 Enterprise Case Study ECS1 – Queensland manufacturer

ECS1, a Queensland manufacturer of earthmoving equipment, is a prime dealer of a major brand of heavy machinery and engines used in the mining, construction, forestry, agricultural, materials handling and government sectors in Queensland, Northern Territory, Papua New Guinea, the Solomon Islands and New Caledonia. The company sells services and provides training and maintenance support. As a leading supplier, the company manages six dealerships within the Asia Pacific Region, a network of 21 locations and 2,500 staff. The company is an RTO and delivers training on behalf of its supplier.

The main skilling challenges faced by the company are attracting sufficient apprentices and retaining skilled employees. A low level of computing skills within the ageing workforce has also been identified as a barrier to training outcomes. The company has successfully utilised a range of skilling strategies including:

- Establishing as an RTO and forming an Institute of Training which oversees all training programs.
- Regularly providing supplier training to maintain the knowledge for existing employees of the latest technology.
- Establishing a post-trade technical training section which equips skilled tradespeople in systems management, engine management systems and diagnostic skills.
- Including a fast-track program within the comprehensive apprenticeship training program.
- Integrating all training practices with career development pathways.

5.2.7 Enterprise Case Study ECS2 – South Australian automation specialist

ECS2 was formed in 1994 and is a leading industrial control automation specialist and independent system integrator, and the largest in Australia for technology integration. This is a cutting edge company focused on making technologies work. The company has a national presence with offices in Adelaide, Melbourne, Sydney, Brisbane, Whyalla and Darwin. There are now over 200 employees and an annual turnover of \$40 million. ECS2 has an RTO as a subsidiary within its operations.

The main skilling challenge for ECS2 is the lack of existing formal training suitable for workers within the enterprise, due to the nature of the industry and the leading edge operations of the company. (The work practices in the enterprise are actually in advance of the codified knowledge in training packages.) There is a need for constant change in terms of skilling and the company needs to ensure their workforce is effectively trained to maintain the competitive advantage in the broad industry area. The major issue then has been for the company to embark on an internal learning program to develop and maintain the skills needed by its workforce.

The main strategies adopted include:

- The formation of a subsidiary company to advance the technical skills of the current and future workforce by providing real-life, real-time practical education and training utilising the latest industrial technology.
- Bringing all new entrants to the company “up to speed” and undertaking an internally developed and non-accredited graduate program of training (six days) operated by the subsidiary company.

- Developing other internal courses and increasingly focusing on e-learning forms of delivery.

5.2.8 Enterprise Case Study ECS3 – Victorian manufacturer

ECS3 is a major Victorian manufacturer of highly specialised scientific instruments, vacuum technologies and contract electronic manufacturing solutions for customers in key worldwide growth markets. There is a very diverse workforce of 470 – 480 employees based in Melbourne. The largest group of about 270 is in manufacturing, with 120 staff in research and development, 40 in marketing and the balance in sales and administration.

The skilling issues are diverse across the workforce. Within the manufacturing area, the primary challenge is the retraining of metal trades workers to high level technical assembly positions, and literacy training. In the research and development area the skilling issues relate to the sub-sets within the staff. For example, in the mechanical area there is an imperative to perform tasks simply and quickly, while in the electronic area the issues are centred on the need for awareness of the latest developments (for example, the need for compliance to new lead free components). For the scientists working in the marketing area, the skill required is the ability to anticipate what customers will require in five years time. Research customers are driven by the need for more accurate instruments and general analysts are motivated by the need for productivity gains. This is an environment dominated by innovation and constant product development.

The company has engaged a wide range of strategies.

- In the manufacturing area, the company negotiated the provision of an ESL (English as a Second Language) course at a TAFE Institute with on the job delivery and utilising the company context in the training.
- The company provided significant levels of coaching and mentoring in skill segments such as soldering, circuit board issues and safety courses conducted on the job with the assistance of a paid instructor working 1:1 with each worker.
- In the research and development area, the main skilling strategies used are internal seminars and guest speakers, often conducted in association with higher education institutions as well as international institutions.
- For marketing staff, strategies involve interacting with

customers in a variety of contexts including exhibitions, trade shows, seminars and lectures.

- Further training is provided in accredited seminars covering areas such as Occupational Health and Safety compliance, management and change management strategies, and Train the Trainer programs.

5.2.9 Enterprise Case Study ECS4 – Queensland Food Manufacturer

ECS4 is a Queensland food manufacturer and significant supplier throughout the world with more than 85 per cent of product exported to the international market. The industry is significant in Australia generating more than 40,000 jobs, directly and indirectly. ECS4 has seven processing mills located over three Queensland regions. The enterprise employs a stable base of 1,500 employees, and expands its workforce by approximately 150 to meet seasonal demands of the industry.

The company faces a number of major skilling challenges:

- Maintaining their skilled apprentices and not losing them to the mining industry.
- Vast distances between the company's various sites and from training providers such as TAFE, making training expensive and adding additional costs like travel and accommodation.
- The impact of downtime on production schedules. While the company experiences strong support for training at its senior management levels, there is resistance from middle management whose priority is meeting production targets. These managers can be hampered in the immediate term by releasing employees for training programs.

To meet their specific training needs, the company employs a range of strategies including:

- Building its own Training Centre which accommodates up to 40 students and provides access to a significant range of equipment for non-trade training.
- Piloting a program to up-skill operators so they can maintain their productivity during off-peak periods. Most operators are currently not qualified, however those participating in the pilot program are undertaking training to gain formal qualification with the Certificate III outcome.

- Upskilling the existing workforce to enable the company to employ a stable workforce year round and reduce its significant training costs associated with the seasonal employment drives.
- Engaging approximately 15 per cent of trade skilled employees in the company's dual trade program. This program enables employees to gain an electrical trade followed by an instrumentation trade and has the benefit of keeping these valuable employees for an additional two years and assisting the company's attrition challenge.

5.2.10 Enterprise Case Study ECS5 – Victorian Chemical Company

ECS5 is a Victorian chemical company established in 1941 in the western suburbs of Melbourne. The company manufactures and distributes a diverse range of petrochemicals and plastics to customers in Australia, New Zealand and the southern Pacific. The site is licensed as a Major Hazard Facility as required by the Victorian Occupational Health and Safety Regulations 2007. The company has experienced considerable downsizing from about 1,100 employees in 1979 to about 260 currently.

One of the company's major skilling challenges is ensuring maintenance workers are up to date and trained on the new technology which is consistently introduced into the industry (for example, high speed rotating equipment). This requires fitters, for example, to be more highly trained to service this new technology. The central issue is the need to ensure that maintenance within the plant is executed at a high standard. Similarly, there is a need for plant operators to increasingly be multi-skilled due to the reduction of the overall workforce and to increasing safety demands. Operators are being asked to work 'smarter' so that the company can 'do more with less'.

A further issue specific to this industry is the increasing demands of health, safety and environment legislative requirements. There is a major focus on the increased need for safety in this industry and a considerable deal of safety legislation as a result. The company needs to continually be aware of the new requirements with all new members of the workforce undertaking compliance training. A related issue concerns the high cost and widespread nature of the consequent training required. The company is not only required to provide the necessary training for its workforce but also for those contractors who are regularly on the site.

The company has utilised a range of different learning strategies in response to the diverse needs of the workplace. These strategies include formal vocational education and training through the national training system, internal company training and blended learning approaches which incorporate both.

It is a stipulation by the company that the workforce participates in nationally recognised training and that all workforce members have qualifications. Most of the training is focused on compliance.

- The Certificate III in Process Manufacturing and the Certificate IV in Chemical Plant Operations qualifications are provided to any existing operator or supervisor at company expense. All of this training is provided on site, is often project-based and provided at times to suit the company.
- A Diploma of Chemical Plant Operations is in the planning stages and will be undertaken by 12 team leaders on a pilot basis. Previously a Certificate IV in Frontline Management was provided to team leaders through a Registered Training Organisation.
- There is specialised training in areas such as fire safety and working at heights conducted on site by a private Registered Training Organisation tailored to suit the specific site requirements at the company.
- The company provides an extensive range of in-house training including three months training in the plant with a mentor on a one-on-one basis.
- The company undertakes internally specific training including corporate training opportunities in First Aid, permits, Health, Safety and Environment, and Major Hazard Facility training. The corporate training includes position description, corporate standards, Information Technology and Human Resource training. Leadership courses are also provided.

5.3 Analysis of Key Themes

5.3.1 Influences on Participation

From the trials and case studies a number of different influences on the participation of enterprises and of employees in Workforce Skills Development can be identified.

Employee Attitudes

The attitude of employees to skills development was an influence on their participation. Employee concerns were reported in

relation to the South Australian manufacturer (ET1) and the Sydney plastics company (ET4) and both have an older and (in the case of the former) and a relatively unskilled workforce. This issue was also evident in relation to the Victorian chemical company (ECS5) where there is a significant commitment to participation in structured training but where older employees in particular, are reported to be concerned about assessment requirements. Resistance to participation in skills development is also linked to resistance to change in work practices including where this links to industrial relations issues such as in the Victorian chemical company (ECS5).

In the case of the South Australian hospitality group (ET2), a workforce survey was developed to identify a range of issues related to employee attitudes to the company's operations and culture, and to participation in skills development. The survey outcomes were used to develop individual learning plans to ensure that skills development was relevant to employee needs and learning preferences, and to overcome potential attitudinal barriers.

Other enterprises used strategies to take account of employee attitudes. The Victorian instruments manufacturer (ECS3) used a one-on-one coaching and mentoring approach and indicated that this approach assisted with any staff who were reluctant to learn. The South Australian manufacturer (ET1) used existing experienced employees to gain the confidence of reluctant workers.

RTO Quality and Responsiveness

The issue of RTO quality and responsiveness did not arise as a major issue in most trial sites or case studies. However, it was reported to be an emerging issue for the Sydney plastics company (ET4) although the enterprise has undertaken a further project with a TAFE Institute in relation to Frontline Management.

The North Sydney manufacturer (ET5) did not proceed due to the reported lack of capacity of the Institute to respond, but the enterprise nevertheless has a strong relationship with that Institute and was not prepared to consider alternative providers. A specific issue in this case was the capacity of TAFE Institutes to provide the level of specialised training required due to equipment and technology issues, and the fact that the company required much finer tolerances in machining and tool making than typically undertaken in TAFE. However, the company seems to value the base level training provided by TAFE.

The South Australian hospitality group (ET2), the Queensland manufacturer of earth moving equipment (ECS1) and the South Australian automation specialist (ECS2) each have significant enterprise RTOs. The Victorian instruments manufacturer (ECS3) has a sophisticated training subsidiary providing a range of programs to the existing workforce and the Queensland food manufacturer (ECS4) and the Victorian chemical company (ECS5) also have substantial in-house operations. These programs are highly relevant to the enterprises' business goals and needs.

The Victorian instruments manufacturer (ECS3) is an interesting example as it took a conscious decision to not become a RTO, notwithstanding its extensive involvement in a wide range of skilling activities – both formal and non-formal. In part this was because the specialised nature of its operations means that the content of Training Packages will always lag behind its leading edge and specific requirements. The company has a high export focus and is working to international industry standards and best practice with a significant focus on real life and real time learning on the latest technology. However, the organisation does work with RTOs and higher education providers.

It is not uncommon for companies to believe that their operations are so specialised that their needs will not be addressed by Training Packages. This was true of the South Australian manufacturer (ET1) but by the conclusion of the project the company had completely revised its views on the relevance of Training Packages. A comprehensive mapping exercise found that all company needs were covered by the relevant Training Package and the company agreed that there was no need to develop enterprise standards (this had been the company's initial position). While too much cannot be made of a single example, it is interesting to note that with expert guidance a company could 'see' its skills in the standards.

