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ISBN 1 920896 51 1 print edition
1 920896 52 X web edition
TD/TNC 81.13

Published by NCVER
ABN 87 007 967 311

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Acknowledgements

The authors would like to acknowledge the valuable contribution of the following people and organisations in the undertaking of this research project.

Jeremy Gilling: (*Manufacturing Learning Australia*) and Cassandra Parkinson (*CREATE Australia*) for contributing conceptual energy to the research method discussions and facilitating access to enterprises for data collection.

Jennifer Gibb: (formerly of *NCVER*) for providing patient encouragement, valuable additional review comments (and interpretation), and fostering collaboration with other relevant projects and individuals.

Raju Varanasi: (state manager, *ITAM, TAFE NSW*; formerly program manager, *MEES, TAFE NSW*) for providing advice during the conceptualisation stage of the project.

Case-study organisations for their cooperation during the data collection phase, including the dedication of considerable personal time, and a general willingness to openly discuss their situations and their views.

Report reviewers for valuable insights and recommendations that drove early developments of the research and facilitated the fine tuning of this report.

Key messages

- Employers do not significantly value qualifications in the same way as the vocational education and training sector. The approach taken to 'qualifications' by enterprise managers is generally to seek recognition only of a small number of competencies, not a whole Australian Qualifications Framework qualification. However, this point of view varies significantly in relation to a number of variables, including the job under consideration, and types of competencies being contemplated.
- The main types of competencies that employers target for recognition through part qualifications in the form of statements of attainment include: competencies associated with specific licences; permits and tickets conferred by non-training bodies; competencies associated with occupational health and safety; and competencies associated with training and assessment.

Executive summary

Project brief

The purpose of this study was to identify the relationship between requirements for the performance of particular jobs and that specific part of the competence requirement that is needed, in the opinion of employers, to be formally recognised. A large number of competencies were identified by employers as required for jobs to be performed well. Generally, this was significantly in excess of those needed to obtain a qualification at an Australian Qualifications Framework (AQF) level appropriate to the job. It was also found that almost all competencies identified by managers were covered by training packages.

This research set out to explore the following areas:

- the relationship between the various recognised and non-recognised competencies that form the 'total competence' of an employee
- the types of competencies most likely to fall within the different competency groups
- patterns in the way in which competence is achieved and recognised for different enterprises and industry groups
- competency outcomes recognised and valued by enterprises in ways other than through national recognition or qualification, such as promotion and higher salary
- structural, procedural or other impediments to the recognition of competence achieved in the workplace, but not at present assessed or recognised.

Methodology

Given the exploratory nature of the project, the data collected were primarily qualitative, gathered through interviews with managers (sometimes in conjunction with supervisors and experienced workers) during a site visit to 23 organisations from five different industry sectors. Two instruments supplemented the case-study approach, one of which collected detailed quantitative data on the competencies of selected jobs. Thus, observations could be made at two different levels of analysis—the enterprise or case level and the unit of competency level. Quantitative demographic data were collected through a survey administered during the site visit.

The competencies from each of the different training packages were divided into two categories—'defining' or 'industry' competencies and 'enabling' or 'support' competencies. Industry or job-specific units of competence are those that help *define* the industry or sector in which the competence is to be employed (for instance, plastic versus rubber) and/or the type of job the competent worker is able to perform (for instance, injection moulding versus vacuum forming). Examples of enabling competencies are 'apply quality principles' and 'provide service to customers', covering common areas such as occupational health and safety and business management. The 'enabling' competencies from all training packages used were combined into a common list and the duplicates deleted. The 'defining' competencies were kept in their specific industry sector.

Managers were asked to describe several jobs within their organisation by identifying from lists of competencies those competencies they believed were needed to perform each job at a competent

level. In addition, interview subjects were asked to nominate competencies, outside those provided to them in the competency lists, which they believed were important to the performance of the chosen jobs. Once these lists were completed, interview subjects assigned the selected competencies to four groups according to the required approach to assessment:

- ✧ requiring recognition (formally assessed competencies based on endorsed industry standards)
- ✧ assessment (based on enterprise standards)
- ✧ informal assessment (generally not involving a structured process)
- ✧ no assessment (may not be assessed at all or employer chooses not to assess).

Findings

A large number of competencies was identified by employers as required for jobs to be performed well. Generally, this was significantly in excess of those needed to obtain a qualification at an Australian Qualifications Framework level appropriate to the job. There were few competencies identified by managers as required by workers to properly perform the selected jobs which were not covered by training packages.

Competency type

Competencies could be earmarked into two main classes of competence—'defining' competencies or 'support' competencies. Employers and trainers refer to *support* types of units of competence as 'soft' skills. These are more generic competencies that could easily be adopted across a range of industries and jobs.

In the jobs surveyed, it was found that the number of defining competencies was usually much fewer than the number of support competencies. There are relatively few (defining) units of competency distinguishing one job from another.

The types of competencies selected to comprise a job are influenced by a number of enterprise factors. A higher proportion of defining competencies was identified as required by managers for jobs in enterprises that are:

- ✧ high technology
- ✧ public sector
- ✧ locally owned
- ✧ small
- ✧ with a history of recognising competencies/qualifications.

Level of assessment

Competencies are not considered equally by employers in terms of firms' training needs, and especially in their requirement to be assessed. Assessment of competence in general is important to managers, with 57.7% of all identified units of competence perceived as requiring at least formal and structured assessment. However, only a small proportion (15.9%) of units of competency identified for the performance of selected jobs (for example, forklift driver) was judged to require formal recognition. At the other extreme, an equal proportion (15.9%) of competencies (for example, communication competencies), while considered necessary for the job, are determined by employers not to require any assessment.

There are four main types of competencies that employers target for recognition:

- ✧ competencies associated with 'tickets' and licences conferred by non-training bodies
- ✧ competencies associated with training and assessment
- ✧ competencies associated with occupational health and safety
- ✧ job-specific or 'defining' competencies.

Assessment effort should be seen as a continuum (from no effort, to assessment for competence recognition) with variation not only between organisations but also between different jobs within an organisation. It appears that employers apply a risk-management approach to determining the required level of assessment effort, where the financial, legal and human consequences of incompetence in a unit of competency are weighed against the cost of the assessment of that unit of competency. The higher the appraised risk (in terms of consequences), the greater the assessment effort likely to be committed.

Several enterprise factors have an influence on the level of assessment embraced by managers. The enterprises where the managers ascertain a need for greater levels of competency assessment are likely to:

- ✧ have a higher level of technology
- ✧ have a history of qualifications
- ✧ be in the private sector
- ✧ be foreign owned.

The effect of organisation size is different for each type of competency with small organisations having higher levels of assessment of enabling competencies and large organisations assessing more defining competencies.

Use of training packages

A comparatively high proportion (40%) of the case-study enterprises claimed to be using or about to use a relevant industry training package. The reasons given for using a training package were:

- ✧ to qualify workers
- ✧ to train workers
- ✧ to structure the workforce (industrially or in terms of remuneration).

Conclusion

Employers, as outcomes of (their own) enterprise-based training efforts, do not significantly value qualifications in the same way as the vocational education and training (VET) sector. The approach taken to 'qualifications' by enterprise managers is generally to seek recognition only of a small number of competencies, not a whole Australian Qualifications Framework qualification. However, this point of view varies significantly in relation to a number of variables, including the job under consideration, and types of competencies being contemplated. Alternative ways of measuring the uptake of training packages, although less available than recognised qualifications, might be more appropriate. These could include:

- ✧ increased competence in areas designated as *critical* to a business, either in defining or support competencies

- ✧ increased use of competency standards as a basis for performance appraisal, and improved performance outcomes using this tool
- ✧ increasingly strong relationships between qualifications frameworks and systems of reward.

An area for further research identified through this study concerns the degree of structure and effort committed to acquiring and assessing of competencies, and how this might vary according to enterprise and job context as well as inherent qualities of the competency itself. These issues have great significance for VET policy, since it is possible that industry (at least enterprise managers) is thinking in quite different ways from VET planners.

1 Qualifications as outcomes of training

Introduction

The importance of education and training for the competitiveness of enterprises has long been recognised, as has its role in providing opportunities for economic and social advancement by individuals (for example, Denison 1962; Becker 1964; Selby Smith 1970; Layard et al. 1971; Selby Smith 1975; Leslie & Brinkman 1988; Maglen 1993, 1995).

A series of United Kingdom studies, undertaken by Prais, Jarvis and Wagner (1989), have raised considerable interest in the differences in outcomes from varying training efforts (for example, Daly, Hitchens & Wagner 1985; Prais & Steedman 1986; Steedman & Wagner 1987; Van Ark 1990a, 1990b, 1992; Mason & Wagner 1994; Wagner 1999).

> Differences in training matter. In a series of brilliant case studies SJ Prais and his colleagues have shown clearly how higher skill levels on the Continent make possible quite different systems of work, involving much greater productivity. (Layard, Mayhew & Owen 1994)

In these studies, comparisons were made between enterprises in Britain and Germany (and, to a lesser extent, Britain and The Netherlands or France) recognising that, for nearly two decades, output per German employee had been exceeding that per British employee.[1] The research program initiated and led by Prais was designed to test the relationship between vocational education and enterprise productivity. Using census of production figures, the output of a German worker was estimated to be some 50% higher than for a British worker. The researchers concluded that the lower productivity found in Britain compared with European countries could primarily be attributed to superior skills in the European workforce, which includes a greater density of vocational *qualifications*.

The studies outlined briefly above by Prais and his colleagues have been very influential in Britain in shaping what some authors have labelled the 'British training problem' (for example, Cutler 1992). Academics, politicians and the broader media have all sought inspiration from these studies extolling the virtues of training (leading to formal qualifications) as a potential panacea for the perceived poor productivity of the British workforce.

Qualifications as a measure of training outcomes

Most importantly for this study, virtually the same arguments used in Britain to support calls for both the quantity and nature of vocational education and training (VET) effort, have been adopted in Australia. For instance, Moran (1998) noted that a measure of the competitiveness of a nation in the global marketplace is that nation's ranking in the number and type of qualifications held by its workforce (see also Sargent 1998; Noonan 1998). The original British research is frequently quoted by Australian authors as a means of supporting the argument for higher levels of training.

[1] The rationale for concentrating on productivity differences in those particular European countries was that, while productivity in those countries has typically exceeded that in Britain, the countries are culturally similar.

Some authors have identified almost a singular preoccupation within VET circles with qualifications as the primary measure of training outcomes. Baker, Wooden and Kenyon (1996) for instance note:

> … the coining of the 'national training reform agenda' training for VET practitioners has really meant developing structured training arrangements leading to *accredited outcomes*.
>
> (Baker, Wooden & Kenyon 1996, p.3, emphasis added)

They argue the focus on accredited outcomes has also meant that a similar emphasis has also been placed on the development of competence through formal means, with a reduced acknowledgement of the importance of skills acquisition through informal and unstructured learning situations (Baker, Wooden & Kenyon 1996).

Value of qualifications

Qualifications are certainly tangible outcomes of training for individuals, employers, training institutions and governments; they are comparatively easily counted; and to some in formal VET circles, they represent the pinnacle of achievement. Few, if any, education and training institutions would not measure the success of individuals (students) by completion of a course (and attainment of a qualification), although part-completed courses can also be valued (although generally less so) by stakeholders on occasion (NCVER 2000a). Similarly, the success of VET institutions themselves is measured in terms of the number of qualifications (both in total and as a proportion of enrolments) and in some institutions the type and level of qualifications achieved.

Apart from the comparative ease of measurement of qualifications, a number of other benefits are attributed to qualifications. Sargent has argued that where goods and services are traded in a global market, there is an increasing demand for consistency in the definition of skills and for assessment of skill standards (Sargent 1998). Qualifications delivered against an overt standards framework allow mutual recognition of skills and knowledge across wide geographic, jurisdictional and international boundaries (for example, Varanasi 1999). This can in theory facilitate labour mobility across enterprise, geographic and even industry boundaries by offering widely accepted evidence of competence.

Types of training and qualifications

It has been argued that training resulting in qualifications represents only the tip of the iceberg in terms of the training conducted in Australian enterprises, and an even smaller fraction of the activities which result in skill acquisition outcomes (Daly 1991; Hager 1997; Black 1997; Department of Employment, Education, Training and Youth Affairs 1998). This is especially so when considering small business enterprises (Smith 1997).

The Australian Bureau of Statistics (ABS) undertook surveys of education and training experience in 1989, 1993 and 1997 (ABS 1990, 1994 and 1998). In the twelve-month period prior to each survey, 79%, 86% and 80% of wage and salary earners, respectively, undertook some form of training. Training effort could be classified 'on-the-job', 'in-house training course' or 'external training course'. The ABS defined on-the-job training as being when an individual participated in a workplace training activity to improve their job skills, while working in a job. Workplace training activities included asking questions of co-workers or colleagues, teaching yourself, being shown how to do your job and watching others work. For each year, on-the-job training was by far the most commonly reported form of training, being 72%, 82% and 72%, respectively, in each year, compared with 35%, 31% and 33% for in-house training courses and 10%, 12% and 20% for external training courses, respectively.[2] Note the definition of on-the-job training excluded any

[2] Note that, since multi-response categories were collected, the components can total more than 100%.

training or study for a formal educational qualification. Thus, the bulk of enterprise training, by definition, is not aimed at achieving a qualification.

The ABS findings, on the proportional balance of training effort in enterprises, are supported by other Australian research and by overseas data. In the United States, Frazis et al. (1998) estimated that for every hour of formal training there were two hours of informal training. Bishop (1991) found that formal training was only 8% of the total hours of training for new hires in the first three months after they joined the firm. Drake (1995) reviewed European studies of 'e-learning' (experience-led learning) compared to 'i-learning' (instruction-led learning) and concluded that more needs to be learned about the various types of e-learning, its relation to i-learning and the circumstances that foster e-learning. A Canadian survey on the array of adult learning activities found that Canadian adults average about 15 hours per week on informal learning, which is much more than is spent in the formal education and training system (Livingstone 1999). A survey of New Zealand employers found that, for a substantial majority of respondents, informal training and the improvement of skills on an everyday basis, were considerably more important for improving skill levels within the organisation than was formal training (Decision Research Limited 1997).

Evidence on the relative allocation of effort between types of training emphasising the significant contribution of informal learning processes in the workplace does not *per se* undermine the achievement of qualifications as a primary outcome of training. Over the past decade gradual change in the VET system has been directed to integrating more fully all forms of training (for example, formal/informal; on- and off-the-job) with a view to broadening the number of possible pathways to qualifications. For example, the Front Line Management Initiative cuts across any explicit distinction between formal and informal education and training. Hager in support of this trend asserts that 'there is increasing evidence that linkage between formal on-the-job training and informal learning is crucial for the skill formation process' (Hager 1997, p.6).

These changes have culminated in the current 'training package' approach, which facilitates the development of competence and subsequent attainment of qualifications through both formal and informal training approaches, or a mixture of both approaches (Reid 1998). Increased attention has been given to recognition of prior learning (Vocational Education, Employment and Training Advisory Committee 1993).

Other perspectives on qualifications

Anecdotal evidence suggests that stakeholders outside the VET system do not value qualifications as much as those stakeholders inside the system. Employers, unions and employees all have varying objectives when they advocate an increased training effort, and qualifications may at times be seen as superfluous to those objectives.