The Victorian chemical company (ECS5) also has a significant internal training capability but uses external providers for nationally recognised training and other formal qualifications.

It is interesting to observe that in the two most successful enterprise trials an external consultant was appointed to manage the company's involvement in the trial compared to the other models where the companies either managed the process internally or the TAFE Institute took the lead. Given the limited nature of the trials it would not be appropriate to draw firm conclusions about the most appropriate model but the importance of independent and competent brokers

and intermediaries was a major and consistent theme in the consultation process.

Language, Literacy and Numeracy

Deficiencies in language and literacy were reported as significant issues in the Sydney plastics company (ET4) and the North Sydney manufacturer (ET5), and also from the skills audit undertaken for the Western Sydney manufacturer (ET3) and in ECS3, the Victorian provider of scientific instruments.

Companies have responded in various ways to these deficits including accessing government supported training such as ESL and WELL, providing training that is fully funded by the company, and developing in-house training resources which suit people with low literacy skills.

A general conclusion across the trial sites and case studies is that language and literacy deficits remain a significant issue for companies in upskilling their existing workforce as these skills underpin all further learning. The deficits are experienced by both migrant and non-migrant groups but companies are unsure of the actual literacy levels of staff who are often reluctant to acknowledge the problem or to accept training assistance. There is general agreement that the most effective training in this area is that which is carried out in the workplace as this provides the training context. Often these programs are structured in such a way that the 'language' component is almost incidental to the participants which helps to reduce the stigma. In the case of ET5, the company had sought this type of training but has had to compromise with off-site training which had been only partly successful.

While English language and literacy issues have historically been a barrier to participation in training, it is also clear that they are a driver of demand for training as companies seek to build the skills base of their existing workforce. For a number of the companies, the decision to commit to this training was a medium term commitment to many months of assistance, often to be followed up by subsequent training.

Time and Resources

A general conclusion drawn by the project team is that the time and resources required for the development and implementation of the trials were significantly greater than was originally anticipated. This was noted in two key areas. In the first instance, it took a great amount of time and resources for enterprises to prepare themselves for participation in the project. In some

cases this took several months as it was important to achieve agreement with the appropriate personnel.

The second key area was actual implementation within the trial. Enterprises typically devoted considerable time and resources to actually implement proposed strategies. Where a dedicated and specialist resource was available to the companies, the trials proceeded more effectively than where the individual in the company undertook the project management role in addition to their other responsibilities. In this sense, the most progress was made with the South Australian manufacturer (ET1) and the South Australian hospitality group (ET2).

As some of the trials had not proceeded to full training delivery it is not possible to assess the extent to which the release of workers for formal training was likely to be a major barrier to participation. However, in the case of the North Sydney manufacturer (ET5) the scheduling and costs of training was emerging as a major issue. The company's preference was for training to be scheduled during normal working hours with time being made up through overtime, however meeting these overtime costs was looming as a potential obstacle to the training proceeding, regardless of whether the TAFE Institute had the capacity to deliver the training.

The company was also reluctant to commit to training until the costs and duration of the training were known and the scheduling of training related to the company's production requirements was undertaken. Release of time to attend training was also cited as a barrier to participation for the Queensland food manufacturer (ECS4) and the Victorian chemical company (ECS5).

Demand for Higher Level Skills

A key theme to emerge from the project was the demand by enterprises for higher skill levels. What constituted higher skill levels was defined within the differing contexts of the enterprises rather than a prescribed level. In this sense, the demand for higher skill levels is best considered as relatively higher than current levels.

In some enterprises, the introduction of new technology and work processes required at least some of the existing workforce to acquire high levels of technical skills. For example, the Sydney plastics company (ET4) had identified the need for a number of existing workers to progress beyond Certificate III in Process Manufacturing in areas including programming robots, design and application of pneumatics in automation, process controller

programming skills, and tool design and drawing interpretation skills. The Victorian chemicals company (ECS5) identified the need of maintenance workers to undertake higher order tasks as a result of the introduction of new technology such as high-speed rotating equipment. However it is not clear if this demand for higher skills levels was necessarily for full qualifications or skills sets.

The importance of high level skills is most evident in the South Australian automation specialist company (ECS2) where the company, as part of its global operations and use of emerging and sophisticated technologies, requires a highly skilled workforce. This company is involved in a strategic collaboration with the world's leading technology manufacturers, educators and research institutions but these higher level skills requirements are not defined through Australian competency standards and qualifications. The Victorian instruments manufacturer (ECS3) also illustrates the extent to which non-accredited formal and informal work-based training is used to ensure workers gain the skills associated with the use of new technology and the introduction of new product lines which are highly specific to the enterprise.

The demand for high level technical and occupational skills for a significant proportion of the existing workforce was not evident across all enterprise trials or case studies. The skills audit undertaken by a training provider for the Western Sydney manufacturer (ET3) for example, mainly identified specific skills needs at the operator and trades levels rather than higher skills levels. The objective in the South Australian manufacturer (ET1) and the South Australian hospitality group (ET2) was more to ensure the existing workforce acquired essential base level skills as in both instances the existing workforce was largely unqualified and turnover rates were high. In the case of the South Australian hospitality group (ET2), a strategy was designed to increase the supervisory and management skills of existing workers and involved progress to higher skills levels.

Another important driver appears to be training associated with occupational health and safety for the Victorian chemical company (ECS5), the acquisition of 'tickets' for specific licensed occupations, and the broadening of skills such as fault finding and preventative maintenance at the trades level in the North Sydney manufacturer (ET5).

It must be recognised that this overall finding may be a function of the trials across the workforce. If specific workforce segments had been more precisely targeted, for example those with

existing trade and entry level skills, a different outcome may have been evident.

Demand for Generic Skills

In a number of enterprises, generic skills requirements were identified, together with broader and/or higher technical level skills.

Enterprises identified the need for their employees to build their skills in:

- *Learning* – in the case of the Sydney plastics company (ET4) employee reluctance to take up formal training opportunities and the difficulties the CEO experienced in engaging employees in non-formal learning were identified as a major skilling issue.
- *Initiative and enterprise* – this was identified most strongly as an issue for the North Sydney manufacturer (ET5). Inefficient operating procedures were standard at the company when relatively straightforward adjustments to work practices would have resulted in significant performance improvements. This was a stumbling block the company found difficult to overcome.
- *Planning and problem solving* – as the Western Sydney manufacturer (ET3) shifted its business focus towards bigger project work, a need was identified to expand staff capacities in collaboration, information collection and sharing. Staff noted that good job planning made a significant difference to the efficiency of the work done. It was also noted that planning and problem solving skills go hand-in-hand as staff often have to modify their work method in response to tool or equipment shortages. The agreed approach was for these skills to be further developed by creating a collaborative and participative work environment where staff can have the opportunity to share skills and experience with each other while working on implementing workplace improvement projects. This informal and non-formal skilling is to be supplemented by staff undertaking qualifications from the Competitive Manufacturing Training Package which includes problem solving units.
- *Technology* – for the Sydney plastics company (ET4), paper-based quality assurance processes could not be replaced by an on-line system until the IT skills of the staff were improved. This became a pressing matter when the company identified the need to increase the extent of automation.

In a number of the trials and case studies, the development of skills in mentoring and workplace training were identified as priorities (e.g. ET1, ET4, ET5 and ECS3). Existing workers identified as having potential were able to develop their skills within the company to train other staff in both technical and generic areas. Although ET4 did not proceed, a by-product of the project is that the CEO has decided to undertake a Certificate IV in Training and Assessment so that he can develop a more structured approach to Workforce Skills Development in the future.

For the South Australian manufacturer (ET1) one of the effects of operating in a highly competitive manufacturing environment is the reduction of middle management as a cost cutting measure. The functions and responsibilities of middle management which included, in many cases, training and development, are then either transferred to senior management or to operational supervisors and front line management such as team leaders. Both of these groups are usually ill equipped to handle formal training and development, so training often lapses or reverts to the easiest format such as “buddying”. In the case of the Queensland food manufacturer (ECS4) approximately 25 per cent of operators are trained in four key competencies from the Training and Assessment Training Package, ensuring that one operator from each station is available to provide on the job training support to new employees.

5.3.2 Increasing Skill Levels

In all of the enterprise trials and case studies, there was a strong and consistent emphasis on the imperative to increase the skill levels of enterprises’ existing workforce. The drivers of this imperative varied between, and even within, the enterprises.

Consistent with the research report and consultation outcomes for this project, this emphasis on increased participation and skills development for the existing workforce appears to be motivated by several factors.

- One key factor was the difficulty of recruiting and retaining younger workers, including through the apprenticeship system, and in some instances due to competition from the resources boom. This is a particular issue for the Queensland food manufacturer (ECS4) as it has operations in Queensland and employs tradesmen in areas of high demand to the resources sector including fitters and turners.
- A further factor is the gap between existing workers current skills and the emerging skills requirements.

This was most evident in the Sydney plastics company (ET4) where the enterprise was engaged in a major project to reduce costs through greater use of robotics and automated manufacturing requiring a significant increase in the skills of some existing workers.

- There is a need to have all employees confident in the basic and essential technical and occupational skills used across the enterprise. This was particularly the case with the South Australian hospitality group (ET2) due to a large number of employees across different sites, and the need for those employees to be competent across a broad range of hospitality related skills.
- Increased language, literacy and ICT skills particularly in enterprises with a high proportion of workers from non-English speaking backgrounds or staff with literacy needs who were required to use new technology and work processes, are imperative. This was most evident in the manufacturing companies subject to a combination of structural and technological change and competitive pressures such as the South Australian manufacturer (ET1) and the Sydney plastics company (ET4).
- In some enterprises a further motivation related to the process of induction and ongoing development of employees in enterprise standards, work processes and company culture and values. It is interesting that this factor is most evident in the enterprises where they are RTOs such as the Queensland earthmoving manufacturer (ECS1) and the South Australian hospitality group (ET2), or where these enterprises have significant and sophisticated training operations and organisations operating within their structures such as the South Australian automation specialist (ECS2).
- Another motivation was to utilise skilling as part of a process of introducing common skills and standards across the enterprise. This seems to have been a significant driver in the South Australian manufacturer (ET1) within a single manufacturing site, and across the different sites of the South Australian hospitality group (ET2) where the outcomes have been embedded in a sophisticated business model.
- In several trial sites, a significant driver of Workforce Skills Development was a company management desire to broaden responsibility for, and improve the quality of, work-based learning. Existing workers would be trained in higher level technical skills and in workplace learning, assessment and frontline management with the objective of enabling management to focus on core responsibilities (e.g. operations and customer relations) and ensuring existing informal and ad hoc arrangements

for on the job training and competency assessment were standardised and quality assured.

5.3.3 Integration with Enterprise Business Goals and Planning

It is clear from the enterprise trials sites and case studies that Workforce Skills Development is most successful when it is driven by and integrated with broader enterprise business goals and strategies. The case studies collectively represent companies which have already put in place differing but comprehensive internal frameworks and structures to continuously skill their existing workforce which is now regarded as 'core business'.

The Queensland earthmoving manufacturer (ECS1) adopted an integrated and proactive approach to training which included establishing itself as an RTO with its own 'Institute of Training' to oversee all training programs for the company. This is a key strategy to attract and retain employees and develop its skill base to enable the company to achieve its growth objectives.

The South Australian automation specialist company (ECS2) has adopted a similar approach although it has created a fully owned subsidiary company dedicated to training. Given the nature of this industry, it is of paramount importance to the company to maintain a technological competitive edge. The skilling and training of a highly technical workforce is central to the company's business strategy.

The Victorian instruments manufacturer (ECS3) has a similar orientation to the South Australian automation specialist (ECS2) in terms of the need to remain highly aware of technological developments. The Victorian operation is part of a global and highly competitive organisation which, in addition to the manufacture of instrumentation, has a significant focus on research and development and marketing. Skilling and training are very significant elements of the business planning although the company has not adopted the structural approaches that the previous case studies have implemented.

The Queensland food manufacturer (ECS4) also considers training to be central to its overall business plan. It has a dedicated Training Manager and completed its own Training Centre as a reflection of the direction to increase in-house training. The company has a dispersed and (in parts) isolated workforce that makes training difficult. There is also an ever-present issue of the loss of employees to the mining sector. The skilling and retention of the trained workforce is considered

to be an important component of the organisation's overall business plan.

The Victoria chemicals company (ECS5) has a different focus in terms of integration with the business plan. The company site is licensed as a Major Hazard Facility and a great deal of the training undertaken by the company is based on compliance. Occupational health and safety and environmental legislation, regulations and requirements are central to the operation of the company and it is essential that the workforce and allied contractors are trained to these standards. Despite the considerable downsizing of the workforce in recent decades, the company has maintained the position of a Learning and Development Coordinator separate from the Human Resources department, in recognition of the centrality of skilling and training to the overall business plan of the company.

Although the initial stages of the project work with the South Australian manufacturer (ET1) proceeded well with the skills needs identified through the skills assessment process, the development and implementation of the proposed skills passports will require a further significant level of financial support and commitment of time and resources from senior management. The outcomes of the work with the South Australian hospitality group (ET2) reflect the overall business strategy of the company to increase staff retention, broaden the employee skills base across hospitality functions and to adopt a more consistent set of standards across its work sites - but will also require ongoing commitment by the company to be fully implemented. The support of the Managing Director of the Western Sydney manufacturer (ET3) has been essential to the skills audit which has been undertaken, but ongoing commitment will be required in the future if the needs identified in the audit are to be addressed.

In the case of the Sydney plastics company (ET4) the project objective was to link Workforce Skills Development to the company's overall change strategy to utilise its robotics technology more effectively as part of a major cost reduction and increased productivity strategy. However the skills intervention came too late in the change strategy and at the wrong time in the economic cycle for the company.

The primary reasons why the trial with the North Sydney manufacturer (ET5) did not proceed were in part because of a change in personnel within the company but also because of a reliance on a response by the training provider with which it has an established relationship. This suggests that the objectives

of the project were not sufficiently embedded in the company's broader business priorities.

5.3.4 Blended Learning

Blended Learning integrates formal, informal and non-formal learning and captures the experience and tacit knowledge of existing workers. All trial and case study enterprises used a range of strategies for Workforce Skills Development.

A number of enterprises utilised formal and nationally recognised training delivered through TAFE or through an enterprise RTO such as the Queensland earthmoving manufacturer (ECS1) and the South Australian hospitality group (ET2). The extent of this training varies from comprehensive and across the workforce (such as in the case of the Victorian chemical company ECS5) to a more limited approach to specific categories of employees (such as the practice in each of the NSW trial sites ET3, ET4 and ET5). The preferred approach is on the job delivery. This type of training was also facilitated by those enterprises with an in-house training capability such as the Queensland food manufacturer (ECS4) and the Victorian chemical company (ECS5).

A further form of learning was non-formal and non-recognised but highly structured training delivered through an in-house training capability. In this approach outcomes are strongly linked to enterprise production requirements as illustrated in the Queensland earthmoving manufacturer (ECS1), the Victorian instruments manufacturer (ECS3) and the Victorian chemical company (ECS5) and to driving enterprise culture and values.

Non-formal learning was evident through the use of structured intensive coaching and mentoring directly related to new technology and product lines as a structured approach to Workforce Skills Development (refer the South Australian automation specialist company ECS2).

In addition to formal and non-formal learning, there were also examples of informal learning. This occurred mainly through limited and ad hoc mentoring and coaching undertaken by company managers, team leaders and experienced staff across most of the trial sites. In some circumstances this was supplemented by learning through teams as evidenced in the Western Sydney manufacturer (ET3).

The use of these different Workforce Skills Development strategies and the importance of workplace based informal and non-formal learning is consistent with the analysis in the Research Report prepared in the first stage of this project and with the outcomes from the survey of enterprises undertaken for Ai Group's *World Class Skills for World Class Industries* report. The organisations most effectively blending these approaches to learning appear to be those with the most substantial and sophisticated in-house training capabilities, that is, the case study companies. The companies involved in the trials could be characterised as wanting to make the transition from ad hoc to integrated approaches to Workforce Skills Development, while the case study companies have largely made that transition.

Skills audits and identification of individual and collective workforce skills needs were an essential first stage of each of the enterprise trials, but the extent to which these assessments would drive specific Workforce Skills Development strategies is not clear.

The case study enterprises with their established internal training capacity and expertise and knowledge of the VET system appear to be in a stronger position to determine their skills requirements and make informed judgements about how those requirements can best be met, including the capacity to blend different learning strategies appropriate to different learner needs. These different capabilities may reflect the size of the companies, however two of the enterprises involved in the trials were of a similar size or larger than the case study companies.

The importance of using existing experienced workers across a range of these strategies can clearly be inferred from the enterprise trials and case studies and was a major step in seeking to gain support from other employees in the South Australian manufacturer (ET1).

5.4 Conclusions

The lessons of the trial sites and case studies, patterns of participation and influences on participation in Workforce Skills Development, and national policy implications for the future are discussed in Chapter 6.



Chapter 6

Conclusion



Chapter 6 reflects on the lessons of the trial sites and case studies, reviews the patterns of participation and influences on participation in Workforce Skills Development, and discusses the national policy implications for the future.

6.1 Comparison with Research Report

The *Background Research Report* (Chapter 3) and *Consultation Outcomes Report* (Chapter 4) to this project referred to patterns of participation and influences on participation in Workforce Skills Development. The experiences of the trial sites and case studies enable some further reflection on these.

6.1.1 Age

The research report indicated that age was an important factor for those participating in learning in the workforce – the general pattern was that participation declined with age. This particular pattern was not reflected in the trial site and case studies experiences in this project. Across both groupings employers did not make distinctions about access to learning based on age. It was rather the case that the enterprises needed increases in the skill levels of employees regardless of age. It is understood that the particular circumstances of the enterprises participating in this project are not necessarily able to be generalised to the whole workforce.

6.1.2 Entrenched differences

A further factor cited in the research report was that current patterns of investment and participation in formal and work-based learning tended to entrench rather than alleviate differences in skills levels. The findings in the enterprises involved in the trial sites and case studies were somewhat mixed in relation to this factor. There were several examples of skilling opportunities being provided to the low-skilled such as the South Australian manufacturer (ET1) and the Western Sydney manufacturer (ET3). There were also examples of higher-skilled employees attracting additional skilling such as the supervisory and managerial skills provided to selected employees in the South Australian hospitality group (ET2), many employees gaining access to high level technical expertise in the South Australian automation specialist (ECS2) and the Victorian chemicals company (ECS5).

6.1.3 Enterprise size

The project findings confirm that firm size is a contributing factor to workforce participation in skilling. The successful case studies were all relatively large with the South Australian automation specialist (ECS2) and Victorian chemicals company (ECS5) the only examples with only a few hundred employees. There was a broader range in the trial sites with employees numbering in the low twenties (ET4 and ET5) up to 800 (ET1). The project experience reflects that larger enterprises were more likely to provide more comprehensive skilling approaches than smaller enterprises where the approach was generally more restricted. It is also noteworthy that the two trial sites with the smallest number of employees, the Sydney plastics company (ET4) and the Northern Sydney manufacturer (ET5), had the greatest difficulty in proceeding to the implementation of skilling stage. Firm size was a factor in this, especially in the case of the Sydney plastics company (ET4), as they were unable to sustain skilling activities in the face of an economic downturn.

6.1.4 Language and Literacy

The Research Report indicated that employees from non-English speaking backgrounds and those with language and literacy deficits were less likely to participate in all forms of skills training. The experience of the project confirmed the importance of low levels of literacy being prevalent within the workforce. In addition, the experiences of this project demonstrate a wide-ranging preparedness by enterprises to address the issue including at their own cost prior to the commencement of this project. It is typically viewed as a pre-condition for more industry specific or technical training. The Northern Sydney manufacturer (ET5) had invested in English as a Second Language training and was considering further training in this area as an essential basis to raise the skill levels of the employees. Literacy training was also a feature of the approach of the Victorian provider of scientific instruments (ECS3) for the manufacturing component of its operations. The project experience indicates that literacy training in particular is a prerequisite for other forms of skilling especially technical training.

6.1.5 Attitudes and Values

As the Research Report suggests, the attitudes and values of managers and employees is also an important factor affecting participation. In some instances, such as the South Australian manufacturer (ET1) and the Sydney plastics company (ET4),

some employees had a negative attitude to training due to a lack of structure and skill recognition by the companies. The Queensland food manufacturer (ECS4) experienced resistance to training from middle management due to their focus on production targets. In contrast, the employee survey conducted by the South Australian hospitality group (ET2) reflected a high level of interest by the employees in training opportunities.

The range of strategies used or proposed to be used by the companies also supports the emphasis in the Research Report on the importance of informal and non-formal, as well as formal, learning.

6.2 Summary of Findings

6.2.1 The Centrality of Skilling the Existing Workforce

Consistent with the overall objectives of the project, the development of the skills of the existing workforce is a major priority for all of the trial site and case study enterprises. Consistent with the framework adopted for the project, all enterprises used a breadth of approaches to skills development including formal, informal and non-formal learning methods which represented a Workforce Skills Development approach. This was the case across different industries, firm sizes and the different states that participated in the project. The challenges of developing and delivering effective Workforce Skills Development were greater with small and medium size enterprises particularly those facing significant competitive pressures requiring cost reductions and productivity improvements.

Companies demonstrate a strong willingness to invest in all levels of Workforce Skills Development where there is a clear link between skills development and broader enterprise strategic goals.

6.2.2 Pre-Conditions for Workforce Skills Development

The lessons of this project indicate that a Workforce Skills Development approach is most effective when certain pre-conditions are met. These pre-conditions include:

- A clear linkage between Workforce Skills Development and the broader enterprise business goals;
- Implementation of Workforce Skills Development

initiatives as part of the overall business processes of the company;

- Flowing from the above, a clear identification of skills needs by the enterprise;
- Support for the approach by senior management, including senior management beyond training and human resource departments within larger organisations;
- Proper resourcing of Workforce Skills Development;
- A preparedness by company employees to undertake the training;
- The adequacy of employees' English language literacy skills;
- A capacity by external and internal education and training providers to understand the broader business needs and drivers of the enterprise and the skills needs which flow from these drivers; and
- A capacity to provide skills recognition and training services that meet these needs in a way which has least impact on cost and productivity.

6.2.3 Assisting Enterprises to meet Pre-conditions

To achieve many of these pre-conditions, enterprises need access to high quality information and advisory services. This includes effective identification and analysis of their current and future skilling needs and information and advice about potential skilling providers. In some mainly larger enterprises such as those in the case studies, these services may be largely provided within the enterprise. In many particularly smaller and medium size enterprises, access to independent and reliable services in the initial 'diagnostic' phases of Workforce Skills Development is important.