Employers by and large accept the value of training:

> … investment in skills, knowledge and training can raise labour productivity and enhance the productivity of capital. Productivity gains improve the competitiveness and profitability of business. (Allen Consulting Group 1999, p.ii)

They are, though, often sceptical of the claims about the portability of qualifications (Harris & Simons 1999), arguing that even if a national framework for recognising qualifications is a necessary condition of workforce mobility, it is not a sufficient condition. Employers point to the importance of quality assurance in the mutual recognition process and the difficulties which result when trust in the quality of processes is damaged (Sargent 1998). Also many employers see little value in facilitating conditions where their best employees become more 'marketable' and are therefore more likely (or able) to leave (Dutneall, Hummel & Ridoutt 1998).

Small businesses, which by some estimates employ approximately 40% of the total Australian workforce (ABS 1998), are argued to be especially indifferent to the attractions of the VET system in general and qualification outcomes in particular. For instance, Gibb (1999) notes:

> If there is a prevailing training culture in Australia at present, then it is one which is based on structured training and/or recognition of competencies gained in work and life experience leading to qualifications. The statistical data suggests that this prevailing culture has failed to have an impact on small business. (Gibb 1999, p.40)

Stokes, in affirming that 'VET orthodoxy is of no particular value to small business' offers some insight as to why 'VET success is measured in terms of learning outcomes, national standards and credentials, whereas for small business "success" means profitability and survival' (Stokes 1998, p.25).

Employees, while seemingly more favourably inclined to qualifications (Allen Consulting Group 1999), often emphasise the role of training more in mastering their job and obtaining job satisfaction than in obtaining formal qualifications. They are generally interested in qualifications for their instrumental relationship to reduced risk of unemployment and for providing a basis for increased incomes (Blundell, Deardon & Meghir 1996). If alternative pathways to these outcomes are available, the qualification pathway does not necessarily remain so attractive for employees.

From a theoretical perspective also, a preoccupation with qualifications (especially as they derive from a very formal and structured national training framework) has been questioned. For instance, the research basis of much of the VET policy direction, both in Britain and in Australia, has come under increasing criticism. Fault has been found in the British research in regard to the rigour and appropriateness of its methodology (Cutler 1992) and on the basis of its bias towards certain political and economic philosophies that emphasise rigid control of worker behaviour within a narrow capitalist framework (for example, Crouch, Finegold & Sako 1999; Payne 2000). As a consequence, the layers of policy constructed on the research bedrock has also come under attack, such that Payne was able to comment in regard to the British situation:

> Throughout the 1990's education and training policy became increasingly mired in the belief that simply boosting the outputs of the VET system by expanding the supply of educated and skilled employees, would be sufficient to transform national economic competitiveness and realise the vision of high skill, high value-added capitalism … It is now widely accepted amongst critical academic commentators in the field that this prevailing policy orthodoxy is both myopic and deeply flawed. (Payne 2000, p.359)

Practical problems with qualifications

In theory, the current frameworks in the vocational education and training area should result in qualifications being attained as easily from informal on-the-job training as from training structured through in-house or external training courses. This does not appear to be obvious to enterprises (Dutneall, Hummel & Ridoutt 1998). In practice, there are two considerable impediments to widespread acceptance of qualifications as a suitable outcome of training. First, traditional notions of qualifications only being associated with formal courses (and certain types of worker) often prevail at the industry or enterprise level. And where these traditional values are not a factor, the requirement still at some point to involve a registered training organisation (RTO) in training delivery and/or assessment can result in barriers being erected.

For instance, when initially attempts to improve flexibility in the VET system were being attempted, Curtain (1994) identified a lack of employer engagement with the proposed development of the formal training system. He found the formal training system remained inflexible in its approach to unstructured learning. Curtain's findings were supported by a Towers Perrin survey of employers (1993, p.97) that identified a number of industry concerns about the competency standards

framework (which still underpins qualifications frameworks in current training packages). These industry concerns included:

- ✧ the standards reflected a professional and/or educational perspective and often did not take into account efficiency and work value
- ✧ the standards frameworks controlled the labour market through training requirements and ran counter to enterprise-based work arrangements
- ✧ the standards emphasised formal course completion rather than broad competence acquisition processes.

Many employers continue to argue that the complexity of the VET system prevents industry attempting to help employees convert competence attained (through various means) into qualifications (National Electrical Contractors' Association 1998; Allen Consulting Group 1999). This is despite the federal government's intention to link training more closely with employment and move to an industry- and enterprise-driven training system, which focuses more on the development of direct relationships between enterprises and individuals on the one hand, and training providers on the other. The development of the VET training market over recent years and the introduction of new apprenticeships from January 1998 illustrate these trends (Selby Smith 2001, pp.112–26).

In addition, the capacity of formal VET training institutions to deliver training appropriate to the attainment of qualifications is sometimes questioned (Harris, Bone & Simons 1998). A majority of employers are not confident what functions workers with particular types of qualifications can actually perform, and would like a greater input into course design (NCVER 1999). Similarly, a study of the decline of apprenticeship uptake in the electrical industry found that qualifications, or at least courses designed to deliver formal qualifications, were losing their lustre. Many employers were valuing less what the traditional apprenticeship product could deliver; instead, they were increasingly favouring competence development that delivered 'the operative who can handle uncertainty and solve problems' (National Electrical Contractors' Association 1998, p.23).

Another Australian study by Burke et al. (1998) of leading-edge enterprises in a number of industries, found that training for skills in new technology areas was, in the first instance, usually provided on an in-house basis by established training departments. Moreover, each enterprise had experienced deficiencies in the existing institutionalised systems of training with regard to meeting new skill requirements. Interestingly, each company had a dominant profile within its industry sector that allowed it to set standards for sub-contractors and component suppliers, so that the enterprise was acting as teacher and diffuser of technology and skills to supporting companies. Under these circumstances, where the enterprise is setting the relevant standards, what benefit would there be in pursuing generalist industry qualifications? As argued earlier, enhanced employee mobility in general does little to help employers if the best employees are more likely to be poached by a competitor.

2 Different perspectives on training outcomes

Training outcomes—different perspectives

The outcomes of training effort undertaken at the enterprise level (by contrast with international comparisons, for example, McKenzie 1998) are difficult to measure, and until recently have not been the focus of much research (Smith 2001). The common understanding is that training *does* produce benefits for the organisation. However, very few studies have been able to quantify those benefits. Long et al. (2000) note that: 'despite its importance, there is very little information in the literature about the rates of return to employer-supported education and training' (Long et al. 2000, chapter 5).

Discussion in chapter 1 suggests that formal qualifications are a questionable measure of the outcomes of enterprise training effort, at least in the view of employers.[3] Since qualifications as the sole or even the primary outcome of training is questioned by employers (and to employees to varying degrees as will be discussed later), are there other more suitable forms of outcome measure for competence acquired? Consider the following quotation:

> Thus two breakfast cereal producers, alike in almost every respect, had adopted radically different approaches to their training. Whilst one enterprise had played a major role in the development of the Certificate of Food Processing and was implementing this for its shopfloor employees, the other had developed its own enterprise competencies and was delivering training customised to the needs of the enterprise rather than the industry.
>
> (Smith 1997, p.145)

Are the employees in the second cereal-producing company in the above quote likely to be less competent than those in the company pursuing training through formal qualifications? If they are equally competent, is there any additional value for that enterprise in obtaining nationally recognised qualifications? If not to the enterprise, are there benefits for the employees or the industry in general?

The types of outcomes from vocational education and training that *are* valued will vary, depending on whose perspective is sought, and the circumstances from which the perspective is being constructed. Different views are held by various participants in the training process (Harris & Simons 1999), their views being shaped by a range of factors, including personalities and histories, self-interest and work cultures. Three main perspectives are considered in the remainder of this chapter:

- ✧ those of employers
- ✧ worker/employee perspectives
- ✧ the union perspective.

Particular attention is given to the employer's perspective because the overall research study is primarily interested in the viewpoint of the enterprise or employer.

[3] However, it is not the thesis of this study that qualifications are a poor outcome measure; rather, it is proposed that they are not the only, nor necessarily even the best, measure of the outcomes of training effort, especially within enterprises.

Employer perspectives

Cost and benefit concerns

A number of papers in the collection edited by Lynch (1994) emphasise that there are important differences in firms' training needs, depending on a range of factors, including the initial skill level of workers. Oulton and Steedman compare the British system of youth training with Germany; Berg presents a comparative analysis of training in the United States and German automobile industries; Hashimoto examines the employment-based training which is undertaken in Japanese firms operating in Japan compared with those undertaken in Japanese firms operating in the United States. Groot, Hartog and Oosterbeck consider the returns to within-company schooling employees in The Netherlands.

International comparisons of training in the private sector show there are significant differences across countries in enterprise responses to these training needs. For example, non-managerial and non-technical workers receive little skill-enhancing, formal training in the United States compared with their counterparts in Europe and Japan. However, an important common theme argued by many is that if companies are to engage in training, they must see it as profitable for them to do so (for example, Noble 1994; Stokes 1998).

A 1998 Organisation for Economic Co-operation and Development (OECD) study provided a brief summary of 19 studies from nine countries, which demonstrated positive effects on productivity for firms from a variety of training programs (OECD 1998, pp.62–3). The (US) National Association of Manufacturers has also provided a collection of brief descriptions of positive outcomes of training programs in 17, generally fairly large United States manufacturing companies (National Association of Manufacturers 1998). The Australian National Training Authority (ANTA) and the Victorian Office of Training and Further Education (OTFE) have commissioned research to provide enterprise frameworks for estimating the return on training investments (for example, Davidson et al. 1997), which have mostly shown very positive returns on training investment.

Despite the general level of professed enthusiasm for training and a belief in its benefits, individual enterprises still need to make very practical decisions aimed at achieving a balance between the benefits and costs of training (perceived or real). For instance, National Electrical Contractors' Association (1998) revealed that (based on 1995 data), the training wage for apprentices in Australia was generally double the wages offered to apprentices (as a proportion of adult skilled wages) in most European countries. Indeed, because of the high training wage for apprentices *vis à vis* their output with respect to a qualified tradesperson, Dockery et al. (1997) conclude that the 'average' Australian firm fails to achieve a net benefit on its training of apprentices until year four of the apprenticeship. Interestingly, however, while 78% of enterprises studied by Dockery et al. were calculated to be making a net loss on their apprentices over the full term of the apprenticeship, 82% nevertheless still believed they were obtaining an overall financial benefit. In the face of this finding, Dockery et al. surmised that:

> … employers have a strong commitment to apprentice training for reasons that are non-economic or not internal to the firm. These include an obligation to contribute to training in the industry, to contribute to the supply of tradespersons, to perpetuate their trade or to give a young person an opportunity. (Dockery et al. 1997, p.267)

Another area of almost unquestioned training investment is in new employees. Blandy et al. (1999) found that about half of the time of incoming employees in Australian enterprises is taken up with training over the first three months of their employment, compared with about a third of the time of incoming employees in the United States. While the investment levels of Australian employers (and workers) are higher, nearly all of the productivity gains from the training of incoming employees were captured by firms in Australia, compared with only about half of the productivity gains in the United States. Blandy et al. argue that taking these two factors together implies that

employer-sponsored training is probably about as profitable to Australian firms as it is to United States firms. The results suggest Australian enterprises are well aware of the costs and benefits of training and that they reap good returns from the training they provide. Of course, there can be major differences in the profitability of training among enterprises.

Strategic and operational expectations

Rogers argues that industry believes in a broad link between training and innovation, research and development effort, and change (Rogers 1999). More generally, the Allen Consulting Group argues that there is a relationship between the knowledge and skills of workers and business performance, and, in turn, investor support (Allen Consulting Group 1999). Based on the views of over 350 Australian companies, the Allen Consulting Group found strong preferences among a significant majority of companies for quite specific outcomes from training:

- improved quality (94%)
- improved competitiveness (88%)
- multi-skilled employees (87%)
- health and safety legislative compliance (77%)
- workplace change (69%)
- company commitment (67%).

Interestingly, few of the companies expressed a desire for their employees to gain qualifications.

Stokes (1998) found that most small businesses were content to see their employees gain qualifications, as long as the immediate benefits of training for the business were first satisfied. Achieving formal qualifications from the training of their employers was not their prime objective (see also Gibb 1999).

The Allen Consulting Group study also noted that the professed views and intentions of industry are not always translated into appropriate training effort, either quantitatively or qualitatively. An obvious reason is that the strategic expectations of enterprise executives are not always enacted by individual line managers, who actually control most training judgements (Noble 1994). At this level, there is a strong emphasis on training that can deliver immediate benefits (Noble 1994). The training investment tends to be in key skills required to improve current productivity (Allen Consulting Group 1999). However, even at the executive management level, professed strong training expectations are often in conflict with the remoteness of the training function from the key decision-making and strategic direction of the enterprise (Kane, Abraham & Crawford 1994), and the beliefs and actions of managers in other human resource areas. For instance, the Allen Consulting Group found that there was strong support in the industries they surveyed for moving the development of most skills back to the pre-recruitment stage. This would save expenditure for the enterprise, but tend to enhance the need for qualifications as a means of determining the competencies of a potential recruit.

Business and training strategies

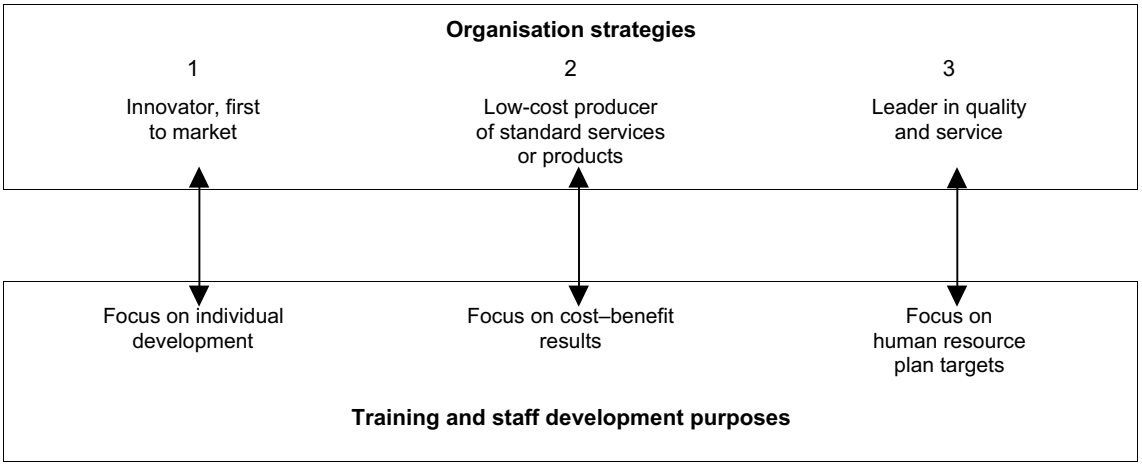
Kane, Abraham and Crawford (1994) proposed three main purposes that enterprises might espouse as desired outcomes of training effort. They attempted to fit a number of top 500 companies surveyed into one of these three categories:

- focus on individual development
- focus on cost–benefit results
- focus on human resource plan targets.

They found a relationship between these training purposes and the broader organisational strategies adopted by an enterprise. These relationships were not mutually exclusive. For instance, at a

particular point in time an organisation might be pursuing both an individual development (short-term) and human resource plan (long-term) approach. However, the inherent conflict between different approaches 'forces' a predominant focus to be adopted. The relationships between organisational strategy and training purpose are illustrated in figure 1.