The most successful of the enterprise trial sites received direct access to advisory services and this was a critical factor in their success. The use of these services was more resource intensive in the initial stages than originally anticipated and enterprise needs and circumstances changed significantly in some of the trials.

6.2.4 The Importance of Workforce Literacy

The project confirms the importance of workforce English language literacy and provides a practical demonstration of the impacts of widespread literacy difficulties on Workforce Skills Development. The findings of this project are consistent with the findings of the 2006 Australian Bureau of Statistics

work on the OECD Adult Literacy and Lifeskills Survey which showed that large proportions of adult Australians do not have adequate literacy, numeracy and problem solving skills to operate effectively in the workplace. There are a range of literacy programs available which companies access but comprehensively addressing this problem is limited by the absence of a national policy on adult literacy which expired in 1996. These findings have significant implications for Workforce Skills Development.

6.2.5 Role of Registered Training Organisations

Enterprises were prepared use external RTOs when appropriate to their workforce skills needs and when the RTOs could demonstrate a capacity to understand and meet these needs. There was a preparedness to use RTOs particularly when valued relationships had already been established. In some instances project objectives could not be realised where the RTO was not able to respond to enterprise needs within the required timeframe. Those enterprises that also had a RTO as a part of the organisation were also more likely to experience success due to this increased knowledge of the training system and its operations.

6.2.6 The Importance of Initial Skill Assessment

The identification of required skills, skill audits, skills assessment and recognition emerged as very important initial steps in Workforce Skills Development. Often enterprises needed assistance to come to terms with these issues. In such circumstances enterprises were often unable to clearly articulate their workforce skills needs and in some instances were unaware of the current skill levels with their workforce. External advisory services played a very important role in this regard.

6.2.7 Skilling Needs and Approaches to Learning

While there is some evidence of Workforce Skills Development driving demand for nationally recognised, higher level VET units of competency or full qualifications, this demand was likely to be limited to a select group of employees. In many instances, enterprises met their higher level needs through workplace based non-formal and informal learning, particularly in relation to technology and products specific to the enterprise.

Demand is stronger in base and entry level technical and occupational qualifications across the existing workforce to support multi-skilling, for language and literacy programs, employability skills including communication. Demand for

workplace trainer and assessor and front line management skills to improve the quality of informal and non-formal workplace learning is also evident. Knowledge transfer from experienced and retiring staff is a priority issue that is gaining importance but strategies to achieve this are not yet evident on a systematic basis.

6.2.8 Importance of Competency Standards

The project findings highlight the continuing importance of industry competency standards as benchmarks for skills assessment, recognition of current competence, quality assurance and consistency. VET competency standards and qualifications raise the quality and consistency of Workforce Skills Development and provide important benchmarks for certification and skills recognition within enterprises. Competency standards and qualifications need to be relevant and sufficiently flexible to meet diverse needs of the workforce and particularly the requirements of leading edge enterprises. The process of the continuous improvement of National Training Packages by Industry Skills Councils to engage leading enterprises is important in this context.

6.3 Policy Implications

The findings have some important implications for policies aimed at increasing workforce skills levels in Australia.

6.3.1 Enterprise Focus for Workforce Skills Development

The findings confirm the priority being given by enterprises to skilling the existing workforce and highlight the complexity of the challenge of meeting that priority. There is the potential to reach a large number of existing employees by working with enterprises but the resulting objectives and strategies have to be consistent with broader enterprise business objectives. These need to be supported by management and be focussed on assisting the enterprise to increase productivity, competitiveness and business sustainability. The current range of enterprise strategies need to be supported and the quality of non-formal and informal learning needs to be improved. A related implication is a shift in focus from supply to demand. Enterprise skilling demands need to be central to skilling the existing workforce rather than the supply of skilling and training by providers.

6.3.2 Advisory and Brokerage Services

The report findings emphasise the importance of advisory and brokerage services to enterprises to assist them to identify their workforce skills needs and the most appropriate strategies to address those needs. The trial sites that were able to make the most progress in the life of the project had direct access to such services. In addition to assistance in articulating enterprise skill needs, advisory and brokerage services can play a further role. Where the identified skilling needs are to be met by accessing the services of RTOs, advisory and brokerage services can be utilised to assist in the interpretation of these needs for both parties so that the resultant programs and services reflect the needs of the enterprise.

The key policy implication is that there needs to be an increase in these services to enterprises. Increased government support for such services would constitute a valuable contribution to the skilling of the existing workforce. It is acknowledged that there is some degree of overlap in this function with the new strengthened role of Industry Skills Councils, however the Councils play a more strategic role than is envisaged here. In either case, the nature and level of support that this project demonstrates is required for individual enterprises is well beyond the resources, personnel and role of Industry Skills Councils. The nature of these services is similar to the Workforce Development Program announced as part of the recent Victorian Securing Jobs for Your Future policy reform statement which indicates that a team of independent workforce and training specialists will be established to provide direct assistance to 1,500 firms annually.⁴¹ This is a jurisdiction response and it is important to note that the needs of many enterprises go beyond jurisdiction boundaries requiring a national response.

6.3.3 The Importance of Blended Learning

Informal and non-formal learning is one significant means by which most existing workers will acquire new skills and knowledge. Accordingly, improving the quality of these forms of learning, recognising outcomes and blending informal, non-formal and formal learning is an important means of improving skills levels in the existing workforce. A key means of improving the quality of non-formal learning is to train the individuals within enterprises who are currently delivering the non-formal learning to be more effective trainers and assessors. There are skill sets within the Training and Assessment Training Package that are designed to do this and the Innovation and Business

Industry Skills Council has developed Vocational Graduate Certificates and Diplomas in Management (Learning) which will also be relevant for people within companies who need to provide training to their staff as one of their responsibilities.

These skill sets/qualifications would help trainers within enterprises to deliver blended learning more effectively and this would result in an increase in the quality of the outcomes. There is a further benefit from pursuing this approach; as part of their training, enterprise trainers would learn (more) about the national training system and how the linkages can be made between the formal system and skills developed outside the system. Through improved levels of understanding of how the training system works, it is likely that more individuals will be encouraged to have their existing skills recognised and to build on these skills through formal training.

6.3.4 Increased and More Effective Investment in Workforce Skills Development

An overarching policy implication is the need for a more focussed and relevant approach to public investment in Workforce Skills Development for existing workers.

There is a case for public investment in intermediary advisory and brokerage services on a co-contribution basis with enterprises where the outcome will result in nationally recognised skills and qualifications. This does not mean that additional investment is required but that flexibility should be built into funding systems to help meet the costs of upfront diagnosis of enterprise and workforce skills needs.

The public policy rationale for this form of investment is that the benefits are captured by individuals and enterprises as well as the community in general by achieving government objectives to increase the skills level and mobility of the existing workforce. By identifying skills needs and integrating them with broader enterprise requirements more relevant outcomes will be achieved and with higher levels of engagement and completion by existing workers.

The other major policy implication is to support the current focus on demand based funding so that provision of Workforce Skills Development programs reflects identified enterprise and industry need.

⁴¹ Securing Jobs for Your Future, Department of Innovation, Industry and Regional Development, Victorian Government, 2008, pages 16 – 17.

To achieve this, 'just in time' and highly flexible and responsive approaches are required so that identified Workforce Skills Development needs can be met. Current approaches to setting priorities for public VET funding are inadequate for this purpose as they tend to reflect macro changes in the labour market and the economy and skills shortages, and not the dynamic and sometimes complex needs which will flow from Workforce Skills Development.

Strategies also need to be considered to leverage industry investment for example through co-funding arrangements.

6.3.5 A National Workforce Literacy Strategy

A lack of appropriately structured and delivered literacy training is having a direct impact on the literacy levels of the Australian workforce with the downstream effect of limiting the upskilling and development opportunities for a significant proportion of existing workers. Consideration needs to be given to adopting a more strategic and integrated approach to address the adequacy and suitability of the current Language, Literacy and Numeracy Program (LLNP), the Workplace English Language and Literacy (WELL) program and the Productivity Places Program (PPP) and how they address literacy issues. These programs should be brought together with other relevant initiatives through the establishment of a national adult literacy strategy, driven by government and industry to produce stronger client outcomes.

As the LLNP is targeted at the unemployed there is no identified role for employers and industry bodies to make a contribution in for example, the provision of advice about skills, the identification of pathways and opportunities for enterprises to provide placements. The current focus is directed towards missing capability rather building a wide range of core skills required for the workplace. It is noted that LLNP providers are expected to deliver their LLN training in the context of local industry/business demand.

Similarly, consideration should be given to an expansion of the WELL program. The 2006 evaluation of this program revealed that 90 per cent of participating employers reported that the training benefited their business. However, peak industry bodies play little part in setting priorities or determining appropriate allocations of public funding.

In terms of the Productivity Places Program it is important that essential underpinning skills are addressed. Workplace literacy provision should now be considered an essential part

of wider Workforce Skills Development. There is also a need to consider that the full qualification funding model adopted by the Productivity Places Program is contrary to the concept of organisational learning and capability development. There is a need to consider less than full qualification literacy training to be included within the Productivity Places Program.

6.4 Recommendations

The following recommendations provide an integrated response to the findings across enterprises, industry bodies, Registered Training Organisations and government agencies.

6.4.1 Develop a Workforce Skills Development Advisory Network

The importance of advisory and brokerage services demonstrates the need for a 'case management' approach to Workforce Skills Development. Under this model independent Workforce Skills Development advisors would work with enterprises to:

- Provide advice to enterprises to link Workforce Skills Development to broader enterprise business and HR strategies;
- Develop tools to assist return on investment in Workforce Skills Development;
- Undertake initial analysis of skills needs;
- Develop strategies to encourage and support employee participation in Workforce Skills Development;
- Assist in the development of enterprise and individual learning plans;
- Provide advice to support the building of the internal capacity of enterprises to improve Workforce Skills Development (e.g. by training managers and experienced workers as coaches, mentors and workplace trainers and assessors);
- Assist the enterprise to access relevant programs and services offered by RTOs and to make informed choices and judgments about those programs and services; and
- Develop tools to assess and monitor implementation and outcomes.

This network could be achieved through an expansion of the Commonwealth Government Education and Training Advisors program and through a re-definition of the role away from a focus on apprenticeships to this broader advisory role. The network could complement the role of existing State-based initiatives to assist individuals.

6.4.2 Establish a Workforce Skills Development Fund

A more flexible and responsive approach to public funding is required to support the services provided by a Workforce Skills Development Advisory Network. In addition to the funding for the Advisory Network a further Workforce Skills Development Fund is required to address identified enterprise needs. The Network would provide the assistance and, when the pre-conditions for successful Workforce Skills Development are achieved, the Development Fund would be activated. Independent advisors/brokers would work with enterprises and have access to a fund which could be flexibly applied in direct response to the enterprise needs which have been identified through the interaction with the Workforce Skills Development Advisory Network. These needs include:

- Building the capacity of enterprises to upskill and reskill their workforces by developing coaches and mentors;
- Improving the skills of nominated workers to provide formal, non-formal and informal skilling through nationally recognised training and assessment units and qualifications;
- The development of a skilling plan to support the strategic plans of organisations;
- A comprehensive skills audit, alignment to national training packages and skills gap analysis;
- The negotiation of suitable formal training and ensuring the RTO delivers what is required and at a time to suit enterprise needs; and
- Measuring the return on investment.

As an initial step, this proposed fund could be trialled in conjunction with a funding round of the Productivity Places Program. Enterprise co-funding options could also be incorporated within the trial.

6.4.3 Establish a National Workforce Literacy Strategy

The importance of the core enabling skills of language, literacy and numeracy to underpin the skills required for the existing workforce emerged consistently throughout the trial sites and case studies. The absence of a national literacy strategy seriously undermines strategies to skill the existing worker. A national strategy is needed to encompass the following elements:

- Recognise that workplace literacy provision is an essential part of a wider Workforce Skills Development approach;
- Refocus the current Language, Literacy and Numeracy Program (LLNP) on building core skills required for the workplace rather than concentrating on the shortcomings of individual workers;
- Expand and enhance the Workplace English Language and Literacy (WELL) program which has been highly valued by participating employers;
- Provide opportunities for industry bodies to have a practical and strategic role in the provision of advice and allocation of funds under the LLNP and WELL program; and
- Develop linkages between a national workforce literacy strategy and the provision of funded places for existing workers within the Productivity Places Program.

6.4.4 Build Understanding and Capability in Registered Training Organisations of Workforce Skills Development

There is growing recognition within RTOs about the concept of Workforce Skills Development but effective responses by RTOs to enterprise needs in relation to existing workers need to be assisted by:

- RTOs and, as appropriate, their funding and representative organisations in partnership taking a more systematic approach through professional development;
- RTOs forming and/or extending industry partnerships to facilitate the placement of teachers and trainers in enterprises and the conduct of further case studies into successful practice particularly between enterprises and RTOs and by enterprise RTOs;
- RTOs participating in the Workforce Skills Development Fund.

6.4.5 Increase Priority for Investment in Workplace and Organisational Learning Programs

There is a need to increase investment in programs that build the capability of enterprises to deliver skilling programs. These programs include Frontline Management, targeted qualifications and skill sets within the Training and Assessment Training Package and the newly developed organisational learning and capability development qualifications within the Business

Services Training Package. A comprehensive implementation plan is needed to engage industry and to sell the efficiency benefits of an investment in building in-house training skills.

6.4.6 Continue to Advocate and Support Flexible, Demand and Outcomes Based Funding

To respond to identified skills needs, the current policy direction for demand and outcomes based funding must be maintained and translated into major and sustained change. This will only be achieved through additional funding which reflects identified industry skills needs, and is not limited to skills shortage categories.

Figure 13: Strategies and Outcomes for increasing workforce skills





Appendix A and B



Appendix A

Steering Committee Membership

Name	Position	Organisation
Megan Lilly	Associate Director	Australian Industry Group [co-chair]
Matt Davies	Branch Manager, Skills	Department of Education, Science and Training (now Department of Education, Employment and Workplace Relations), [co-chair]
Phillip Clarke	General Manager Office of Training & Tertiary Education	Victorian Department of Education & Training (now within Department of Innovation, Industry and Regional Development)
Pam Christie	Institute Director	Sydney Institute of TAFE
Raylene West	General Manager	Caterpillar Institute Pty Ltd
David Graham	Learning & Development Manager	Huntsman Chemicals
Tom Karmel	Managing Director	National Centre for Vocational Education Research
Bob Paton	CEO	Manufacturing Industry Skills Council
Wayne Austen	Managing Director	Haycolec Pty Ltd

Appendix B

Formal, non-formal and informal learning: a review of the literature

The Australian Industry Group commissioned the National Centre for Vocational Education Research to undertake and produce a literature review as part of the Skilling of the Existing Workforce Project. This appendix is an abridged version; the full literature review can be accessed at www.aigroup.asn.au

B.1 Introduction

There is nothing new about using different forms of learning to develop required skills and knowledge in workplaces and training institutions. What is different today is the increasing need to renew our approaches to Workforce Skills Development to address current skills shortages in an environment of workforce ageing, declining cohorts of youth, and increased competition for workers with the right skills. Advances in technology and science and government demands for regulatory compliance (DEST 2006) have also increased at a rapid pace. These developments mean companies must look for more effective ways to engage workers in learning, look for alternative sources of skills and recognise innovative ways of using the skills of older workers to keep them in the workforce. As organisations restructure and reduce staff to remain economically competitive, there are also increased requirements for managers and supervisors to assume responsibilities that were once dealt with by organisation-wide functions, including budgeting, scheduling, occupational health and safety, and staff and customer grievances (Martin & Healy 2006).

Current traditional trade skills shortages in Australia heighten the need to accelerate the completion of formal apprenticeship programs, which have historically been based on a combination of formal off-the-job and on-the-job learning, and informal and non-formal workplace learning (National Centre for Vocational Education Research 2006). These programs generally use recognition of prior learning (RPL) processes to recognise the skills and experience of mature age workers with relevant industry skills. There is also a need to deepen initial training for industries such as mining, electro-technology and energy

utilities which require higher level initial skills (DEST 2006). Providers of formal learning (including VET institutions) therefore need to provide training that is sensitive to the needs of marginalised workers. Richardson & Teese (2006) note that the Australian workforce is becoming increasingly feminised as the pool of 25-49 year-old males declines and more women enter or re-enter the workforce.

In developing workforce skills, companies have applied a variety of work-based learning approaches to complement and supplement learning from initial formal studies. These include learning on-the-job, short in-house training sessions, short courses from external providers, job rotation, job re-design (including multi-skilling and cross-skilling), and coaching and mentoring programs. The application of new technologies to speed up or diversify the production of goods and services to meet the needs of different consumer markets has also improved the accessibility of information and knowledge used in learning and job/work completion.

B.1.1 Defining formal, non-formal and informal learning

It is important to understand exactly what is meant by formal, non-formal and informal learning. The distinctions are compatible with the definitions adopted by the OECD in its review of the *Role of Qualifications in Promoting Life-long Learning* 2005.

- Formal learning refers to learning in courses or programs leading to nationally and internationally recognised qualifications.
- Non-formal learning refers to learning in structured programs for developing skills and knowledge required by workplaces, communities, and individuals. These do not lead to national or internationally accredited formal qualifications.
- Informal learning refers to learning that is acquired through everyday work and life.

In addition, information and communication technologies (internet, e-mail, chat-rooms, discussion forums), and topic specific software applications can be applied to all these forms of learning. Self-directed learning is also possible across the three forms of learning.

B.1.2 Supplementing work with access to formal, informal, and non-formal learning

Most learning undertaken by individuals once they leave school is informal (on-the-job training) and non-formal. Nevertheless, some workers continue to engage in formal learning, leading to job-relevant formal qualifications, or qualifications that are not related to their job. Fuller & Unwin (2004) are of the view that enabling workers to engage in all these forms of education provides an 'expansive' rather than a 'restrictive' form of workforce skill development. An expansive approach, they say, leads to an 'enrichment' of the workers' 'learning territory' allowing individuals to acquire social skills and formal qualifications which make them more competitive in the labour market.

B.1.3 Formal training leading to formal qualifications

Formal learning has a highly structured set of learning arrangements and is characterised by defined aims and objectives and a recognisable and espoused written curriculum structure. It is focused on delivering qualifications that are accredited by state, national and international education and training authorities (or their equivalents) and industry bodies. Formal learning is also associated with identifiable and recognisable educational sectors, that is, primary and secondary schooling, VET (including industry training), higher education, and adult and community education. Depending on the parent sector, formal training and learning programs are established to deliver a body of general, technical, vocational or professional skills and knowledge. Successful learning (affirmed by successful performance in tests of knowledge and or practical skill) may also lead to formal academic or industry qualifications, licences, or accreditations (or their equivalents). These outcomes may be used to help holders obtain a job, perform a job, change jobs, or acquire a promotion. They can be used to help holders start or progress a business venture, or enter further formal studies to acquire further qualifications.

A range of delivery options

Formal learning comprises a variety of diverse approaches and can be used with large and small groups, and individuals. For example, instructors may be in physical proximity to students and use lock-step methods of training,⁴² in addition to cases where instructors guide or facilitate students through self-paced learning materials. It also includes instructors using a combination or a blend of these two approaches. When college mentors or instructors visit workplaces and sit down with individuals to work through self-paced learning modules, this can also come under face-to-face training. Formal training also refers to on-the-job training which is required for the completion of an apprenticeship or traineeship.

Face-to-face approaches may also include students working through programs using electronic technologies in a computer classroom with instructors present for the provision of advice and assistance. This includes video-conferencing where instructors in one location deliver a training program to a group of individuals who are gathered in a video-conferencing classroom in another location or in multiple locations. Distance education leading to formal qualifications is also an example of formal training. Here, students may be provided with learning materials in hard-copy or electronic form. Increased access to electronic equipment both by teachers and students, and advances in technology means that teachers may communicate with students via e-mail, bulletin boards, discussion forums and may do so in synchronous or asynchronous time⁴³ (Misko, Choi, Hong & Lee 2004). Increasingly, and especially in the VET sector, some individuals may undertake and complete formal training (in short courses which, for others, are also used as components of qualifications) only for the knowledge and skill they are able to acquire from these courses. They may choose not to acquire a qualification.

Training to meet compliance and contractual obligations

Formal programs are also implemented to satisfy legislative requirements (for example, occupational health and safety laws, financial services regulations, and mandatory reporting of a variety of social issues related to minors⁴⁴) and contractual obligations, and is the most preferred type of formal training in

42 Here the teacher does not move on to a new skill or concept until he or she is satisfied that all or the majority of the class has grasped the current skill or concept. Arrangements are made for students who cannot keep up to get remedial attention from the instructor or from specialist tutors, either during class time (preferably when the others are working on their own on some particular task) or after class in specially structured remedial sessions.

43 Synchronous time refers to real time, while asynchronous time refers to situations where students access information (including written, video or computer-based learning resources) that have been prepared and posted at electronic addresses when it suits them.

44 For example, teachers in South Australia must attend mandatory reporting training if they are to keep their registration. Registered teachers who may not be in service must also attend mandatory reporting sessions if they are to maintain their registration status.

small and medium-sized firms. Mawer & Jackson (2005) found that unless workers were required to have formal qualifications and licences for compliance reasons, companies did not much care if workers did or did not have any formal qualifications. These attitudes were also shared by employees. What was often more important was the experience individuals brought to the job, their skills at working with others, their willingness to put in a good day's work and the types of references they brought with them from other employers. Some companies in the study by Mawer & Jackson (ibid.) preferred that compliance training for required licences be delivered on site. However, they were agreeable to specialised technical and theory-based training being delivered externally.

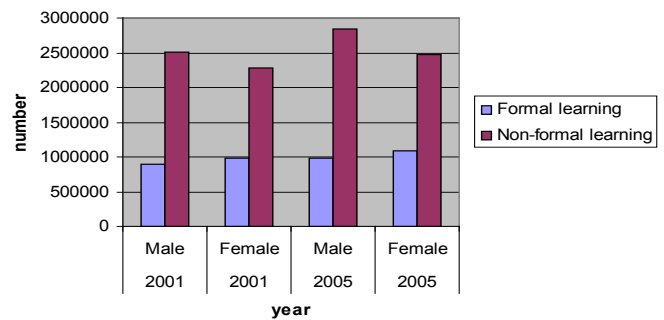
Responsibility for training costs

Typically employees who would like to acquire a formal qualification that may not be related to their particular occupations will undertake this training outside work hours. They will often be expected to pay for their own training. However, Fuller & Unwin (2004) provide an example of companies who also meet the costs of training in non-related fields. Those who can show that a desired formal qualification is relevant in some way to the work of the organisation may be given time to attend classes during work hours. Richardson (2004) found that a great deal of skill enhancement is provided by on-the-job learning, and that employers paid a considerably greater proportion towards work-force skill development than is usually estimated.