Figure 1: Organisational strategy and training purpose relationship



Source: Adapted from Kane, Abraham and Crawford (1994, p.114)

The first and third organisational strategies noted in figure 1 are most conducive to high levels of training investment. The cost–benefit approach essentially sees training as a 'cost' to be minimised. The organisation strategy of 'leader in quality and service' allied with a 'focus on human resource plan targets' as the training purpose is the combination which appears to be most likely to result in qualification outcomes for an enterprise's workers. This is because firstly, the emphasis on quality supports some form of 'certification' and secondly, because the long-term perspective accommodates the gradual attainment of a recognised qualification. In fact, Kane, Abraham and Crawford found few companies with executive managers who espoused the human resource plan approach. The most common training purpose was found by them to be a focus on individual development, with a further third of company executive managers favouring the cost–benefit approach. In practice, those favouring a cost–benefit approach were less interested in achieving measurable outcomes and more interested in saving money.

The Kane, Abraham and Crawford (1994) study results support the view that employers by and large look for outcomes beneficial to the business. This is consistent with the findings of other studies (for example, Noble 1994; Stokes 1998; Harris & Simons 1999). Whether employers seek immediate benefits (for instance in the form of specific competencies to operate a new piece of equipment) or longer-term gains (such as increased competitiveness or enhanced company commitment) depends on the enterprise's strategic organisational (and training) direction. Hayton et al. (1996) suggest that the size of the organisation will often be a factor in determining the organisation's stance. Smith (1997) further notes that even within an enterprise the 'interpretation' of the organisational direction may vary at different management levels, with the levels closer to operations likely to adopt a more instrumental and less 'far-sighted' approach.

Types of employee

There is clear evidence that enterprises expend different levels of training effort on certain worker categories, with varying levels of expectation. The ABS surveys of education and training (ABS 1990, 1994, 1998) found that the incidence of on-the-job training was related strongly to different employment characteristics, such as occupation, sector of employer, and employment status. It also varied by demographic characteristics of the trainee, such as age, state or territory of residence, birthplace and level of educational attainment.

Outside the more traditional apprentice-like training programs and training for new employees (see above) it seems that employers are more discriminating in their training investment and their expectations. Here the barriers to obtaining qualifications seem more pronounced and influential. One of those barriers is that training can deliver competencies that do not add up to a recognised qualification (Noble 1994; NCVER 2000a). Neither employers nor employees, at least on the basis of anecdotal evidence, appear to care much for qualifications in the form of 'statements of attainment' (Dutneall, Hummel & Ridoutt 1998), except when they equate to a discrete and observable endowment (for example, a licence).

The differentiation, at least in the investment decisions of enterprises, between types of employee is a cause for concern with many observers (Piore & Sabel 1984; Cutler 1992; Payne 2000). The Tavistock Institute (1998) refers to research that identifies a growing divide between certain types of jobs that are becoming 'knowledge rich' and others that are being gradually deskilled as a result of production processes that place the control of work in fewer hands. Rifkin (1996) describes this situation well:

> … whatever vestigial control workers exercise over the production progress by programming instructions directly into the machine, which then carries them out verbatim. The worker is rendered powerless to exercise independent judgement either on the factory floor or in the office and has little or no control over outcomes dictated in advance by expert programmers.
>
> (Rifkin 1996, p.182)

On the 'upskill' side of the above divide are professionals, managers and technicians, and on the other, a growing number of peripheral forms of employment (the occupants of which make up the poorer and clearly disadvantaged side of a segmented labour market [Piore & Sebel 1984]). Payne (2000), among others, notes substitution of 'soft' or 'generic' skills (for example, work as part of a team) for 'technical' skills apparently desired by enterprises for many of their workers, and largely supported by VET policy, leads not to upskilling as many claim, but rather to development of very basic skills. Any qualifications that arose exclusively from such training would, according to Payne, have limited value.

Worker/employee perspectives

The Allen Consulting Group (1999) suggest that employees are interested in formal qualifications to enhance their employment prospects and choices and to reduce their long-term risk of unemployment. Employees see qualifications as a means of obtaining increased incomes and job satisfaction. The examination by Blundell, Dearden and Meghir (1996) of the determinants and effects of work-related training in Britain offer conditional support for this stance. They note that work-related training appears to be particularly important for the wage prospects of individuals with intermediate-level school qualifications.

Formal qualifications do not necessarily result from the employer-provided training, although the returns to employees from employer-provided training are surprisingly transferable across employers. More importantly, however, individuals in the United Kingdom with only intermediate-level school qualifications were found to be less likely to obtain work-related training, particularly that which led to a formal qualification (Blundell, Dearden & Meghir 1996). This finding resonates with an Australian study by McKenzie and Long (1995). They found that those with post-school qualifications were much more likely to be engaged in training leading to further qualifications than those without existing qualifications.

Barron, Black and Lowenstein (1989) analysed the results of a 1982 survey in the United States which provided information about on-the-job training given to new workers by 1901 employers who employed people in low-wage jobs. A 10% increase in training resulted in a 1.5% increase in wage growth for these employees and it appeared that training was the main cause of the wage growth. The training was estimated to increase productivity by twice as much as it increased wages.

They concluded that employers benefit from the increased productivity that results from training, but that they return about half of this benefit as higher wages to their employees. A related study in the Netherlands by Groot (1997) found that training raised management estimates of productivity by 16%, on average, and wages for these workers rose by 3.3%. Employers were again benefitting from training, but in this European case, they were passing a much smaller proportion on to employees and keeping a larger proportion of the total benefits for themselves.

From a human resource management perspective, it appears that most employees can achieve most of their extrinsic reward expectations without obtaining a qualification. Employees understand that qualifications are a means of obtaining a higher rate of pay or a promotion but also know that obtaining the qualification is no guarantee of reaping these rewards. As Long (1998) has shown, a significant proportion of the Australian workforce has a highest qualification in excess of that needed for the current job. In the longer term, this discrepancy provides for flexibility in the face of changing conditions, which may benefit employees and their employers. In the short term, the costs of education and training have been incurred and, especially if remuneration is related to current performance and not future potential, are unlikely to be offset by commensurately increased benefits.

Union perspective

In strongly unionised industries and enterprises there is a greater likelihood that the workforce will be pursuing formal qualifications than in industries and enterprises where the union presence is weak (Hayton et al. 1996). Unions have played an important role in linking qualifications to industrial classification systems, including remuneration and promotion (Curtain 1994). Indeed, the tactic is part of an employee representative organisation's overall strategy tool kit.

Qualifications appear to be increasingly valued in industries where traditionally only tradespersons and professionals were qualified, possibly as a method of achieving greater parity in wages and conditions. This change may be related to the nature of those industries. Curtain (1994) notes the emergence of a new qualifications-based labour market for base-grade or entry-level personnel, broadly classified as 'operators'. He argues that such qualifications-based labour markets have emerged in the metals, vehicle manufacture, food processing, textiles, clothing and footwear, cement manufacturing, and hospitality industries. Thus, there is evidence that industry factors influence the attractiveness of qualifications for different stakeholders.

Of course, employee representative organisations are not likely to be fixed on training, and particularly qualification outcomes, as a way to facilitate favourable financial and conditions outcomes for their members. Dutneall, Hummel and Ridoutt (1998) found that union officers would use qualifications as a means of obtaining member gains only when that tactic was judged to be most propitious. At other times more direct methods of bargaining might be employed that could result in more training effort (for instance as part of an enterprise bargaining agreement), which may or may not result in recognised qualifications.

Teicher has argued that the continuing individualisation of the employment relationship, including the growth of nominally independent contracting and non-standard employment, is leaving a gap in the process of skill formation (Teicher 2000).

Summary remarks

Many of those in the formal VET system in Australia (the Australian National Training Authority, state training authorities, registered training organisations) believe qualifications are the primary outcome of training effort. However, the literature suggests that employers, workers and unions are not as enamoured of qualifications.

It would appear that employers, workers and unions seek a number of other outcomes from training, of equal or greater importance. For enterprises the valued outcomes of training are those which contribute immediately or strategically to the achievement of business goals. Thus training is beneficial because it means a new piece of technology is mastered and this contributes (indirectly) to the enterprise's profit and growth prospects, or training outcomes result in longer-term productivity gains that are less easily attributable to training, but are nonetheless tangible to 'culturally' sensitive employers. Enterprises with cultures more amenable to higher levels of training effort are those that the Australian National Training Authority (ANTA 2000) might term 'high valuer' organisations, that Field (1998) might describe as having 'technocultures' that foster empowerment, and Hayton et al. (1996) would probably identify as in a state of change. Whatever their 'culture', these enterprises tend to view qualifications at best as an intermediate measuring stick on the way to more valued outcomes of training effort.

For employees and unions, the outcomes sought tend to be both intrinsic and extrinsic rewards. Again, for this stakeholder group, qualifications are seen at best as a means to an end. For many of the valued outcomes, such as increased financial rewards, job satisfaction and job security, qualifications are not necessarily the most effective or the most economical means of achieving them.

This project

As has been established, qualifications are just one of several possible outcome measures, thus the place of recognised qualifications *vis à vis* other measures of training outcome becomes of more central interest. The purpose of the present research study therefore was to explore the relationship between total competence requirements of an enterprise for the performance of specific jobs and that part of the competence requirement that needs, in the opinion of employers, to be formally recognised.[4] Total competence requirements identified by an employer for a particular job can be categorised initially in two ways:

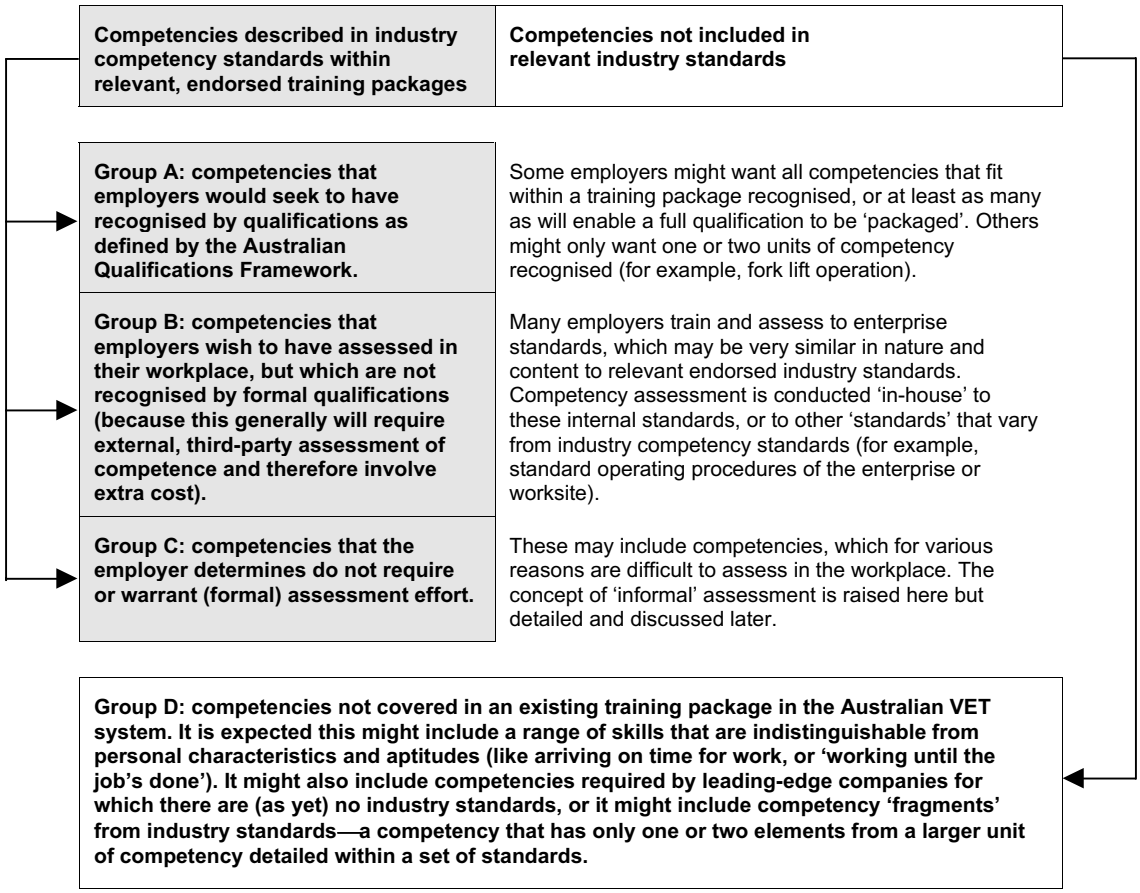
- ✧ competencies that are described (in part or full) in industry competency standards within endorsed training packages
- ✧ competencies that are not detailed in training packages but are nevertheless valued by employers in some other way.

The VET sector perceives the first category of competencies as relatively homogenous—in theory all units of competency within an industry competency standard are considered of 'equal' value or worth. However, employers appear to discriminate between competencies, expending different levels of effort on the development (training) and assessment of individual units or different classes of competency. A way of describing the employers' perspective is illustrated in figure 2.

Various combinations of employer requirement of competency *attainment* and *recognition* are possible. This research project has focused on expanding understanding of the above 'model' by exploring and quantifying the relationship between the different groups of competencies and defining what actually constitutes group D competencies.

[4] The term 'recognised' is used throughout this document only with a very specific meaning. It means recognition of competence in the form of a qualification as prescribed within the Australian Qualifications Framework (including a statement of attainment for a single unit of competency or course 'module') or other accepted public body such as an occupational health and safety organisation. See chapter 4 for more detail.

Figure 2: Employers' view of competencies



3 Methodology

Introduction

There is an acceptance that qualifications capture only a small percentage of all skill acquisition by Australian workers (Daly 1991; Hager 1997; Black 1997; Department of Employment, Education, Training and Youth Affairs 1998). However, despite substantial national investment in training, there has been very little research undertaken on the relationship between training and qualifications or other forms of training outcomes.

Against that background, this project was conducted as an explorative study. A case-study method of information collection was chosen to explicate enterprise level issues that might provide insights into the relationship between training/learning and valued outcomes, including qualifications.

Selection of case studies

Studies were conducted in 23 case site enterprises distributed across five industry sectors. The five industry sectors were:

- chemical and oil
- manufactured mineral products
- plastics, rubber and cablemaking
- entertainment
- libraries and museums.

The five industry sectors selected for the study, described in detail in appendix 4, are all covered by the consortium partner industry training advisory boards (ITABs): Cultural Research Education and Training Enterprise (CREATE) Australia and Manufacturing Learning Australia (MLA). Other partners in the consortium had built a sound knowledge of these industry sectors through years of consultancy and training delivery with relevant industry enterprises (see appendix 5 for details on the partners to this research effort).

This knowledge of organisations in the chosen industries was employed in the selection of the actual case-study enterprises. Suggestions for prospective case-study enterprises were invited from the respective boards of the Cultural Research Education and Training Enterprise and Manufacturing Learning Australia. These suggestions were considered through consultation among the consortium partners, and a final selection made on the basis of a limited number of criteria (see below) and perceptions of the likely receptiveness of companies to be involved in a comparatively arduous data-collection process. From the outset all of the 25 enterprises selected to participate in the study were enthusiastic. As a small case-study-type sample of enterprises, no pretence was attempted to gain a sample 'representative' of the industries included in the study, although as discussed below, efforts were undertaken to at least ensure sufficient variety amongst the enterprises on a number of selection criteria.

In selecting enterprises for the study the primary criteria (with one exception noted below) was that the enterprise employed a significant proportion of their workforce whose jobs could be defined by the competency standards of one of the following training packages.

Table 1: List of case study training packages

Training package	Responsible ITAB
Entertainment	CREATE
Chemical, Hydrocarbons and Oil	MLA
Plastics, Rubber and Cablemaking	MLA
Manufactured Mineral Products	MLA
Museum and Library/Information Services	CREATE

Note: CREATE = Cultural Research, Education and Training Enterprise; MLA = Manufacturing Learning Australia.