B.1.4 Non-formal workshops or classes

Non-formal learning is highly structured with specific aims and objectives and is by far the most common form of structured learning (figure 1). In industry, non-formal learning (often delivered away from the actual job or in industry training rooms or spaces) may be used to induct new employees into the culture of the company, develop the technical and inter-personal skills of experienced workers, and hone the skills of managers and supervisors. For all workers, non-formal learning (that is in-house training or its equivalent) is the most common after informal learning (Richardson 2004). Mawer & Jackson (2005) found that semi-structured training, often provided by product suppliers and equipment manufacturers and conducted at the work site, was found to be especially valued, particularly for all workers below AQF III level and long-term casual staff, because it was immediately relevant and could be put into practice.

Figure 1: Participation in formal learning and non-formal learning 2001-2005



Source: Australian Bureau of Statistics, 2005, Survey of Education and Training, Cat No. 1272.0

B.1.5 Informal learning

Of the three forms of learning, informal learning is the most prevalent⁴⁵ (Candy 2002 cited in Streumer & Kho (2006). Almost all workers (including apprentices and trainees, as well as managers and supervisors) are involved in some type of informal training and learning. Informal learning is not formally structured and is generally acquired through speaking with, listening to, or observing more knowledgeable or skilled individuals either at work or in the community. Special arrangements for informal learning can also be driven by organisations. Job-redesign and job rotation, coaching and mentoring, quality circles, and learning partnerships all enable individuals to engage in informal learning. It refers to learning acquired independently through reading books, newspapers and journals, on-line articles or entries, trial and error strategies, and extended practice. A renewed interest in informal workplace learning has been fuelled by a variety of changes in the way organisations have re-structured and adapted to 'shifting environments and advances in technology and global communication' (Marsick 2006, p51). There are some cases, generally in the VET sector, where informal learning acquired throughout work and life in general, has been recognised through formal recognition of prior learning (RPL) assessments to gain whole qualifications (generally in the VET sector).

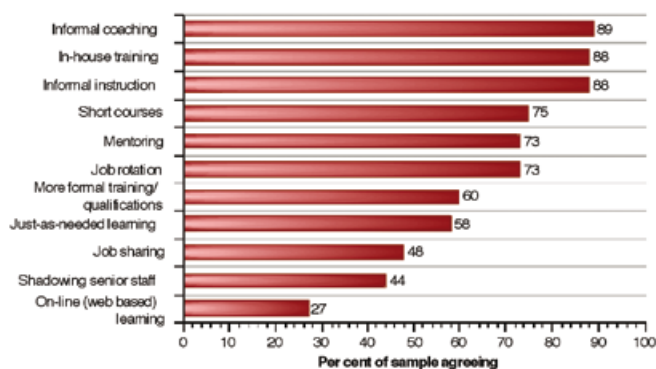
45 The US Department of Labor estimates that 70% of all learning for adults is acquired informally.

B.1.6 Participation in employer sponsored informal, non-formal and formal learning

On-the-job learning is the main form of learning that applies to both males and females, workers of all age groups, education and language backgrounds in Australian companies (Richardson 2004). This is supported by a survey reported in Ai Group’s *World Class Skills for World Class Industries* report which notes that the most prevalent types of learning opportunities provided for workers in Australian companies are informal learning experiences, followed by non-formal short courses and in-house training.

Figure 2: Learning experiences for workers in Australian companies (2005)

DOES THE LEARNING EXPERIENCE IN YOUR COMPANY INCLUDE THE FOLLOWING APPROACHES?



Source: AiGroup 2007, ‘Skilling the Existing Workforce: Background Research Report’, p 13

Mawer & Jackson (2005) found that employees in small sized firms needed to develop the skills, attributes and flexibility to cover for each other when required. This ability was perceived to be best developed through observation, information sharing, questioning, and supervised practice on-the-job, using the company’s own plant and equipment or through job rotation.

Access to on-the-job training is not uniformly available to all groups of workers. Richardson & Liu (2006) remind us that access to on-the-job training across industries is restricted for different groups of workers, particularly casual workers.⁴⁶ Given that employment growth for 20 to 30 year-olds is mainly in casual work for men, and that earning rewards for formal and informal learning is strongest for men in these age groups,

Richardson & Liu warn about the risk of removing informal pathways to skill development especially for those who are marginalised by low skills and education. Mawer & Jackson (2005) cite a limited number of cases where casual employees (generally employed on a long term basis) had the same access to informal and product-related training as other permanent employees, especially if these came at no cost to employers. Employers generally did not spend money on formal structured training for casual staff.

B.1.7 Blurred boundaries

There is a blurring of the boundaries between formal, non-formal and informal processes of learning. For example, students help each other to learn more about the best way to use computer applications (informal learning) so that they can put these to good use in preparing for assignments or examinations (formal learning). Informal learning can also include self-teaching, making a conscious decision to learn about a specific skill, and using a variety of strategies to acquire the required information and practising the required skill. This may include asking friends, family, work colleagues or other experts who already know how to apply a particular skill. The knowledge gained in these ways can then be used in assessments aimed at recognising prior learning, which can lead to progression through formal courses of study. Formal training and learning can also happen in spaces associated with informal learning. For example, workplace supervisors can take some time during work hours to explain the theory behind a particular technique or process which can help students to complete assignments required for the completion of formal courses.

The skills acquired in non-formal programs can also be used in formal and informal learning. For example, the teamwork, problem-solving and leadership skills and attributes acquired in personal development programs (for example, senior levels of girl guides, air cadets, scouts, Duke of Edinburgh awards) can be used in assessments for components of formal qualifications and informally to help work colleagues and family and friends solve relevant problems in difficult situations.

⁴⁶ The total hours of employer-sponsored training decreased by 27% for casual workers in comparison with a 15% reduction for permanent employees.

Although combining formal, non-formal and informal learning strategies make sense in terms of providing a more coherent and holistic approach to Workforce Skills Development, it is important to understand that the most effective strategies are those that fit the particular context of the organisation and the particular nature of the skill involved. Skills and knowledge are of limited use if they cannot be used effectively later, that is, transferred easily to similar or different contexts. The characteristics of effective transfer emphasise the importance of context-specific information and experience, the effectiveness of initial learning, and the ability of individuals to apply what they have learnt to new contexts (a detailed treatment of transfer issues are reported in Misko 1995).

B.2 Alternating on-and-off-the-job training

Historically, vocational training has included a period of formal studies alternating with a period of on-the-job training in companies. In Australia, this is demonstrated in entry-level training for apprenticeship and traineeship programs. An environment of skills shortages (especially in the traditional trades and in the community health sector) has seen the implementation of recognition of prior learning (RPL) processes to accelerate the completion of apprenticeships and traineeships in these areas.

B.2.1 Apprenticeships

Australian apprentices in the traditional trades (metal, electrical, electronics, automotive, food, construction and building, hairdressing, tailoring, watchmaking, locksmithing) follow a conventional pathway to formal qualifications and trade certificates. The apprentices sign a contract of training with an employer in which the employer promises to respect responsibilities to provide appropriate training and work for the apprentice, and the apprentice promises to undertake the training and work as expected.

The employer may also include a group training company that hires out the apprentice to one or more businesses (host employers) for a fee. In some cases employers may want to keep the apprentice for the whole of the duration of his or her apprenticeship; in other cases apprentices are rotated to different enterprises during their apprenticeship.

Apprentices complete a program of training which blends formal learning (often acquired through formal training courses

delivered by registered training organisations off-the-job, and on-the-job training delivered by workplace supervisors) and informal learning which happens as a result of experience in the job. In some cases, learning which has occurred in non-formal learning programs can be used to contribute to formal qualifications or components of qualifications (for example, first aid certificate). The formal learning component helps apprentices acquire relevant knowledge and theory, and provides opportunities for practical skill development in simulated workplace settings (such as college automotive workshops or hospitality function rooms) and on the job. The informal learning component is also acquired through engagement in daily work processes and interaction with peers and more experienced work colleagues, helping apprentices to apply their skills and knowledge to real work situations and processes.

This combination of alternating off-and-on-the-job training applies to the bulk of apprentices especially in the traditional trades. However, there are also programs in some trades which are defined as being 'fully on-the-job'. It is in these programs (more often applying to trainees than apprentices) that demonstrate more clearly the practical combination of off-the-job and on-the-job learning.

Fuller & Unwin (2004) believe that the need for apprentices (and all employees in general) to attend off-the-job training (leading to formal qualifications) provides them an opportunity to meet others also engaged in similar learning, reflect on their learning away from their jobs, and gain 'access to theoretical knowledge and conceptual knowledge that would be unlikely to be made available solely through experience on the job' (p139). In addition, the qualifications gained can lead to further education and training pathways.

'Fully-on-the-job' traineeships

These traineeships are programs where trainees undertake all (or almost all) of their learning (formal, non-formal and informal) at the workplace. The programs provide definite benefits for employers and trainees in terms of customising the training to suit the needs of the workplace and having the trainee at the workplace for the entire (or almost entire) time. A review of traineeships in office administration and small business in South Australia (Department of Education, Training and Employment 1999)⁴⁷ found that employers valued these forms of training for trainees because they provided value for money and enabled trainees to develop valuable occupational skills and knowledge. Trainees viewed them as useful pathways

47 The Department of Education, Training and Employment subsumed components of the current Department of Further Education, Employment, Science and Technology (DFEEST).

into employment. For those employers who were applying the concepts in the ways that were intended, the fully-on-the-job programs provided needed training for those small businesses for which there had not been any formal training.

School-based apprenticeships and traineeships

Students in schools are also able to enter a contract of training with an employer (often a group training company) while they are completing their formal studies at school. Typically such programs will require apprentices and trainees to spend a specified amount of time in the workplace or in a simulated workplace (for example, a commercial kitchen or vineyard attached to the school) and some time in formal off-the-job training delivered by a registered training organisation. Time in the workplace will be spent on workplace tasks, while off-the-job training is spent on knowledge or theory components.

B.2.2 Combining informal, non-formal and formal learning for accelerated completion

Combining learning that happens in informal, non-formal and formal contexts is done through recognition pathways. Using the prior learning individuals gain through experience in work or in other daily activities (informal learning), or in work-based or community-based structured training programs (non-formal learning), training or learning gaps that need to be addressed to acquire formal qualifications (formal learning) are identified. Such approaches are being currently used in programs for addressing national skills shortages in the traditional trades and community services programs and go under the umbrella term of “accelerated” apprenticeship or traineeship programs. Combining the learning gained by extended periods in work is also used by professional associations in continuing development programs aimed at increasing the post-graduate qualifications and accreditations of professionals.

Current skills shortages (especially in the traditional trades and community and health service areas) have required industry to look for alternative sources of workers. Typically, they have looked at upgrading the skills and knowledge of workers who have been working in the industry for a number of years and used ‘recognition of prior learning’ assessment to accelerate them through apprenticeships and traineeships. In addition, different jurisdictions are experimenting with renegotiating and reducing the duration of training contracts in the traditional trades. In other cases, formal training is being re-configured to include longer blocks of up-front and alternated off-the-job training, and facilitating pathways to higher level qualifications.

Helping mature age workers commit to a program of training (which may include substantial amounts of self-paced learning), and providing them with language and literacy assistance to engage in this form of learning are issues that will need to be addressed by providers providing learning for accelerated programs.