As secondary selection criteria, the following enterprise characteristics were considered:

- ✧ history of involvement with technical and further education (TAFE) and/or the relevant industry training advisory board
- ✧ size of the enterprise (as defined by number of employees rather than revenue or turnover)
- ✧ employee skill levels (for example, operator, trade, and technician).

Table 2: List of case-study enterprises

Organisation	Description
Australian Broadcasting Corporation	Produce and broadcast film, television and radio programs, large employer
Blue Circle Cement	Cement manufacturer, part of a larger national network of cross-owned cement manufacturing assets, large employer
Boral Plasterboard	Subsidiary of a larger organisation manufacturing plaster based building materials, large employer
Bridgestone Australia	Tyre manufacturer, large organisation
Britax Rainsfords	Large manufacturer of component parts for the motor vehicle industry
Cartigny Pty Ltd	A medium-sized enterprise producing plastic wrap and paper products
Castrol	Oil mixing, packaging and distribution, part of a large multi-site organisation
Casula Powerhouse Arts Centre	Gallery and museum, small employer
Ecolab	Subsidiary of large multinational batch chemical manufacturer specialising in a range of detergents; the site where data were collected, and at the time of collection, was a small employer
Hornsby Library	Council library, small workplace; however, part of a large employer (council)
Illawarra Performing Arts Centre	Entertainment venue, small organisation
James Hardie Building Products	Construct non-metal building materials for the construction industry, subsidiary of a large multi-site organisation
Nowra Chemical Manufacturers	Small, family-owned, batch chemical manufacturer of detergents
Nuplex Resins Australia	Batch resin-manufacturing plant, medium size
Pirelli Cables Australia	Manufacturer of fibre optic and other plastic sheathed cables, large company, one of only two in the industry
Rescrete	Large manufacturer within the concrete products industry, making building panels, tanks, pre-stressed beams
Rocla Pavers and Masonry	Manufacture moulded concrete products including pavers, retaining wall blocks and building blocks, large organisation
Shinagawa Thermal Ceramics	Medium-sized manufacturer of refractory products
State Library of NSW	Library, large organisation
Sutherland Shire Libraries	Council-run library, small worksite; however, part of a large employer (council)
Sydney Opera House	Entertainment venue, large organisation
Vinidex Tubemakers	Large organisation which produces plastic pipes for the electrical and construction industries
WIPCO	Medium/small plastics injection moulding company, manufacturing a range of products for the packaging industry

Some balance in the sample case enterprise population was attempted across these characteristics.

Initially letters were sent from the relevant industry training advisory boards, Cultural Research, Education and Training Enterprise and Manufacturing Learning Australia, to prospective case-study companies, outlining the study and requesting participation. Prospective companies were called and appointments for an onsite consultation arranged. Two enterprises who originally agreed to be a part of the study subsequently withdrew at the last moment due to health (of the primary contact) and restructuring 'noise' (the selected enterprise was the subject of a takeover bid). As we were only informed late of the dropouts, it was not possible to recruit new enterprises to replace the two that could not be surveyed.

The 23 enterprises surveyed are shown in table 2.

A summary of the distribution of the case-study enterprises by industry sector is outlined in table 3.

Table 3: Distribution of companies by industry sector

Industry sector	Number of companies surveyed
Chemical, hydrocarbons and oil refining (CO)	4 (17.4%)
Manufactured mineral products (cement, glass, concrete and ceramics) (MMP)	6 (26.1%)
Plastics, rubber and cablemaking (PRC)	6 (26.1%)
Libraries and museums (LM)	4 (17.4%)
Entertainment (Ent)	3 (13.0%)

One of the selected case-study sites, the Australian Broadcasting Corporation, was different from all of the rest in one important aspect—its technical workers were not covered by a relevant *endorsed* training package at the time this research was conducted. However, this enterprise was selected on the basis of the organisation's desire to understand how current formal in-house training programs/ courses could be reconciled with the qualifications framework of the newly drafted (and in the process of being endorsed) Film and Television Training Package.

Data collection

A mixture of quantitative and qualitative data was gathered through interviews conducted with managers, sometimes with experienced workers in attendance. Both quantitative and qualitative data-gathering were facilitated through visits to each of the study organisations. Visits lasted between four and eight hours.

Data collection on enterprises

Information on enterprise characteristics was collected through a 12-page self-completion questionnaire. Generally this questionnaire was completed by the enterprise manager during the visit to the case-study site, but in two cases it was completed by phone interview subsequent to the visit. The questionnaire included data on enterprise size, quality orientation, training activity, learning environment and management commitment.

Data collection on competencies

An interview protocol was developed and piloted in two enterprises by the consultants. Findings from the pilots led to a fine-tuning of the protocol, which was then used in all subsequent case studies. For a copy of the protocol see appendix 1.

The interviewee

The case studies involved the consultants spending between a half and a full day at each selected enterprise. Information was collected from interviews with managers and/or supervisors accountable for workers whose jobs were to be the focus of examination.

The type of manager interviewed varied from case study to case study. In the majority of cases at least one manager present was in what might be termed an 'operations management' role. This would be variously an 'operations', 'site', 'technical services' or 'production' manager title. In the smaller enterprises, the person interviewed would be the owner/manager.

In some of the larger enterprises, a section or branch director was interviewed, but more commonly a human resources manager was the principal person interviewed. Ten of the 23 case-study sites where interviews were conducted involved a human resources management person, most often a training specialist, but in three cases a generalist human resources person. Invariably, a human resources interviewee would be accompanied by experienced employees (those performing the jobs under examination and therefore able to offer a potentially more complete and accurate assessment of the job and its competence requirements) or a manager/supervisor directly accountable for the people performing the jobs being studied.

While it was continually stressed in the interviews that it was an 'enterprise management' perspective being elicited not a personal viewpoint, there is no doubt the different interview situations could have affected the data collection outcomes. In particular, the presence of experienced workers with a human resources manager may have influenced the primary interviewee's responses. On the one hand, the manager response could have benefitted from the worker presence by gaining a more realistic appreciation of the job (as actually performed). On the other hand, it could have distorted the true management perspective on competence requirements, and especially the need for recognition of particular competencies identified.

All interviews were conducted at the selected enterprise site, although some follow-up conversations to clarify certain points were conducted by phone.

Interviewers

The interviews were conducted by three of the four authors of this report in roughly equal numbers. The interviewers all had extensive experience in vocational education and training (including having collaborated in the development of three of the five training packages pertinent to this study and worked extensively with one of the others), and were very experienced in communicating with personnel at the enterprise level. The interview team was supported, as noted earlier, by consortium partners to this research project including the two relevant industry training advisory boards.

Interview content

Interview subjects were asked to nominate 'benchmark' or 'typical' jobs in their enterprise covered by one of the training packages included in the study. Invariably, 'technical' jobs at the heart of the enterprise's process of production were chosen.[5] In all, the 22 enterprise case study interviews yielded a total of 72 jobs for analysis (64 separate job titles; see appendix 3 for a complete listing of the job titles covered), the number of jobs nominated by each enterprise ranging from one to eight. If qualifications were aligned with the jobs selected then they would range from certificate II to at least diploma level (AQF levels II to V), with the bulk of the jobs aligning with AQF level II (28%) and level III (42%).

For each job selected, the person/s interviewed were requested to identify the competencies required to perform the job. Lists of competencies were created to present to ingenuous managers and

[5] In the case of the service industry enterprises the jobs chosen were also critical to the 'production' of the services provided by that enterprise.

workers especially to facilitate the identification of appropriate competencies (for an example of the type of units contained in each list see appendix 2). The method of conception of the lists was borrowed from the framework devised by Manufacturing Learning Australia in its 'starter kits'—introductory 'navigation'-type documents to their training packages.

The 'starter kits' themselves were based on a simple design principle that in most (if not all) training packages, it is possible to differentiate between types of competencies. Payne (2000), somewhat pejoratively, comments on a 'veritable galaxy' of competency types such as 'soft', 'generic', 'transferable', 'social', 'basic', 'technical', 'employability', 'key', 'management' and 'inter-actional'.[6] However, in this study, in order to make the task as simple as possible for the interview subjects, we differentiated between only two basic types of competencies:

- 'industry' or '*defining*' units of competency
- 'enabling' or '*support*' units of competency.

Industry or job-specific units of competence are those that help *define* the industry or sector in which the competence is to be employed (for instance, plastic versus rubber) and/or the type of job the competent worker is able to perform (for instance, injection moulding versus vacuum forming). The following units of competence, extracted from all the training packages relevant to this study, are examples of 'industry' or 'defining' competencies:

Screen the film (CUE CIN 3A)
Make costumes (CUE COS 4A)
Operate chemical separation equipment (PMA PROC 208A)
Run blow moulding equipment (PMB PROD 11A)
Run continuous thermoforming equipment (PMB PROD 12A)
Assist clients to use information service effectively (CULLB201A)
Contribute to collection development (CULLB507A)
Undertake cataloguing activities (CULLB412A)
Operate a calcining kiln (PMC OPS 210 A)
Batch mix concrete (PMC OPS 260 A)
Operate container forming equipment (PMC OPS 245 A)

Each of these competencies will be easily associated with a particular job or occupational title. They define these jobs, differentiating them from other jobs in the same and other industries. For instance, the example units of competency listed above can be readily linked with, and help to define, jobs such as projectionist, costume designer, chemical plant operator, blow moulding operator, thermoforming equipment operator, library assistant, cement kiln operator, premixed concrete batcher and waremaker.

Employers and trainers within industry enterprises sometimes refer to 'enabling' or *support* types of units of competence as 'soft' skills. These are more generic competencies that could easily be adopted across a range of industries. Indeed, as discussed briefly above, and in more detail below, there is considerable overlap between training packages in these enabling competencies (but not in the 'defining' competencies). Some examples of enabling competencies are:

Follow OH&S policies and procedures (PMA OH&S 100 A)
Apply quality processes (PMC SUP 190 A)
Complete workplace documents (PMB COMM 01A)
Provide service to customers (PMB CUST 01A)

[6] Payne's apparent view on 'enabling' competencies is that, increasingly, jobs are being emptied of specific 'technical' content in favour of the creation of jobs that only require generic competencies to perform—leaving a primary labour market with few jobs rich in content, and a secondary labour market with many generic (and presumably low-paid) jobs. In opting to acknowledge 'enabling' competencies in this report, the authors are not accepting as a corollary, that jobs therefore will be created devoid of technical competence requirements.

The common areas covered by enabling competencies are:

- ✧ occupational health and safety
- ✧ communication
- ✧ training and assessment
- ✧ quality
- ✧ business management
- ✧ customer service
- ✧ product/materials handling
- ✧ maintenance.

Interviewee task

Interviewees were first asked to identify those competencies that were required for the job. Having identified all of the competencies required to perform a designated job (an opportunity to add competencies not listed was provided), the interviewee was then requested to discriminate between competencies that required recognition (in terms of a formal 'qualification') and others that required other forms of assessment.

At the conclusion of the interviews the lists of identified competencies then became the reference point for questioning the employers/managers in each enterprise. Reasons for, and attitudes about, observed gaps between actual competencies and qualifications were probed. Interview data were supplemented by researcher observations, gathered while on the site and likely to be related to the company's 'training culture' and its business strategy.

Data analysis

Case study data were analysed in two ways:

Quantitatively for each job, the number of competencies that had been described as being part of the job were separated into two groups—defining or job-specific and enabling. The competencies in each group were then counted.

The same process was followed for counting the competencies that were described as either requiring formal recognition (Group A), formal assessment, but not recognition (Group B), informal assessment (Group C) and no assessment (Group D).

Qualitatively a content analysis of the information collected through interviews was undertaken. To ensure all of the relevant issues were answered, the information was partially 'processed' into broad areas of interest that mirrored the information requirements of the research questions. These broad areas of interest included:

- ✧ attitudes to qualification
- ✧ attitudes to assessment
- ✧ approach to training
- ✧ impediments to the recognition of competence
- ✧ perceived differences between competencies.

4 Exploratory themes

Introduction

As noted earlier, this study was intended to be exploratory in nature with a methodology that, it was hoped, would enrich future speculation and conjecture on the issue of outcomes of enterprise training. The chief benefit of adopting such an investigative methodology has been the insight gained on a range of aspects of enterprise training and assessment. In the following sections of this chapter a number of content themes is explored, with both qualitative and quantitative data from case studies drawn upon to amplify the themes.

The themes to be explored in the following sections are:

- ✧ the existence of comparatively small numbers of competencies that define jobs/qualifications
- ✧ the relationship between recognised and non-recognised competencies
- ✧ types of competencies likely to fall within recognised (or non-recognised) categories
- ✧ assessment practices
- ✧ organisational and other influences on the way in which competence is achieved, assessed and recognised
- ✧ employers' perceived value of training packages
- ✧ impediments to the pursuit of qualifications
- ✧ valued assessment outcomes (other than competence recognition)
- ✧ the relationship between enterprises and registered training organisations
- ✧ the force of enterprise change as a motivator of training, assessment and competence recognition.

Defining competencies

Backdrop

Training packages vary in size from less than 100 to several hundred units of competency. The training packages relevant to this study, with details of their size in terms of number of units of competence, are listed in table 4.

Table 4: Number of units of competency by training package

Training package	Responsible ITAB	Number of units of competency
Entertainment	CREATE	98
Chemical, Hydrocarbons & Oil Refining	MLA	99
Plastics, Rubber & Cablemaking	MLA	131
Manufactured Mineral Products	MLA	71
Museum & Library/Information Services	CREATE	103

Note: CREATE = Cultural Research, Education and Training Enterprise; MLA = Manufacturing Learning Australia.

A further training package (Film and Television) was explored with one organisation (Australian Broadcasting Corporation), but at the time the research was conducted that package had yet to be endorsed.[7] The case study relating to this area has therefore been treated differently from all other case studies, and data from that study excluded from most of the quantitative analysis of competencies in this chapter.

Table 4 suggests that the five training packages listed contribute a combined total of 502 competencies to the national pool of units of competency. In fact, while all or most of these 502 units of competency might have a unique unit code, many will be very similar (if not exact duplicates). For instance, the occupational health and safety competencies in the Manufacturing Learning Australia training packages all derive from the cross-industry guideline standards published by the National Occupational Health and Safety Commission (1994), and so are virtually the same in each training package.

Types of competencies

As part of the methodology of this project, described in detail in chapter 3, the competencies from each of the relevant training packages were segmented into sub-lists of competencies. The two basic types of competencies identified were:

- ✧ 'industry' or 'defining' units of competency
- ✧ 'enabling' or 'employability' units of competency

The proportion of total competencies in each of the training packages listed in table 4 which are capable of being classified into either 'defining' or 'enabling' categories is shown in table 5.

Table 5: Segmentation of training package units of competency into 'defining' and 'enabling' categories

Training package	Number & proportion (%) of 'defining' competencies	Number & proportion (%) of 'enabling' competencies	Total number of competencies in package
Entertainment	90 (91.8)	8 (8.2)	98
Chemical, Hydrocarbons & Oil Refining	80 (80.8)	19 (19.2)	99
Plastics, Rubber & Cablemaking	67 (51.1)	64 (48.9)	131
Manufactured Mineral Products	46 (64.8)	25 (33.2)	71
Museum & Library/Information Services	76 (73.8)	27 (26.2)	103
Total	**359 (71.5)**	**143 (28.5)**	**502**

On average, the proportion of job-defining units of competency in each training package accounts for almost three-quarters of total units of competency, but this varies considerably between packages. The defining units of competency could be further divided into industry or occupational sub-categories or streams (one might term these 'career' options). The number of these also varied between training packages:

Entertainment	15 streams
Plastics, Rubber & Cablemaking	6[8] streams
Manufactured Mineral Products	7 streams
Chemical, Hydrocarbons & Oil Refining	4 streams
Library	9 streams
Museums	6 streams

[7] The Film, TV, Radio and Multimedia Training Package was endorsed in 2001.

[8] The training package PMB 98 (Plastics, Rubber and Cablemaking) actually identifies 15 streams. These were known to be incomplete at the time and this project combined many streams to broaden the coverage. This approach was acceptable to the participating enterprises.

In the process of constructing the lists of competencies used in the case study interviews, it became apparent that many of the enabling/employability-type units of competency drawn from different training packages (even those from the different industry sectors) were very similar. To facilitate the interviews and allow easier comparison between enterprises from different sectors and industries, enabling units from all the relevant training packages were grouped into a single generic list (which the researchers called 'enabling' units). Grouping them together in this manner made the similarities and overlaps more apparent. Thus, from a possible total of 143 'support' or 'enabling' units of competency (see table 5), a much smaller list of 98 distinct units of competency was able to be distilled after obvious duplications were eliminated (or collapsed into a single unit).

The creation of a joint list was validated indirectly by participants in the study. Often they chose 'enabling' units of competency relevant to jobs in their enterprise, but from training packages other than that specifically developed for their industry. Of course, not all of the 'support' or 'enabling' competencies in the list were relevant in all industry sectors.

Narrow bands of defining competencies

A superficial examination of table 5 would suggest that most jobs are able to be constructed almost completely from defining or 'industry' type units of competency. Logic and anecdotal experiences dictate otherwise.

Indeed, a simple, unsophisticated level of analysis suggests that, in general terms, the number of defining, industry-specific competencies is usually much less than the number of enabling competencies. For instance, if we examine the number of 'industry units' in each 'stream' then we can calculate that there is a mean of 8.8[9] units per stream (standard deviation 7.1). Not all of a stream's competencies will be suitable for all jobs, hence the number of defining competencies per job (on average) reduces further from the average of 8.8 units.

A more sophisticated analysis is possible by considering the make-up of the 72 jobs for which details were obtained from employers. As shown in table 6, employers/managers identified a total of 3004 competencies required to perform these 72 jobs (an average of 41.7 competencies per job). Overall, just under one-third (32.4%) of the units of competency identified as being required to perform the designated jobs were defining competencies. On average, then, 13.5 defining competencies were identified per job assessed; however, as few as two competencies could be defining a single job.

Table 6: Type of competency by industry type

Type of competency	Entertainment (%)	Manufacturing (%)	Service (%)	Total (%)
Defining	184 (29.3)	454 (27.5)	335 (46.2)	**973 (32.4)**
Enabling	444 (70.7)	1198 (72.5)	389 (53.7)	**2031 (67.6)**
Total	**628 (100.0)**	**1652 (100.0)**	**724 (100.0)**	**3004 (100.0)**

Table 7: Average number of competencies per job in each industry type

Type of competency	Entertainment (n=10)*	Manufacturing (n=45)	Service (n=17)	Total (n=72)
Defining	18.4	10.0	19.7	**13.5**
Enabling	44.4	26.7	22.9	**28.2**
Total	**62.8**	**36.7**	**42.6**	**41.7**

Note: *n = number of jobs described.

[9] If we exclude the Chemical, Hydrocarbons and Oil Refining Training Package from this analysis then the mean becomes 7.5 (SD 5.5). Chemical, Hydrocarbons and Oil Refining Training package is organised on a slightly different basis. However, it is believed that the same general conclusions still apply.

The ratio of defining to enabling competencies identified to perform jobs varied between enterprise types when classified on the basis of industry type. Service industry type enterprise employers (libraries, museums) identified a significantly higher proportion ($\chi^2 = 91.1$, df = 2, $p<0.01$) of defining competencies in their jobs.

While this project was not established to examine the issue of different categories of competency, the use of the specially designed competency lists did validate the categorisation of units of competency into defining and generic units of competency. It is somewhat surprising that within a training package of over a hundred units of competency, for any one job there are often only a handful of units of competency which distinguish that job from many others in the same (or even another) industry. In some cases the difference between two jobs that the industry may perceive as quite different can be distilled down to one unit of competency. For example in one of the manufactured mineral products organisations studied, the difference in competency between a 'fettler' and a 'greaser' was reduced to one competency with the former requiring the competency 'undertake track maintenance activities' and the latter 'apply grease and oil to machinery'.

Generalising this finding too broadly would be unwise; however, it would appear that two tentative hypotheses are possible:

- ✧ There exists a set of *enabling* or support competencies which are largely generic across a number (if not all) industries. This supports the thinking underpinning the development of cross-industry generic guideline standards. The logical conclusion to this form of thinking is the system of a single database or bank of generic units of competency such as that pertaining in New Zealand (see Varanasi 1999).
- ✧ There are relatively few units of competency which distinguish one job from another. One would expect the emphasis in recognition to be on those 'defining' units of competence.

Another interesting issue raised by the figures in table 7 concerns the number of competencies identified by enterprises as required to perform jobs. The jobs selected by enterprise managers for review ranged from AQF level II to level V, although most of the selected jobs would nominally fall within the AQF III level. The 'average' job (taking into account all Australian Qualifications Framework levels and industry types) was deemed to require nearly 42 competencies for appropriate performance, which varied between 37 and 63 for the manufacturing and entertainment industries, respectively. These competency requirements need to be compared with the crude qualification requirements for certificate III courses in each of the industries covered by this study (see table 8).

Table 8: Number of competencies required for certificate III qualifications in each of the training packages covered in this study

Training package	No. of competencies required for cert III qualification	Average no. of competencies in each job reviewed
Entertainment	17[10]	62.8
Plastics, Rubber & Cablemaking	21	36.7
Manufactured Mineral Products	21	36.7
Chemical, Hydrocarbons & Oil Refining	21	36.7
Museum & Library/Information Services	20	42.6

The discrepancy between the number of competencies required to package a qualification, and that deemed by employers to be necessary to perform jobs, is stark. Of course such a comparison is not very refined. It does not take into account the types of competencies that might be required for the qualification, the crudeness of the 'average' competencies figure, and the possibility that employers

[10] These crude statistics can be misleading as some packages (for example, MLA training packages) state the total number of units required, whereas others treat competencies as cumulative, simply stating the additional number required for a certificate III above a certificate II.

(given an open list of competencies from which to choose) were not entirely discriminating in their selection process. However, the figures still give cause for consideration. Do they imply that vocational qualifications only account for a proportion of the competence needed to perform jobs appropriately (a situation that has long been recognised as the case for higher education qualifications)? Are employer expectations for competence totally out of kilter with what can reasonably be expected of workers? Can competence be neatly divided into that which needs to be recognised and that which is simply otherwise valued by employers?

Some of these questions are addressed in the following sections of this chapter.

Recognition and non-recognition of competence

In chapter 2 a model for categorising a unit of competence required to perform a job was proposed based on reference to industry competency standards, and employers' perception of the level of assessment perceived to be necessary for that unit of competency. It was noted that the perspective on the position of units of competency within such a model would vary between employers, workers and possibly unions (amongst other possible stakeholders).

Data from the case study interviews suggested 'level of assessment' was the key factor employers use to discriminate between competencies required for jobs in their workplace. A revised classification model would consist of four classes of competency, with the definitions of each class as follows:

A Recognised competencies: formally assessed competencies based on endorsed industry standards

These are competencies that are recognised for a formal qualification. The term 'qualification' here is used loosely to include various forms of widely acknowledged certification of competency conferred by such bodies as universities and relevant authorities (for example, WorkCover authorities and licensing boards) as well as VET qualifications. Thus, for the purposes of this research, a forklift operation ticket would be considered a 'qualification'. So too would a diploma conferred by the Australian Library and Information Association (ALIA) outside, or prior to, the endorsement of relevant competency standards.

B Formally assessed competencies: based on enterprise standards

Assessed competencies are those that have been assessed in a structured manner against a standard, other than the endorsed industry competency standards. The relevant standard could be workplace standard operating procedures, enterprise competency standards etc.

C Informally assessed competencies

These are competencies assessed through subjective judgement. The assessment generally does not involve a structured process and will not be referenced to an objective (observable) standard. This does not preclude the assessor having a mental 'schema' against which assessment is made, which may act as a de facto set of standards. Experienced workers in 'buddy training' relationships will commonly be called upon to make an informal assessment opinion of the 'buddy'.

D Not assessed competencies

Includes all other competencies. Competencies may not be assessed (that is, an employer chooses not to assess) for a variety of reasons which are difficult to disentangle. These may include competencies:

- ✧ from industry standards, not deemed important enough to assess
- ✧ that are important to performance of emerging, 'state-of-the-art' practice, and as such have yet to be defined fully and standards of performance established
- ✧ that are difficult, uneconomic or impossible to assess in the workplace. This would include competence 'fragments'—competencies required for particular jobs that consist of only one or two elements of a larger unit of competency from endorsed industry standards.
- ✧ that may be required, but are not covered or defined by any existing competency in a training package or elsewhere in the Australian vocational system. These may include social, attitudinal or other non-defined 'technical' competencies.

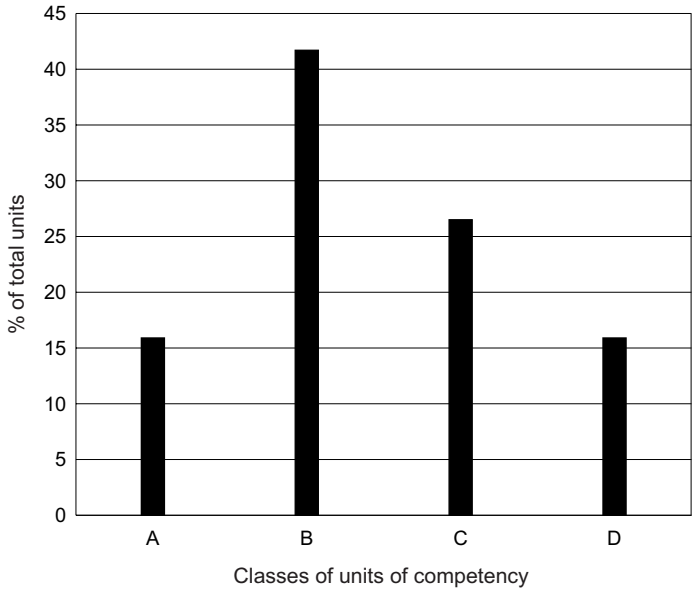
These classes represent a continuum of assessment effort, from very formal, structured processes involving an institutional third-party presence (for example, a registered training organisation) through to little or no assessment other than a broad intuition or feeling being pursued. A case could be made for more classes to be created along this continuum, especially for inclusion of an additional class between 'B' and 'C'. However, interview subjects were able to quickly grasp this four-class classification system. And, when asked to review each of the units of competence they had identified as being relevant to the jobs they had chosen and indicate into what class they perceived each unit belonged, they provided what seemed cogent responses.

When competencies identified for all 72 jobs were analysed according to the above four-class classification system the results in figure 3 were obtained.

For the enterprises included in this study, assessment of competence in general is clearly important, with 57.7% of all identified units of competency perceived as requiring formal and structured assessment (class 'A' and 'B' in figure 3). Only a small proportion of those identified units of competency (16%), however, were judged by employers to require formal recognition (that is class 'A' alone).

The comparison between defining and enabling competencies in terms of degree of assessment classification is detailed in table 9.

Figure 3: Proportion (%) of units of competency in each of the four classification categories



Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

Table 9: Number of competencies by degree of assessment categories and 'defining' or 'enabling' type competencies

Type of competency	Degree of assessment (% of row total)				
	A	B	C	D	Total
Defining	184 (18.9)	423 (43.5)	207 (21.3)	159 (16.3)	**973 (100.0)**
Enabling	296 (14.6)	828 (40.7)	589 (29.0)	318 (15.7)	**2031 (100.0)**
Total	**480 (15.9)**	**1251 (41.7)**	**796 (26.5)**	**477 (15.9)**	**3004 (100.0)**

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

The differences between the two classes of competency are slight but significant ($\chi^2 = 16.2$, $df = 3$, $p<0.01$). The results suggest that employers place greater assessment demand on those competencies that are supposedly most crucial to the 'production' processes (that is, those processes which directly produce the enterprises goods or services) of the enterprise—the defining competencies. The results in table 9 also lend some support to often expressed views by employers that so-called 'soft' skills are as equally critical to business success as the 'technical' skills (see Ridoutt & Willett 1994; Research Forum 2000).

This relationship between the way defining and enabling competencies are treated remains even when industry differences are taken into account (see table 10). Thus, even though the proportion of competencies falling into different classes of assessment varies considerably between industry sectors—for instance from virtually no formal assessment in the entertainment industry to over 75% of competencies formally assessed in the service industries—the relationship between types of competencies (within industry sectors) remains remarkably constant.

Table 10: Proportion of competencies by degree of assessment categories, type of competence (defining, enabling) and industry sector

Industry sector (n=jobs)	Defining competencies				Enabling competencies			
	Degree of assessment (figures represent proportion)				Degree of assessment (figures represent proportion)			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Entertainment (10)	0.01	0.00	0.70	0.29	0.04	0.00	0.67	0.30
Manufacturing (45)	0.16	0.64	0.20	0.01	0.12	0.62	0.23	0.03
Service (17)	0.25	0.51	0.00	0.24	0.14	0.56	0.00	0.30

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

However, a question raised by table 10 concerns the significant departure of the entertainment industry sector from the other two sectors. Comparatively, there is little or no perceived need by entertainment industry employers for any formal assessment of competence for the jobs chosen, most of which were equivalent to AQF III or IV qualification levels.

Recognised competencies

Only a small proportion of the total competencies identified were perceived by employers as needing to be formally recognised (15.9%). As shown in the above sections, there is a small but significantly higher proportion of 'defining' competencies than 'enabling' competencies that need recognition.

A listing of the main groups of competencies that required recognition can be seen in table 11.

Table 11: Competencies that required recognition

Competency group	No. of jobs that required formal recognition (%, n = 72)	
Tickets, licences etc. conferred by non-training bodies	32	(44.4)
Training and assessment related	12	(16.7)
Occupational health and safety	21	(29.2)
Part of a tertiary qualification	10	(13.9)
Other (job-specific, site-specific, communication—some companies require recognition for all the competencies required)	9	(12.5)

All enterprises that required their employees to gain a licence or 'ticket' to perform part or the whole of the job followed the requirements set out for that legal compliance. This usually involved some form of external training, and external assessment and is now more often than not based on

competency outcomes. Examples quoted for this category included: forklift driver's licence, rigging and scaffolding tickets and restricted electrical licence.

Non-recognisable competencies

Interview subjects were asked to nominate competencies, other than those provided to them in the competency lists, that they believed were important to the performance of chosen jobs. Only a small number of additional competencies were offered as follows:

- ✧ Business awareness
- ✧ Understanding the production budget
- ✧ Apply an artistic sense
- ✧ Empty the pit
- ✧ Monitor how everyone and everything else is going
- ✧ Advocacy
- ✧ Bridging the corporate goals and your area of responsibility
- ✧ Security of building
- ✧ Problem-solving
- ✧ Plan and organise rehabilitation for individuals.