Learning bays

Learning bays are an innovative way to combine formal learning with informal learning (Dehnbostel & Molzberger (2006). Learning bays are spaces which are located in the middle of work processes for informal and formal learning (refer Daimler plants in Baden-Watenburg, Germany). The production component (work resources, work tasks and machines) enable workers to engage in on-the-job learning. The learning facilities (for example, notice boards, and multi-media) enable workers to engage in formal learning activities. Trainers attached to the learning bay are generally skilled workers from relevant departments who act as facilitators for learning specific topics and skills.

De-centralised learning arrangements

Other means for combining informal and formal learning for German apprentices (generally in the second year of training) has been called ‘decentralised learning’ (ibid). This is learning which is divided up and undertaken by a number of small and medium-sized companies, each specialising in a different area of training for an occupation.

Integrating work with learning

In integrating learning with work, the emphasis is shifted from the learner as student, to the learner as worker. This often occurs in collaboration with work colleagues (Hager 1998). *Making learning an integral part of day-to-day work and finding ways to harness that learning and make sense of it is one of the most critical challenges that faces educators and managers in modern organisations’ (Davis & Hase 2001 p. 9).*

Integrating formal, non-formal and informal learning into the everyday work lives of individuals is the main way to develop a culture of learning in organisations, and contribute to successful learning (Dawe 2003). Marten (2007) notes that the development of a learning culture in organisations is based on commitment by senior and line managers to provide time and resources for learning, and individuals to take responsibility for

their own learning. This means that senior managers must 'walk the talk' and be 'tolerant of failure' (Callan 2004, p27).

Other means for integrating learning into the everyday work lives of employees is for organisations to develop performance management policies which tie the performance appraisal system and associated rewards to desired changes in employee behaviours.

Integrated work and learning programs

The concept of 'work integrated learning' is a variant of the 'on-the-job training' concept applied to apprenticeship and traineeship training (Murphy & Calway 2006). This is observed in formal programs for the initial acquisition of qualifications for the trades, associate professionals and professionals, and the further development of skills after graduation.

Cadetships

Combinations of formal, non-formal and informal learning are observed in the operation of cadetships. Cadetships generally operate in trades, associate professional and professional occupations, and in the military where they signify entry-level military training leading onto more advanced ranks. Cadetships often involve scholarships which pay for a component of the formal training and provide the required employment to give cadets on-the-job experience.

- The Smart Skills Initiative in Queensland has developed a new cadetship program which allows students to acquire higher level qualifications and develop general and technical skills to work as a para-professional in targeted industries.
- The Australian Industry Group has recently implemented the Technology Cadetship to provide more efficient pathways for school leavers to enter technical occupations in the manufacturing industry. It comprises a set of entry level qualifications linked to on- and off-the-job training. The Cadetship arrangements are set out in a contract of training and employment, similar to those used for traineeships and apprenticeships. Cadets have access to a range of pathways with each pathway being sufficiently flexible to enable a customised package of skills to be developed which are available to meet the

unique needs of individual businesses.⁴⁸ The Technology Cadetship will also be built upon in the future by expanding the coverage to a broader range of industry sectors.

- The Construction Industry Training and Employment Association (CITEA) in the ACT have also established cadetship programs in the areas of Contract Administration and Supervisor in Building Construction. Cadetships are available for individuals who wish to go on to university. In their first year, cadets will work in industry and attend training off-site for two days every three weeks. After 12 months, they move into their second year to gain a Certificate IV qualification. In the third year, they are able to do the diploma and the advanced diploma in Construction Management. This enables students to obtain professional membership of a professional organisation, move into a degree program, pay no HECS, and be paid as they complete their education. There is also opportunity for trade apprentices to undertake 12 months of the trade qualification and, if they are selected, move into the second year of the cadetship program, (that is, into the Certificate IV program). They may also choose to move into a cadetship program once they have completed their trade qualifications. Cadets are able to acquire a residential building licence on completion of their trade and obtaining a Certificate IV qualification. They may also acquire a commercial A class licence on completion of advanced diploma.
- The Department of Employment and Workplace Relations (DEWR), now the Department of Education, Employment and Workplace Relations (DEEWR), and participating agencies, including Customs, offer cadetship programs to indigenous Australians to study at university and undertake work placements during holiday periods.

Internships

Commonly used for associate professional and professional occupations, internships often (but not always) apply to individuals who have already commenced a program of formal study. Theory and knowledge training is supported with a period of supervised practical work-based training. Although an internship is a mandatory component particularly intended

⁴⁸ The range of pathways is: CAD/Drafting, Manufacturing Operations, Metallurgy, Polymer Technology, Laboratory Operations and Technical Officer. A further pathway is being developed in structural steel detailing. The Manufacturing and Associated Industries - Skills Development - Wages and Conditions Award 2004, has been ratified to cover employment conditions and pay rates for Technology Cadets. The Technology Cadetship will be expanded to Certificate levels V and VI (Diploma and Advanced Diploma), and may also articulate into Engineering Degree programs.

for those preparing to be medical practitioners, such programs may also be used by different businesses and organisations to recruit and develop required skills and knowledge (and typically provide scholarships for completion of formal studies and employment).

Continuing development for professionals

Work integrated learning for professionals is based on the concept that an individual who gains initial entrance into such an occupation, has the minimal standards of knowledge and skill required to practice in that profession. However, professionals in high risk occupations may need to continually update their knowledge and skills to keep abreast of modern developments, and demonstrate they have acquired higher level skills and knowledge (Murphy and Calway, 2006). This combination of workplace experience (informal learning) with continuing education (formal learning) for the conferring of special professional status on individuals who can demonstrate compliance with the standards for technical skill and professional competency is critical. In the main, there is a requirement for a minimum level of informal learning (generally, years of experience in the profession) and some extra studies in formal learning programs.

B.2.3 Action learning strategies

Action learning can be defined as a process in which a group of people come together regularly to help each other learn from their experience (Revans 1980). There are two sources of learning: learning from 'experts' and from thinking about our own (shared) experience.

Communities of practice

Wenger and Snyder's (2000) concept of 'communities of practice' is useful in understanding how groups can come together to share information. Often self-selected, these groups meet to discuss issues in which they have a passionate interest. For example, Wenger notes that they include 'a tribe learning to survive, a band of artists seeking new forms of expression, a group of engineers working on similar problems, a clique of pupils defining their identity in the school, a network of surgeons exploring novel techniques, a gathering of first-time managers helping each other cope'. Callan (ibid.) provides us with a variety of examples demonstrating how the 'communities of practice' concept can be applied to enable VET practitioners to 'share stories and learning and turn implicit understanding

into more explicit knowledge which can be used to solve further problems (p23):

Incubators

Similar to the 'communities of practice' model but more formally structured is the 'incubator' concept of action learning. Here, groups of employees retreat to a specified space to concentrate on a specific topic to learn more about new processes and develop innovative ways for dealing with specific issues. Business incubators aim to help new businesses start up and grow. The Australian government funds the *Building Entrepreneurship in Small Business Program* to provide incubators with premises, advice services and support for a specified number of years adequate for the business to be able to enter the wider business community.

B.2.4 Skills laboratories

The skills laboratory is another form of training that is used to develop the skills and knowledge of learners. This concept can be applied to the VET sector in terms of training workers for the community services industry (for example, personal care workers and enrolled nurses).

- One example of the skills laboratory concept currently being used for the training of existing staff and initial entrants is the Clinical Skills Laboratory of the Queen Elizabeth Hospital (Adelaide, South Australia). The laboratory enables medical students and staff to learn and practice hands-on simulated procedures (on real and simulated patients) in a supported learning environment before they perform the same procedures in the workplace. Students are given feedback on performance and opportunities to reflect on their practice. Simulated patients are volunteers who are part of the SPACE (simulated patients advancing clinical education) program and become important learning partners in medical education. They engage in interview role-plays acting out scripts which enable learners to interview patients or collect a health history. They may also allow learners to perform physical examinations, measure blood pressure recordings, or practice chest drain removal techniques. SPACE volunteers also engage in acting workshops which helps them to perform in a manner which is consistent with others who are also performing a similar role.
- Similar to the skills laboratory is the practice firm where students in business administration learn about

the administrative functioning of a business through simulated training.

- The hairdressing salon attached to many public and private hairdressing schools also enables learners to practice their skills of cutting, styling, and colouring hair on real customers who pay a discounted price for hairdressing services. A similar concept is the function room or restaurant attached to many hospitality programs.

B.2.5 Quality circles

The Quality Circle is another example of how groups of workers from across the company can come together to solve organisational problems and enhance learning. It became popular when the *Quality* movement of the 1980s caught the imagination of large corporations. Issues ranged from administrative processes for staff recruitment, selection, and payroll services, through to product development, sales and marketing, distribution and customer services.

B.2.6 Recognising skills acquired through informal and non-formal learning

The formal recognition of skills and knowledge gained through informal and non-formal learning can help individuals to: enter, progress through and complete formal studies; obtain jobs and promotions; acquire formal professional status conferred by professional associations for specific occupations; and acquire a skilled migration visa (for migrant workers). Uptake of formal RPL processes continues to be low.

The 'Life experience counts' program comprises a 17 hour flexible delivery course which uses a combination of formal structured training and more informal sessions to help participants identify their skills and experiences and prepare a portfolio they can use to show assessors for RPL assessments. The results of these assessments can be used to move on to further formal training.

The Queensland Government's Skills First (RPL) program has implemented the Skilling Solutions initiative to enable individuals to have their skills and experience recognised for full or partial qualifications. Trained assessors (generally teachers from the TAFE sector) develop individualised customised plans for employment and skills recognition, and refer individuals to RTOs to have their skills formally recognised and to enrol in training to address any identified skills gaps. A \$200 voucher is

given to applicants to pay for the RPL assessment. Victoria has established a similar concept with its Skills Stores.

In 2002, the Board of the Senior Secondary Assessment Board of South Australia (SSABSA) implemented a Recognition of Community Learning Policy (SSABSA 2006) aimed at recognising learning in community-devised accredited programs or personal learning programs which do not follow an organised program of study. This counts towards the South Australian Certificate of Education (SACE). Students must complete the necessary application form and provide evidence of awards received, and learning undertaken. Evidence of personal learning can be provided in personal learning interviews, portfolios, and witness statements.

B.3 Coaching and mentoring

There is general agreement that where workplace off-the-job training fails is the lack of on-the-job support for practice of skills and knowledge learned in formal or non-formal learning programs. Coaching and mentoring by supervisors, managers or more experienced work colleagues, are increasingly being adopted to support the learning acquired in more formal contexts. Sometimes the terms 'coaching and mentoring' are used interchangeably; for example, Billett, McCann & Scott (1998) define a mentor as someone 'who guides, supports and coaches in the workplace'.

B.3.1 Coaching

Coaching can be described as 'an ongoing process of helping people achieve results' (Development Dimensions International 1987) and can be used with employees and executives.

B.3.2 Mentoring

Mentoring is often associated with the act of providing guidance, assistance and informal support to less experienced work colleagues and new employees. Support for this notion of mentorship is supported by Spencer (1999 cited in Rolfe-Flette 2002) who distinguishes the mentor relationship from other forms by noting that it is based on encouragement, constructive comments, openness, mutual trust, respect and a willingness to learn and share. Billett et al (ibid) call this form of learning 'guided learning'. Although an individual may provide such support to a group of individuals, typically it is a 'one-on-one' arrangement.

There are many ways that companies decide to implement formal mentorship programs. Typically a formal program (often voluntary) is established at corporate or departmental level and a request is made for willing and more experienced staff to become part of the program. Less experienced employees are asked to join the program and are matched to one of the staff who have the skills, knowledge and attributes that they seek. Once the relationship is set up, it is up to the participating pairs to conduct regular meetings. Such arrangements have varying levels of success and partners must apply considerable effort and time to keeping the partnership alive. Graduate programs, which aim to attract and retain talented individuals (often graduates just out of university), represent another variant of formal mentorship programs.