Some of the competencies nominated (example 'Empty the pit') are not really substantial enough to make a national competency. Others (example 'Monitor how everyone and everything else is going') are arguably competency fragments which do not make up an entire national unit of competency or are encompassed by an existing unit of competency. Most could be accommodated by importing from another training package (example 'Plan and organise rehabilitation for individuals'), or emphasising, where appropriate, the development of key competencies (example 'Problem-solving'). Alternatively, customising existing units for enterprise-specific purposes would accommodate most of the enterprise needs.

No evidence was obtained, at least for the study population of case-study enterprises, that there exists a significant body of competencies outside training packages that employers value.

Assessment practices

It is misleading to think of enterprises in dichotomous categories of assessment effort. The case studies revealed that there are few enterprises that fit neatly into discrete categories of 'assessing' or 'non-assessing' effort. Rather, assessment effort should be viewed as a continuous variable, where enterprises can be placed along a continuum of assessment effort (from no effort, to assessment for competence recognition). It is also important to understand that this variation occurs equally within enterprises; that is, assessment effort varies from section to section and from job to job within an enterprise.

All of the enterprises included in this study had some form of assessment in place for the jobs considered by interview subjects (although not, as described in earlier sections, for all competencies). Over half (13) of the case-study enterprises had largely formalised assessment processes. The other ten enterprises were mainly relying on informal systems.

In this context, formalised assessment was defined by written procedures, record-keeping processes and accountabilities of the parties involved in the assessment process, which are agreed upon and written down. Nine of the 13 enterprises assessing formally mentioned they had qualified workplace assessors available in-house, while another enterprise had links to external assessors via a partnering

arrangement with a registered training organisation. Six of the enterprises with qualified in-house workplace assessment resources also had registered training organisation assessment auspicing arrangements.

Informal systems were characterised by *ad hoc* processes and limited accountability. Some form of recording might be included, but the documentation is likely to be minimal and involve simply recording the judgement (rather than the assessment process or evidence of competence).

One case-study company (a small chemical manufacturer) with typical informal assessment processes is illustrative. They currently conduct nearly all of their training using the 'buddy' method, where a new or inexperienced worker is partnered with an experienced, 'competent' worker for a length of time. Training by this method is structured only by referring the mentor or 'competent' worker within the buddy relationship to the relevant standard operating procedures. Training (and assessment) move through five stages as follows:

Stage 1: packing and labelling packaged (in bottles for instance) goods

Stage 2: packaging non-dangerous goods

Stage 3: packaging dangerous goods

Stage 4: mixing, making and packaging powder products

Stage 5: mixing and making liquid products.

Progress from one stage to the next (which in the enterprise's remuneration system equates to a promotion) is largely based on the intuition of the mentor. Thus, after an acceptable lapse of time, the supervisor asks the mentor if the 'trainee' is ready to move on, and if the answer is 'yes' then mastery of the current task is assumed complete. While competence at stage 5 can entail high levels of safety, commercial (the cost of loss through irreversible mixing mistakes for instance), and environmental risk, the requirement for formality of assessment effort does not increase. One can only assume the 'competent' worker takes these factors into account when making a judgement, retaining the inexperienced worker in a learning situation until all doubt evaporates.

In other case-study enterprises the supervisor was found to be making a judgement on a worker's ability to perform in the job.

Effect of enterprise type

Possible enterprise factors

It is conceivable that the 'culture' of an organisation has a large influence on the organisation's approach to assessment, and the desired outcomes, including qualifications, from assessment effort.

Organisation culture is a nebulous concept. Many attempts to define organisation culture, at least in respect to the effect on training/learning, have not proven very fruitful. The case studies in this research revealed several enterprises that clearly had 'cultures' conducive to training, and in some cases, to the pursuit of qualifications. Seeking common attributes and characteristics of these enterprises was not, at least qualitatively, an easy task.

In an attempt to gain some insight into significant enterprise characteristics, the organisations involved in this study have been broadly categorised on a number of characteristics:

- ✧ technology: does the means of production or service delivery use high or low technology?
- ✧ history of formal qualifications: does the enterprise have a history of training or hiring people with qualifications?
- ✧ type of organisation: public or private sector?

- ✧ size: large or small, based on number of persons employed (>199 employees = large)?
- ✧ ownership: locally (that is, Australian) owned or owned by an overseas company?

The influence of these enterprise characteristics on the types of competencies valued, and the level of assessment effort, is explored in the next two sections.

Enterprise factor influence on type of competence

First it is important to explore the influence, if any, of these enterprise factors on the types of competencies selected by employers as comprising jobs. Table 12 considers the characteristic of level of technology. The data show that high-technology enterprises describe jobs with a significantly higher proportion ($p<0.01$, $\chi^2 = 10.14$, df = 1) of defining competencies.

Table 12: Type of competency by level of technology

Type of competency	High		Low	
Defining	682	(33.9)	291	(29.3)
Enabling	1328	(66.1)	703	(70.7)
Total	**2010**	**(100.0)**	**994**	**(100.0)**

Tables 13 to 15 show that public-sector organisations, locally owned and smaller enterprises also have significantly higher proportions of defining competencies in the description of the jobs of those types of enterprises.

Table 13: Type of competency by public/private sector

Type of competency	Public		Private	
Defining	458	(37.1)	515	(29.1)
Enabling	776	(62.9)	1255	(70.9)
Total	**1234**	**(100.0)**	**1770**	**(100.0)**

Note: ($p<0.01$, $\chi^2 = 19.2$, df = 1)

Table 14: Type of competency by size of organisation

Type of competency	Large		Small	
Defining	501	(29.7)	472	(35.8)
Enabling	1183	(70.3)	848	(64.2)
Total	**1684**	**(100.0)**	**1320**	**(100.0)**

Note: ($p<0.01$, $\chi^2 = 12.1$, df = 1)

Table 15: Type of competency by ownership

Type of competency	Local		Foreign	
Defining	713	(34.9)	260	(27.0)
Enabling	1328	(65.1)	703	(73.0)
Total	**2041**	**(100.0)**	**963**	**(100.0)**

Note: ($p<0.01$, $\chi^2 = 18.79$, df = 1)

Where an organisation has a history of recognising competencies/qualifications (for instance, libraries), there seems to be an even higher proportion ($p<0.01$, $\chi^2 = 82.9$, df =1) of defining competencies in the jobs in those organisations (see table 16).

Table 16: Type of competency by history of recognition

Type of competency	Has a history (%)	No history (%)
Defining	335 (46.3)	638 (30.0)
Enabling	389 (53.7)	1642 (70.0)
Total	**724 (100.0)**	**2280 (100.0)**

Enterprise factor influence on competence assessment

As discussed in an earlier section, the level of assessment judged to be required by employers is different for defining and enabling competencies (see table 17). As will be shown in tables 17 to 20 in this section, the relationship between defining and enabling competencies remains constant within enterprise groups formed on the basis of particular enterprise characteristics.

Similarly, several enterprise factors have an influence on the level of assessment of competencies chosen by employers. For instance, the level of technology used by an employer to create products or supply services (high or low) affects the proportion of competencies formally assessed (approximately 64.6% of defining competencies in organisations with high levels of technology and 57% in low-technology enterprises). This difference is significantly different at $p<0.01$.

Table 17: Proportion of defining and enabling competencies by level of assessment and technology level

Technology level employed by the enterprise	Defining competencies				Enabling competencies			
	Level of assessment (see codes below)				Level of assessment (see codes below)			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
High (15)	16.7	47.9	30.4	5.0	13.3	37.0	42.5	7.0
Low (7)	24.1	32.9	0.0	42.9	5.9	40.8	29.0	15.7

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other; Bracket number is enterprises

As was expected, organisations which have a history of qualifications, have a higher proportion of total (defining and enabling) competencies recognised (61.5% for enterprises with history of qualifications, 21.5% for those without).

Table 18: Proportion of defining and enabling competencies by level of assessment and history of qualifications

History of qualifications	Level of recognition							
	Defining competencies				Enabling competencies			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Yes, there is a history (4)	37.3	33.4	0.0	29.0	24.2	22.4	0.0	53.5
No, no history (19)	9.2	48.8	32.5	9.5	12.3	45.1	35.9	6.7

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other; Bracket number is enterprises

Within the case study population of enterprises, if the enterprise is a private sector organisation, large, and foreign-owned, then there is a likelihood that the enterprise will be formally assessing a high level of defining competencies (>70% of total competencies). This is shown in tables 19 to 21. The pattern for assessing enabling competencies is also shown to be higher for private sector, foreign-owned organisations. However, size has an inverse effect, with small organisations assessing the highest proportion of these competencies.

Table 19: Proportion of defining and enabling competencies by level of assessment and type of organisation

Type of organisation (n)	Defining competencies (%)				Enabling competencies (%)			
	Level of assessment (see codes below)				Level of assessment (see codes below)			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Private (17)	11.5	60.4	16.3	11.8	14.2	59.0	18.0	8.8
Public (5)	27.3	24.5	26.9	21.4	15.2	11.2	46.8	26.8

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

Table 20: Proportion of defining and enabling competencies by level of assessment and ownership

Ownership (n)	Defining competencies (%)				Enabling competencies (%)			
	Level of assessment (see codes below)				Level of assessment (see codes below)			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Local (14)	9.2	81.5	9.2	0.0	15.6	69.4	12.9	1.9
Foreign (8)	22.4	29.6	25.7	22.3	14.0	25.6	37.5	22.9

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

Table 21: Proportion of defining and enabling competencies by level of assessment and size of organisation

Ownership (n)	Defining competencies (%)				Enabling competencies (%)			
	Level of assessment (see codes below)				Level of assessment (see codes below)			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Large (>199 employees)	24.0	47.8	44.3	7.9	12.8	34.2	43.3	9.7
Small (<200 employees)	18.4	48.7	5.9	26.9	17.1	49.9	9.1	23.9

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

Why do these enterprise characteristics appear to influence the propensity to conduct formal assessment of competence? In some ways the results are counter-intuitive. However, consideration of one particular case study might at least allow scope for supposing why these factors may be linked.

This case-study enterprise, in the past a small, locally owned, private sector enterprise, had little need for formal assessment of its small number of workers. However, after being acquired by a foreign owner, and becoming part of a larger nationally distributed organisation, the need for formal, structured assessment was being re-appraised. This was because the desire for uniformity and standards of competence across the expanded workforce could be controlled best through a more structured assessment approach. If this argument is followed through, then the lower emphasis in public-sector organisations on formal assessment of competence, a surprising finding, could be explained by the fact that uniformity and standards in such organisations are better enforced through well-developed and followed policies and procedures.

Relationship between training and assessment

It is generally assumed that training and assessment effort is correlated. That is, an enterprise adopting a formal, structured approach to training, for instance, will be expected to follow the same approach to assessment (possibly resulting in recognition of competence). To test this assumption, each of the case-study enterprises was categorised on the basis of their training approach. Three broad classes were applied:

- ✧ unstructured: training occurs but with little or no structure or formality
- ✧ structured: training occurs in an organised way, but not related to any formal assessment system or qualification

- ✧ formal: training follows some formal curriculum/training package and leads to a formal qualification based on assessment.

Eight enterprises were involved in 'formal' training for their workers. They were doing so either by sending their workers to an external provider (registered training organisation, typically TAFE), or conducting structured on-the-job training programs in partnership with an external registered training organisation. In all cases the internal training efforts of these organisations were significant. In the case of the on-the-job training arrangements, the concerned enterprises have formed dynamic partnership arrangements, whereby the organisation plays a significant role in the training while the registered training organisation basically provides specialist services and a quality audit role.

A further five case-study enterprises were following a 'structured' approach to training. Of the 13 enterprises adopting a training approach which was categorised as either 'formal' or 'structured', ten of these are large organisations. That is, most of the large organisations were using structured or formal training for their workers (83% of large organisations). Similarly, five of the six public-sector organisations had taken a formal or structured approach to training. Thus, organisations that tend to have formal structures and formal procedures (large and/or bureaucratic organisations) are more likely to also have structured (including formal) training. This is hardly surprising.

What is surprising, however, is that the seemingly strong relationship between structure and formality of an organisation 'culture' and the approach to training extends only tenuously to the approach to assessment of competence. As can be seen from table 22, the expected pattern holds for enterprises where a formal training approach has been adopted—over 80% of competencies are formally assessed with over half of those recognised. However, the expected pattern is not apparent for those enterprises adopting a structured training approach. Indeed, enterprises with no structure in their training are just as likely (if not more likely) to assess their workers' competence using formal, structured assessment approaches.

Table 22: Proportion of defining and enabling competencies by level of assessment undertaken and type of training

Type of training (n)	Defining competencies				Enabling competencies			
	Level of assessment (see codes below)				Level of assessment (see codes below)			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
Unstructured (9)	0.04	0.63	0.22	0.10	0.09	0.59	0.21	0.10
Structured (5)	0.05	0.50	0.45	0.00	0.05	0.44	0.49	0.02
Formal (8)	0.44	0.37	0.00	0.20	0.22	0.48	0.02	0.28

Note: A = Recognised; B = Assessed; C = Informally assessed; D = Other

Why this should be so is not clear. Based on the assumed correlation between training and assessment raised above, one would have expected a clear linear relationship in table 21, with unstructured training related directly with the least structured assessment approach.

One explanation can be developed from a consideration of one of the case-study enterprises—a concrete products manufacturer. This enterprise had committed to structured training (based on the relevant competency standards) on the rationale that it was a more efficient way to use their supervisor/trainer resources. In relation to assessment, however, there was no compelling argument for a commitment to structure or formality. On the contrary, the types of products made in this enterprise had comparatively high tolerance levels, meaning the products could be manufactured slightly off specification yet still be acceptable to their customers. Under these conditions, the enterprise could afford to simply observe the 'training outcomes' in terms of finished product, and thus informally assess competence. In another setting (for instance a cement manufacturer), the tolerances on departure from product specifications may be very low, or the cost of poor-quality product very high, in which case the need for structured assessment will be pressing.

Another possible explanation is that, since most of the enterprises with unstructured training approaches were smaller enterprises from the manufacturing industry sector, there is a minimum level or number of competencies that need structured assessment, regardless of how those competencies are attained.

Use (or non-use) of training packages

Of the 23 enterprises, nine claimed they were using, or about to use, a relevant training package to support delivery of enterprise-based training. A further company was accessing formal off-the-job training for its workers, the end result of which was to be qualifications (against a relevant training package[11]).

This is a high proportion (just over 40%[12]) of enterprises claiming to employ the support of a training package for their training effort. The case study population is clearly atypical in its adoption of training packages. When compared with the findings of another study conducted by the authors of this report[13] (31% of enterprises), which were also deemed to be above average adopters of VET practice, the case study sample enterprises are more innovative again. This increase may in part be due to the increasing number of training packages available.

Nevertheless, since each of the 22 eligible enterprises selected for the case studies had purchased a relevant training package, it begs the question as to why over half the case-study enterprises were not using a training package.

The literature would suggest that non-adoption of training packages (insofar as it would result generally in an increased amount and type of training effort) is a rational decision made by enterprises based on an assessment of the costs and benefits. Indeed, while there is a voluminous literature on the supposed need for and inherent value of training, very few studies have been able to agree on or quantify the benefits of training at the enterprise level, particularly in comparison to the more than obvious costs (Long et al. 2000).

The interrogation of case-study enterprise managers on this issue suggests less sophisticated impediments to the adoption of training packages. Perhaps the simplest reason for not using a training package is ignorance about the content and purposes of training packages. Most of the case-study enterprise managers confessed that the training packages were purchased with a totally different understanding of a training package in mind. They generally found the training package they received to be daunting documents, a prime reason why Manufacturing Learning Australia had developed a 'starter kit' for at least one of the relevant training packages, and is currently having starter kits developed for its other training packages.

It is possible that the pattern of adoption of training packages is beginning to change slowly. Several of the enterprises not using training packages appeared to be on the brink of doing so, or are likely to be tipped into adopting behaviour by a gradually expanding awareness/knowledge base and an appropriate change in circumstances in their workplace (in favour of adoption). Happily, the main impediments to the greater use of training packages seem to be assailable through smart marketing, appropriate support resources and conducive workplaces (about which more will be raised later).

Of equal, perhaps even more interest than reviewing the behaviour of those enterprises not adopting training packages, is an exploration of why enterprises are using (or are intending to use) training packages. The answers seem to fall into the following categories:

- ✧ to qualify their workers

[11] While the qualification was based on a training package, the company itself did was unaware that it was 'using' a training package.

[12] Remember that one of the 23 case-study enterprises did not have an endorsed training package available to access.

[13] The study titled *Factors that influence the implementation of training and learning in the workplace*, was also funded by NCVER. It involved an intensive mail questionnaire survey of over 250 enterprises (Ridoutt et al. 2002).

- to train their workers
- to structure their workforce
- they are obliged to.

These are further explored below.

To qualify workers

For the majority of enterprises in this study using training packages, a qualification for their worker is regarded as a by-product (not unwelcome, but not particularly sought) of a process of skills upgrade for the worker. This attitude in part reflects several thought processes articulated in interviews by enterprise managers:

- When recruiting, manufacturing industry managers, in particular, view qualifications as considerably less important selection criteria than the nature and breadth of (relevant) work experience gathered, and where (what enterprise/s) the experience was accumulated.
- The attainment of a qualification could lead to a wage claim, without necessarily providing enhanced value to the enterprise.
- Often the competencies required to perform jobs competently are less than is required to compile a qualification, especially if only defining competencies are considered crucial.[14]
- In some industries, the attainment of a qualification could enhance the worker's perceived (or real) prospects of being successful in the job market (for instance gaining a better paid job).

Two of the enterprises embracing the training package approach were the exception to the above, in that they actively pursued qualifications for their workers. These two manufacturing companies declared that their interest and involvement in formalised qualifications was driven by concern for employee morale. Both opined that the direct impact of the added skills or competence from completing a training program in order to obtain a qualification was 'expected to be low'. The benefits to the organisation would therefore not stem from the marginal increase in worker competence (in progressing from only the competence immediately required to perform a specific job to fulfilling qualification requirements), but rather the impact on the worker of the additional recognition and status of the qualification. They believed that productivity, quality and safety would improve, not directly from the knowledge or skills gained, but from the improved wellbeing of the employees gaining the qualification.

To train workers

Training of workers has historically varied between enterprises, depending on the traditions and culture of the industry sector, and even the individual enterprise. Some of the more important determinants of variation (for example, workplace change, technology, quality management, organisation size) are canvassed in Hayton et al. (1996).

Enterprises are beginning to recognise the benefits of structuring their training around a training package. It would be accurate to say that a decade ago nearly all of the case-study enterprises, the exceptions being the libraries and one of the public-sector organisations, had comparatively unstructured, informal 'buddy' type training processes. In the intervening years, these enterprises generally have added structure to their training effort, first through simple documentation of the job (job descriptions/specifications) and processes (standard operating procedures), and subsequently through increasingly sophisticated articulation of the skill requirements (from simple skill lists to enterprise competency statements). Several of the case-study enterprises have now adopted the training package as a tool to structure their training. Others are considering this same path.

One case-study enterprise for instance, a manufacturer in the non-metallic minerals sector, had, as a means of improving training, been gradually progressing from totally unstructured 'buddy' training

[14] This view is not supported by the evidence gathered by this research and discussed previously in this chapter.

to the use of internal 'standards' in the form of work instructions. The enterprise had moved to adopt national competency standards as the basis of training since the internally drafted standards 'were not delivering what they needed' in terms of training outcomes. As more resources structured around their relevant training packages become available, this enterprise believes it will reap the rewards of the investment in change.

Those enterprises using a training package as a training structure identified several advantages:

- ✧ The skill requirements are already defined.
- ✧ Government subsidy is available in some cases.
- ✧ It links the training to an industrial relations structure.

This last point seems to be the more persuasive advantage cited for using a training package to structure training. Uniformity of training, and portability of qualifications, are generally seen by enterprises as being of lower importance, particularly in those enterprises with stable workforces. Being able to link training directly to remuneration is a compelling reason for using a training package structure. This of course presupposes that the connection between the competency standards structure of the pertinent training package and the relevant industrial award/agreement is robust. The Metals and Engineering Training Package provides an obvious example of competency standards closely linked to an industry award. Several companies in the case study sample were party to the Metals award.

To structure the workforce

When using a training package as a basis for the workforce structure, qualifications *per se* assume relatively less importance, although the qualifications framework is still used to guide the assembly of competency-based job descriptions and define 'levels' of competency. For many enterprises with stable workforces, the key issue arising from this competency-based job description is not one of training, but rather one of assessing in order to fit existing workers into the structure on some rational basis. This may lead to a skills audit and so gap training. It may also lead to up-skilling of the workforce, for instance as part of a drive for increased efficiency.

One of the plastics, rubber and cablemaking sector case-study enterprises serves as an example. They had advanced competency-based remuneration systems for several years, a desire with which the union had been entirely complicit through a number of enterprise agreements. However, the enterprise had slowly come to realise that basing the remuneration on internally constructed competency 'standards' had resulted in serious anomalies between worker categories, with some workers being rewarded at levels higher than their true value to the company (and vice versa). This enterprise was scrutinising the relevant training package carefully as a potential means of better aligning competence development (and assessment) with real work value levels. Moreover, the national acceptance of training packages could provide a way around likely union objections to change (that might stem from a need to protect some workers' existing fortunate situation).

Of course, all of the above discussion is predicated on the existence of a strong nexus between the relevant industrial relations and training package structures. This is not always the case. The strength of the relationship between the training packages relevant to the case-study enterprises in this research and their respective industrial relations awards/agreements varies. While the relationship in all cases is implicitly acceptable, case-study enterprises in a number of instances pointed out potentially crucial problems.

One such problem, while not fatal (indeed the enterprise had fully adopted the training package), concerned a large case-study enterprise manufacturing plastic components as part of their broader business. This company was inclined to employ the Plastics, Rubber and Cablemaking (PRC) Training Package to drive its training effort and to define qualification outcomes. However, at the certificate III operator level, the enterprise believes a worker requires 27 units from the current package to be fully functional in their workplace. However, the qualifications framework specifies a

need for only 21 units of competency (if selected appropriately) to obtain a certificate III qualification. What to do with the 'excess' six units of competence? The worker/union would be reluctant to attain these competencies without some reward (either a formal qualification or increased remuneration, or both). On the other hand, the enterprise is certainly not interested in paying almost certificate IV level pay for what they believe is a person competent only at certificate III level. In essence, the enterprise resolved the dilemma by directing training effort using the Plastics, Rubber and Cablemaking Training Package, but remunerating competence levels according to the Metals award. It is conceivable that enterprises will in future, if the opportunity presents itself, assess training packages as alternatives based on what benefits they can bring to the enterprise. Thus, a 'market' for training packages could be created.[15]

They are obliged

At least one case-study enterprise was adopting a training package-based workplace structure which would, in turn, lead to training package-based assessment of workers—not because they had perceived any need themselves to do so, but because their parent organisation had decreed that it would be so. This parent organisation was, in turn, responding to external (perceived or actual) pressure to adopt a training package-based workforce structure.

The case-study enterprise did not seem to object to this approach. On the contrary, it had perceived some benefit as it had forced an analysis and clarification of jobs. While this was an effective mechanism to increase the use of a training package, it is probably not an effective pathway for attaining widespread increase in the adoption of training packages.

Impediments to pursuing qualifications

In the previous section it was noted that most of the enterprises implementing a training package program are only marginally interested in qualification outcomes. Other enterprises, as discussed in earlier sections, while often committed to assessment effort for a significant proportion of competencies, nevertheless have limited interest in assessment for recognition purposes. Therefore, each case-study enterprise was asked about the factors that would prevent it from pursuing workplace-based vocational qualifications (those described by training packages).

It is generally assumed by those 'on the inside' of the training system that the benefits of qualifications are widely understood. Much of the benefit that the VET system perceives in qualifications is underpinned by adopting a strategic, long-term (and possibly nationalistic) view. Employers in the case-study enterprises take a different perspective. They are heavily focused on the 'now' issues of production, quality and deadlines, in an increasingly cost- and time-pressured environment. In some cases it was found that enterprises had sophisticated training, assessment and recognition systems but were not aware of being able, or not willing, to move to national qualifications. In most cases, qualifications were simply superfluous to their needs. Some of the nuances of enterprise opinion on qualifications are covered below.

First, five case-study enterprises (two from the entertainment industry and three from manufacturing) can be combined on this issue into a single group. All had their own in-house structured training system, but were in the process of moving towards a competency-based approach, with the standards in the relevant training package being adopted or actively considered.

[15] This is an interesting peripheral finding of this research that possibly deserves more investigative attention. Several of the case-study enterprises can feasibly choose between a number of training packages. For instance, as noted in the case study example, most plastics manufacturers can choose between the Plastics, Rubber and Cablemaking or Manufacturing, Engineering and Related Services (MERS) Packages, and some can also include the Vehicle Industry Package. Similarly, many library enterprises are in a position to choose between the Libraries and Museums and Local Government Training Packages. Employers might be tempted to adopt a training package seemingly unrelated to the award to which they respond. In this way, they can potentially optimise both the training effort and the human resources cost implications.

Nevertheless, these enterprises were not intending to proceed all the way to qualifications. The reasons for moving to competencies from the training packages focused on the uniformity and structure offered by this approach (see above section), but qualifications by and large were perceived to be of no benefit.

A second group of nine enterprises (all manufacturing except for one service organisation) had internal training systems, based on their own definition of skill needs. None of these enterprises offered externally recognised qualifications. In most cases the training systems were structured and met the needs of the enterprise. Impediments to moving to training package-based qualifications were varied in this group. Three stated it was inappropriate or saw no gain in changing, three baulked at the cost or complexity of change, and the last three had no real impediments to change (but would require an incentive to make the effort).

There was a final group of four case-study enterprises, none of which had any structured workplace training. However, this special group (mostly libraries) mentioned before, were content to accept externally gained and bestowed qualifications in lieu of providing training themselves. Qualifications in these enterprises were generally required pre-employment, but for those employed before qualifications became *de rigueur*, encouragement was offered to attend relevant off-the-job TAFE courses part-time, or be restricted to limited career options. Paradoxically, given the strong value these enterprises placed on the possession of qualifications, these same enterprises saw little point in workplace-based training or workplace assessment for qualifications. On-the-job training was found to be largely *ad hoc*, very specific to enterprise circumstances, and assessed at best informally. The chief objection from these enterprises to workplace training in keeping with training packages principles appears to be ascribing credibility to on-the-job training and competence recognition *vis à vis* the traditional external course pathways to competence. When the credibility of workplace training is accepted, as in one of the case-study libraries, cost issues, exacerbated by falling staffing levels, intervene to make practical implementation difficult.

Assessment outcomes (other than qualifications)

It was noted in a previous section (see figure 3) that a high proportion of competencies identified as required to perform the selected jobs need, in the view of employers, to be assessed (86%). Interestingly, however, while most competencies are seen to require assessment, including at a sufficiently formal level to require evidence and documentation (58%), only a small proportion of competencies are perceived by employers as requiring recognition.

A significant proportion (over 90%) of the total competencies designated as requiring recognition are accounted for by approximately one-third (eight) of the case-study enterprises, all of whom claimed vocational qualifications were a condition of employment for their workers. Three of these enterprises (large service organisations) used externally gained qualifications as a pre-employment requisite (these were pre-training package diploma qualifications). These enterprises indicated between 50% and 70% of required competencies were obtained pre-employment (through the qualification). Employers accepted that pre-employment qualified workers needed to broaden and enhance their competence once on the job, but they were less likely to see benefit to recognising such workplace-based learning.

The remaining enterprises clearly perceive qualifications as only one of many reasons to carry out assessment in the workplace.[16] The case studies revealed the following assessment outcomes are relevant to at least some of the case-study enterprises:

- ✧ productivity/quality/safety improvements
- ✧ award/agreement requirements
- ✧ performance measurement/review.

[16] Even the eight enterprises committed to a qualifications pathway have other reasons for valuing assessment effort.

Productivity

All the manufacturing and some of the service and entertainment enterprises mentioned productivity, quality or safety improvements as outcomes from their assessment effort. The respondents saw a direct link between the enterprise's ability to assess competence and improvements in the operation. This finding is in keeping with much of the qualitative data findings of Hayton et al. (1996) and the companion study by this research group reported elsewhere (see Smith et al. 1994). In both of those studies quality and productivity improvements were reported by enterprises as a major factor driving training effort,[17] and clearly an (competency) outcome that would need to be measured.

Quality and productivity are interesting outcomes to measure. Both can be measured independently of competence assessment; indeed, many would argue that the true measure of productivity, in particular, is evidence in the enterprise's 'production' (per unit of input). Of course, many of the case-study enterprises are from service industries (libraries, museums, theatre companies etc.), where organisational productivity and quality can be more difficult to measure. Maybe a proxy measure of organisational performance in these circumstances, like improvement in workforce competence, is a more attractive measure.

Award or agreement obligations

Six of the manufacturing enterprises made reference to competency assessments being conducted as part of their award or enterprise agreements. These enterprises used formal assessment against competencies to determine progression from one job or competence level to another. Generally the outcome of progression for workers was a remuneration increase.

The assessment systems in each of the six enterprises were formalised, and had procedures and agreed roles for those involved. The competencies assessed in some enterprises were internally drafted and accepted, and in other enterprises the national competency standards (from the relevant training package) were adopted. A possible gradual movement towards supplanting enterprise competencies with national competency standards was observed, but on the basis of the number of cases, it was impossible to determine whether there was a trend, and if so, if it had any significance. It could be hypothesised that once an enterprise progresses as far as crafting its own competencies (often by combining standard operating procedures with generic skills requirements), the right conditions for further moving to national standards can be easily facilitated.

There are sound reasons for proposing this hypothesis, and discussion of one of the case-study enterprises is quite instructive. A large manufacturer, this enterprise has evolved through a number of enterprise agreements gradually improving in-house developed competencies. The enterprise has attempted to negotiate for improved workforce flexibility in return for increased financial rewards. In order to protect their negotiated gains, management has come to realise that the existing assessment mechanism (based on imprecise and unevenly constructed 'chunks' of competence) is too open to exploitation.

Many of the other case-study enterprises had similar, although informal, processes in place.

Performance review

In those enterprises where awards or agreements are not competency-based, performance review or appraisal outcomes can be derived from competency assessment. Some of the service enterprises and one manufacturing enterprise mentioned performance review as a formalised assessment process.

The few case-study enterprises using competency assessment as part of performance review tended to direct their review attention more towards the 'staff' employees rather than the 'operators' or 'shop floor' employees. In no case was competency assessment used for performance review alone; rather it

[17] Strangely, however, the qualitative data findings were not replicated in the analysis of the quantitative data, except in respect to a relationship between quality concerns and formality of training effort.

was incorporated within a context of appraisal of achievement of job, team or organisational goals, targets or service measures. These reviews were linked to the remuneration systems and sometimes to the career system.

Relationships with registered training organisations

The training reform agenda has brought with it many promises and espoused benefits. One of these has been the promise of improved relationships between workplaces and registered training organisations. Changes to the VET system in Australia has brought in particular:

- ✧ user choice
- ✧ employer obligations for workplace experience
- ✧ concept of partnerships with registered training organisations
- ✧ promise of flexible delivery.