Although mentoring is used in workplaces, it is also used to achieve social justice by providing individuals from disadvantaged groups with support, guidance and assistance.

B.3.3 Learning and Social Benefits

There are learning and social benefits for all participants in coaching or mentoring relationships regardless of whether the relationships have been engineered at the corporate level or evolved informally. The coach and mentor acquire intrinsic rewards (including skills in communication and leadership) by providing advice and support to more inexperienced and often younger workers. The individual being coached or mentored develops job skills and knowledge, and extends personal networks and support systems. This helps to increase confidence, self-esteem and personal growth.

Despite the benefits, there are some concerns in coaching and mentoring arrangements that do not have in-built special arrangements to support the relationships. If the type of guidance and strategies used do not meet workplace requirements, both parties have not been adequately prepared for their roles, and inadequate time is devoted to the relationship, (Freedman & Baker 1995, Billett et al.1998) they may fail.

The success of any coaching intervention is also dependent on the personal attributes and professional expertise of the coach. These have been identified by Chapman, Best and Casteron (2003 cited in Abbott, Stening, Atkins & Grant 2006). These include skills in self-management, communication and interpersonal relations, technical expertise and breadth of experience. The characteristics of effective workplace mentors are also similar. In their in-depth study of six organisations, Billett et al (op. cit.) note that effective mentors require:

- Expertise and credibility in the specific work area (that is, he or she must possess valued knowledge to pass on);
- Understanding of what is required for successful performance;
- Appreciation of the value of the activity of mentoring and what it can deliver for mentees;
- Willingness to share knowledge with the learner; and
- Be able to act as a guide rather than a teacher (that is, they should let the learner do the thinking and the acting).

B.4 Diversifying jobs and career pathways through job re-design and job rotation

Regularly altering the structure of jobs and rotating individuals through different jobs has been found to be a major way for organisations to develop innovation and extend the learning of their employees (Denhardt & Dernhardt 2002 cited in Callan 2004). This is because people who move around the organisation are more likely to bring a different perspective to the way things are traditionally done. However, organisations also deploy a variety of non-learning solutions for ensuring they have adequate skills to perform required work processes. These include hiring temporary workers to fill a skills gap or vacancy, hiring contractors (particularly used for IT functions) or workers from labour hire companies.

B.4.1 Job re-design

Re-designing the structure of jobs by expanding the number, variety and complexity of tasks is another way of promoting learning in the workplace (Van der Klirnk & Streumer (2006). However, re-designing the structure of jobs to decrease variety and complexity (often associated with the introduction of automated equipment and machinery) may actually reduce learning and employee motivation (Bernhardt 1999).

A history of the evolution of good job re-design practice is provided by Bratton (1999). It incorporates Frederick Taylor's scientific management approach to job design (based on the efficiency of job fragmentation), and Ford's adaptation of these principles in the assembly line, common in car manufacturing companies of the 20th century. The human relations movement that followed focussed on improving the human aspect of work. The 1980s saw a focus on total quality control movement and the introduction of team-based approaches to work organisation and responsibility for quality assurance. During this period, there was a focus on developing 'just-in-time' technology to

minimise stock levels. In the 1990s, the focus was on ensuring companies were able to respond to constantly changing technological and economic environments, by giving core employees the responsibility for creating value for customers, which translates into profits for employers.

Each of these movements brought a different emphasis to the role of workplace learning. Where the design of the job did not require any extra thinking or responsibility on the part of the worker, then the importance of further learning to perform the job was of less importance. Where the worker was required to have added responsibility for monitoring the quality of his products and services, the role of workplace learning for developing suitable skills and attributes becomes more important.

The problem with this neat depiction of how job re-design has evolved is that approaches which are commonly thought to have died out long ago continue to thrive in today's workplaces. Bratton is of the view that 'with some modifications, Taylorism and Fordism still seems to be the predominant approaches to job design in most establishments, particularly in large-batch production industries, (p489). Conti and Warner (1997) provide examples of Taylorist-type procedures being adopted to avoid re-work and meet deadlines by welders in a Japanese firm.

Fuller & Unwin (2004) describe a more broad-based approach to skill development which also provides examples of how to go about upgrading skills through cross-skilling and multi-skilling.

- A Swedish steel trading company with some 80 employees invested in management development and customer service training for its employees. To enable them to learn all the features of the new products, jobs were re-designed, and work stations re-arranged in circles to enable easy sharing of specialist information between employees.

There is also a down-side to job re-design strategies especially if they result in less learning. Bernhardt (1999) examines how the introduction of 'just-in-time' concepts for production and recording in the retail industry (enabled by the automation of machinery and advances in information technology) has simultaneously expanded the complexity of jobs of employees charged with development of these processes, and decreased the complexity of jobs for those who are in the front-line of providing customer services, for example sales assistants in 'no-frills' retail outlets and fast food stores. One exception is

up-market fashion stores where sales assistants have had to learn new and immediate information transmission processes to customise services for high paying customers.

B.4.2 Job rotation

Job rotation is used for exposing new employees to the various branches of the organisation. It is especially valued in small companies who need to make sure that employees can provide the range of services required (Mawer & Jackson 2005). Although also used with regular employees, such approaches are especially engineered in programs which are aimed at recruiting and retaining talented graduates. For example, many organisations with graduate programs use job rotation to vary experience and intensify the graduate's understanding of the different aspects and work processes of the organisation.

B.5 Using new technologies in compliance and workplace training

The introduction of advanced technologies and science (including information and communications technologies, just-in time technology, bio-technologies, medical imaging and other scanning technologies) has affected the way work is undertaken in a majority of new and traditional industries (Table 1). Advances in information and communication technologies has also expanded the sharing of information within organisations and externally, and has promoted the use of e-business as a way for governments and corporations to interact with customers.

These advances have increased the need for workers, especially those whose everyday work requires high level interaction with technology, to keep abreast of changes, add to and update their pool of skills and knowledge. Especially important is 'continual retraining in new technology and related products' and skills in 'developing on-line relationships with customers and other businesses' (Department of Education, Science and Training, 2006). Increasingly these technologies are also being used for learning in all its forms and especially in e-learning programs.



Table 1: Technological changes in different industry sectors

Source: Department of Education, Science and Training (2006) *National Industry Skills Report*

Agrifood	Inventory and stock control, online distribution of products, online betting in the racing industry, website advertising
Community Services and Health	E-business services, for example, via Healthconnect
Construction and Property	Changes to materials (concrete, metal precasting, alternative wood products), management methods (subcontracting, prefabrication and project management tools), innovations (robotics, computer aided design and electronically linked international project teams)
Electro-technology and energy utilities	Increased demand for entertainment products and energy Immediate transmission of information via Smart Billing Processes
Infrastructure	Increased use of advanced computer graphics and computerised programs for administering personnel functions and contracts
Innovation and business	Digital technologies, online transactions, e-business
Manufacturing	New inventory control systems, quality control systems, computer aided design, on-going automation
Resources	Increased automation of handling and processing, new exploration and drilling technologies and changed work practices
Services	Global communication networks and supply chains, online ordering and purchasing of goods and services (including flights, tours and accommodation), scanning technologies, just-in-time transmission of information on stocks and cash flows
Transport	e-business applications being used across commercial transactions, business and supply chain management and in service delivery

B.5.1 Increased automation

The automation of manual processes has been pervasive across most industries (especially the retail industry) and has sped up formerly labour-intensive tasks or processes. It has also increased the skill levels and knowledge required for workers in research and development, marketing and management. In the retail industry, major corporations have focussed on the development of the management skills of trainee managers, establishing specific training organisations to deliver nationally accredited formal training.

However, increased automation (including scanning technologies enabled by the development of product bar-codes) has not made the work of sales assistants (especially in supermarkets and 'no-frills' retailers and fast-food outlets) any more rewarding or challenging, and may have made 'an already monotonous job even more so' (Bernhardt 1999 p 27).

B.5.2 E-learning

Expansion of information and communication technologies (including the internet and company-specific variations of this application) has enabled organisations to combine formal, non-formal and informal learning approaches in new ways. It has also opened up channels of communication (including email, chat-rooms, discussion forums, and interactive websites) between different departments and levels of employees. Providing opportunities for all employees to make use of such channels of communication (either to share information with each other or management) can also help in the development of innovative practice and workplace learning for both individuals and the organisation. The open sharing of information between employees and senior managers is especially evident in the 'speak-up culture' promoted in the Virgin group of companies (Callan 2004).

Case studies of organisations providing e-learning for their staff (including for compliance training) conducted in 2004 by Misko, Choi, Hong & Lee (2004) found that the availability of on-line technologies has made it possible for workers to undertake learning (formal, informal and non-formal) at times and in locations that suit their work obligations and social commitments. It has enabled companies operating in highly regulated environments (like the financial and airlines industry) to use e-learning as a key means for ensuring that all employees who provide relevant services remain compliant with the legislation. It is important to note that independent on-line

learning is often preceded by a suitable period of non-formal learning in induction sessions.

Whether e-learning is stand-alone or blended with other forms of learning, it requires easy access to the internet, email and technical support personnel, and minimal time for downloading information. It also requires timely feedback from trainers, and adequate language and literacy skills to participate in learning.

B.6 Concluding Remarks

Formal, non-formal and informal learning has and can be combined to provide organisations, new and existing workers with required and desired skills and knowledge. Current skills shortages in traditional trades, health professions and community service sectors provide a reason for developing and accessing alternative sources of skills. One response is to explore how the different forms of learning can be combined to accelerate the completion of training and required qualifications and licences. It is also important to note that the alignment of form to function and the opportunity for learners to put any learning into practice will ensure that appropriate learning takes place.

Informal learning (that which happens on the job and in life in general) is the most common of the three forms of learning. However, organisations typically use non-formal learning programs provided by in-house trainers or external consultants to introduce new ways of working or improve knowledge and skill. Increased access to internet and information and communication technologies has accelerated the speed of communication between learners and trainers within and between organisations. It has also generally provided easy access to a vast array of learning resources.

It is clear that companies use a range of strategies for developing the skills of their workers. This includes using formal, non-formal and informal learning as stand-alone approaches or in various combinations. In the long run, businesses will select approaches to suit their particular companies or strategic directions at the time that learning is required, and the extent to which they can release workers to engage in learning (shown to be far more difficult for small business). Unless required or mandated to undertake learning, individuals will also make their own decisions about whether or not they choose to do so. They will also suit themselves about the types of learning they choose.

Organisations tend to provide learning opportunities for permanent staff over casual staff (especially if it comes at a cost), thus it is important to find alternative ways to provide casual workers with opportunities for learning. Workers who already have high levels of education are far more likely to participate in formal learning than those with limited education, while those with limited education participate in informal or on-the-job learning. Why those with lower levels of education continue to participate at much lower rates in non-formal and formal learning might be explained in part by limited language, literacy or numeracy skills. Providing workers with access to these basic skills and to basic information technology and communication skills seems to be critical to workforce skill development in an environment where the main aim is to broaden the pool of suitable workers.

The recognition of prior learning has recently been used to fast-track through apprenticeships, those who have industry skills and experience in skill shortage areas. However, such individuals may not always have the ability or commitment to the self-paced learning often used for gap training in these programs. Helping these individuals with this form of learning will be a priority for training providers.

The full literature review can be accessed at www.aigroup.asn.au.



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