What have the case-study enterprises seen of these changes? Have they been able to capitalise on the freeing-up of the system through these reforms? Are there still issues around the relationships with registered training organisations?

Only nine of the 23 case-study enterprises had any history of a relationship with a registered training organisation. This sample, while very small, nevertheless provides many interesting stories about benefits (and costs) of dealing with external training providers. None of the case-study enterprises had become a registered training organisation, although three had entertained the idea of doing so before making a decision to 'outsource', arguing that it was 'not core business' to be so engaged in training matters.

In all but one of the enterprises in a relationship with a registered training organisation, the relationship was with a TAFE institute. In the case of the three libraries, the relationship with TAFE was confounded to some extent by an overarching relationship with the Australian Library and Information Association (ALIA).

Four large manufacturing enterprises had strong relationships with a local TAFE, characterised, in the words of the respective enterprises, as 'like a partner'. At least one of these relationships was described as 'cosy', where very good cooperation had been built up between the enterprise and the TAFE college. Overall, the relationships seemed to be mature and business-focused, and the benefits accruing to both partners appears to be 'following the book' in terms of ANTA expectations. In all four cases, TAFE was providing flexibly delivered off-the-job training, at the worksite. Assessments in the workplace with TAFE and enterprise assessors working together were being carried out.

In the case-study enterprise where the relationship with TAFE was described as cosy, the relationship had gone beyond delivery of training and assessment services, to joint curriculum development work, and even defining of competencies for jobs as yet not covered by training packages. This relationship determines the way the enterprise approaches training. It allows it to harmoniously integrate theoretical, underpinning knowledge into what ostensibly remains on-the-job training. This is done through the development and distribution of self-paced learning booklets to workers, learning which is supplemented by regular short workshops conducted by a relevant registered training organisation, with an enterprise 'expert' in a team teaching approach.

One of the case-study enterprises had its employees trained and assessed through an industry cooperation. The cement industry some time ago established the 'cement school' whereby nationally recognised training and assessment is provided to the industry nation-wide. Off-the-job training is provided in Victoria for cement industry employees from all over Australia. The employees go to this program, then return to their worksites for the on-the-job components. The industry involvement is widespread and commitment to the program is reported by managers as good.

While most of the case-study enterprises currently in a relationship with a registered training organisation were satisfied, the development of the relationship was frequently via a rocky pathway. A description of the history of one case-study enterprise in their search for training 'partner' is illustrative. The enterprise, a medium-sized plastics manufacturer, had attempted, over the years, to have training adapted and customised to their specific workplace requirements. Initially, the enterprise supplemented their basic unstructured buddy training by selecting the best machine operators and sending them to external TAFE certificate courses. From the perspective of the enterprise, the experience was poor, training often being inappropriate to their needs (both immediate and longer term), and the assessment processes dogged by low credibility.[18] The next move came with the purchase of new, technologically advanced injection moulding equipment. One of the owners and a very senior operator were sent to Germany to learn from the equipment manufacturer the best way to operate the moulding machine. Subsequently, the equipment supplier was asked to provide on-site training support to untrained workers. While the quality of the training was thought to be of a high standard, the enterprise remained disappointed because of the limited availability of the supplier. Finally, the enterprise lobbied TAFE to deliver the training on the enterprise site. This satisfies most of the enterprise's training requirements—it is specific to their operational needs and it is delivered through a mix of theoretical and practical content, with sufficient grounding in theory to develop problem-solving competence. Furthermore, the learning results/outcomes are clearly visible and happening 'under the noses' of management.

The thinking behind this medium-sized enterprise's journey towards their current relationship is interesting. As a small-to-medium-sized business it was difficult for them to master the complexities of the VET system, except to understand there was something to be gained. As such, they have looked to external 'experts' in the past to help them master the VET maze. This, as noted above, was not always successful. However, the owners/managers of the enterprise never developed illusions as to their own ability or availability to deliver training effectively. Nor did they feel their better operatives were either capable or appropriate for training, especially if this removed them significantly from the main purposes of the business. Clearly this was not an area of expertise (training) they felt they needed to master, but rather one they could (and should) 'outsource'.

For the last four to five years the enterprise has been seeking a training approach based on 'on-line, on-site' external training support for existing unstructured ('buddy') training effort. With the most recently formed relationship with TAFE, it is beginning to achieve its aims. The enterprise's owners, however, remained concerned that their strong position within the relevant industry association might have given them a bargaining position with the registered training organisation that would not be common with small-to-medium-sized businesses.

Indeed, this is an almost subliminal theme in respect to registered training organisations—enterprise relationships. All of the case-study enterprise relationships with training organisations seem to work best when the power balance resides with the enterprise. In this situation, training organisations act like all other suppliers of goods and services to the enterprise, delivering to the requirements of the specific needs of that enterprise (otherwise a new supplier will be sought). Either because of size, political stature, or simply self-confidence and persistence, the case-study enterprises with registered training organisation relationships in this research had all managed to structure the relationship to their advantage (and, it is to be hoped, that also of the registered training organisation).

Change as a motivating factor

In an earlier companion study to this research, *Factors that influence the implementation of training and learning in the workplace* (Ridoutt et al. 2002), a number of organisational factors which could influence the volume and type of training were examined. A factor of high significance that emerged

[18] Criticism included the comment 'TAFE never fails anyone', and this has led to the enterprise re-assessing the competence of their employees after completion of TAFE studies, and calls for the industry association to obtain registered training organisation status and assume assessment-only functions.

from that study was change. Organisations which had experienced or were experiencing change were the most likely to engage in higher training effort.

This variable was not examined independently in this study as most of the organisations were experiencing change at the time of the study. However, the case studies offer a window through which an understanding can be obtained—how change acts within enterprises to increase and structure their training effort, including moving to training package-based training and assessment.

The first example is one of the large manufacturers. Approximately 12 months ago the enterprise underwent a powerful exercise of strategic visioning at the executive and middle management levels. For reasons which are unclear, but quite possibly because of the inclination of the consultant/facilitator, the strategic importance of the company's human resources were not only considered, but also afforded high priority as potential influences on the company's future success. As a consequence, training became a major thrust in the company's strategy for staying competitive over the long term, and possibly gaining a competitive ascendancy in the medium-term future. A future change in direction of products to which the enterprise was already committed only enhanced the need for a capable and flexible workforce. Reinforcing the change process, the consultant/facilitator involved in helping the company develop its strategic direction has subsequently been employed in a training management capacity to oversee the implementation of what are, in essence, sweeping changes to the training/learning culture.

In practice, the enterprise has shifted towards a stance of total training, with everyone ultimately scheduled for training to minimum competency standards for quality production. To shoulder such sweeping change in training effort, and to ensure suitable benchmarks against which progress can be measured, the relevant training package was adopted. This meant turning from semi-structured 'buddy'-type training with no formal outcomes, to qualifications-referenced outcomes. The process starts with recruitment. All new recruits must have a certificate I level qualification in an appropriate area of competency. The enterprise has invested heavily in VET-in-Schools programs and recruits many of its new personnel from this source.

New employees are asked to choose a career pathway upon entry to employment (for instance in moulding, tooling and trades). After choosing, recruits are then required to be signed up under a traineeship. This entitles the enterprise in most cases to claim subsidy support. Training will then proceed to develop trainees to minimum certificate II but generally certificate III level in their chosen 'career'. The attainment of qualifications is seen as the most visible sign of attainment of competency, and while accepted as not without fault, is believed to be the best current approach. The enterprise believes that what qualifications lack in terms of being able to fully capture competency requirements for their jobs (at relevant certificate levels), they make up for in delivering workers with satisfaction and giving them a sense of job security.

A second example can be described more simply, not in the least because the organisational change has occurred, but because the resultant effects on training effort have not yet been felt and are still in planning. This enterprise, a medium-sized manufacturer of chemical products, was, until only a short time before the study, a small enterprise. An acquisition by an overseas company of the enterprise, along with similar-sized companies in each Australian state (all manufacturing a similar line of chemical products), has created the medium-sized enterprise. Because of the newness of the acquisition, the enterprise was still behaving, in terms of training effort, as would a small enterprise, with largely informal, unstructured training processes (and little formal assessment).

It was noted that the growth in size of the company nationally had allowed the corporate entity to employ a dedicated human resources manager. The addition of this resource would clearly provide the necessary infrastructure to support a more efficient and structured approach to training, and a more formal method of assessment. At the same time, the joining of a number of disparate enterprise units under a common corporate label would require issues of uniformity and corporate standards to be addressed. These issues would be especially pertinent to competency development.

5 Discussion

Introduction

This research study was based on intensive data collection and analysis at 23 separate enterprise case-study sites. In some respects the study did not adopt a 'normal' case-study approach, in that significant quantitative data were collected. A specific tool was constructed to facilitate examination of jobs in terms of competencies, and subsequently to allow investigation of competencies identified in terms of outcome expectations. This meant that observations could be made at two different levels of analysis—the enterprise or case-study level and the unit of competency level. The methodology is described in more detail in chapter 3.

The remainder of this chapter highlights a number of points of interest arising from this study. The points of interest capture both reflections on the original research questions and new issues arising during the course of investigations. Arguably, a common thread is that each point in its own way introduces a new perspective on the way enterprises approach training outcomes.

Different perspectives on outcomes

The study as noted above focused on employers' expectations in relation to the outcomes of training.

The scant literature available relevant to this area strongly intimated that attaining qualifications for workers (especially arising from enterprise-based training) is not a principal concern of employers. Training is meant to contribute to the profitability of the business; anything else that derives from that is potentially welcome but secondary (Noble 1994; Stokes 1998).

Employers do not necessarily have a sound understanding of the relationship between the costs of training and the resultant business benefits (Long et al. 2000). Frequently they seem to work off a 'gut feel' to cost–benefit assessment, something to which many of the managers interviewed in this study could easily relate. Part of the tolerance employers display in calculating the costs and benefits relates to the actual difficulty in isolating the influence of training effects and ascribing causality. An equally important part also appears to be the context in which such decisions are made, given that training decisions are frequently made with short-term, even immediate ends in mind, but even then often with more strategic company and industry outcomes under consideration. This, Dockery et al. (1997) might argue, could explain the approach of employers to trade training. By all objective measures, it barely, if at all, returns a gain on the training investment over the full term of the apprenticeship, and yet, most employers *believe* trade training delivers them a financial benefit. It is a case, undoubtedly, of both the cost–benefit appraisal being beyond most enterprise's capacity to easily calculate, and the twin strategic goals of contributing to the supply of tradespersons and perpetuating the trade skills base that underpins broader industry viability. Some enterprises may also seek to contribute, for example to their local community, on a more altruistic basis.

In lieu of well-grounded measures of the immediate benefits to their enterprise from training, employers have a preference for specific outcomes from training that they relate, however indirectly, to business profitability. The Allen Consulting Group (1999) listed these as:

- improved quality

- ✧ improved competitiveness
- ✧ multi-skilling of employees
- ✧ compliance with occupational health and safety legislation
- ✧ workplace change.

In this study, increased enterprise quality, safety and productivity were both credible and valued outcomes employers expected from training effort. Modern management theories tend to identify companies being strong in these characteristics as likely to be better performing and highly profitable. For example, Bartol et al. (1988) emphasise that occupational health and safety is an area of employment which is receiving increasing attention as a 'marker' for sound management practice.

Competence outcomes in quality and safety, in particular, are assessed formally by many of the case-study enterprises. Enterprise performance in the areas of quality and safety is comparatively easy to measure, and not significantly more difficult than assessing the competence of individuals in these same areas. For instance, easy-to-collect statistics on loss time injuries provide a widely accepted means of measuring enterprise occupational health and safety performance. Why employers bother to assess *individual* competence in these areas and not actual enterprise performance is an interesting question. Perhaps enterprises are concerned to know not just that enterprise improvements have been achieved, but also that they can be sustained through improved worker competence. Moreover, as 'trailing indicators' of occupational health and safety performance, such as loss time injuries, become less discriminating and a poorer indicator of future improvements, 'positive indicators' of performance are being more strongly advocated (for example, Hopkins 1994) and adopted by enterprises.

Similar issues surround quality management. For instance, in non-manufacturing enterprise environments such as libraries, museums, and entertainment venues, measuring improvement of an *enterprise* in quality can be an abstract exercise, and therefore assessing *worker* competence in quality is more feasible (and objective). Insufficient investigation of this issue was undertaken to enable more than the development of hypotheses.

Notwithstanding all of the foregoing, none of the 23 enterprises studied in this project raised objections to the pursuit of qualifications either by the worker acting independently (through attendance at training courses) or through enterprise-based training effort. Some indeed made it incumbent upon workers to achieve a qualification as a pre-requisite to employment. This was particularly the case in relation to libraries. Others made recognition of some competencies a requirement of being able to perform certain parts of a job (for instance drive a forklift). Apart from these cases, competence to perform the job, in whatever way it was assessed (see below), was the critical outcome being sought not a qualification *per se*. Those who expect vocational education and training to produce a qualifications outcome only (or even primarily), need to revisit the antecedents of the Training Reform Agenda (for example, Dawkins 1988) and assess what was really meant to be achieved.

The perspective of employees towards the outcomes of training was not specifically investigated in this study. The literature review revealed that the views of employers and employees are likely to be different (Allen Consulting Group 1999), but evidence to support this contention is limited. On the contrary, like employers, workers often appear to be more concerned with being competent to perform their job well, and content to believe that rewards such as higher pay, faster promotion or improved job satisfaction will flow axiomatically from this consequence. Studies of the returns to workers from employer-provided training seems to support this view, at least in relation to wage prospects (Blundell, Dearden & Meghir 1996).

While an employee perspective was not garnered in this study, one aspect that is interesting to speculate on is the at-times large discrepancies between the number of competencies identified by employers for workers to perform their jobs, and the much lower number of competencies required to obtain a qualification. On average, employers identified a need for 15 to 20 more units of

competency than required by the relevant package to obtain appropriate Australian Qualifications Framework level qualifications for the job being examined. It would be tempting to ascribe this to natural exuberance on the part of the employer to expect more of workers than might be reasonable. However, this same result has been obtained in other unpublished studies by the authors in at least one similar industry (plastics, rubber and cablemaking) where respondents have been *employees*. In these studies also, employees have almost universally identified many more competencies required for their jobs than are required to construct a qualification from the relevant training package. Does this mean that both employers and employees are confident that they can obtain qualifications whenever they choose? Or that qualifications are simply 'lesser' than the generally accepted standard in the workplace and they are therefore undervalued? These are possible questions for another study.

Not all competencies are the same

The literature review findings highlighted that not all units of competency are treated equally by employers. There are at least two ways employers differentiate between competencies: firstly, between critical jobs (Cutler 1992) and secondly, within jobs, between those competencies considered more critical to productivity (Payne 2000). It was hypothesised that employers would differentiate amongst competencies by requiring recognition[19] only of those competencies that they believed were critical to the outcomes of the business. The study found that employers do in fact discriminate in consistent ways between different types of units of competency.

First, most employers identify only a few units of competency (on average less than five) that in their opinion require recognition. There were three main types of competencies that employers consistently target for recognition:

- ✧ competencies associated with 'tickets' and licences conferred by non-training bodies
- ✧ competencies associated with training and assessment
- ✧ competencies associated with occupational health and safety.

These types of competencies listed are, in many ways, examples of 'negative' motivational forces. Employers are not necessarily positively disposed towards assessing and recognising competence, but they are required to do so by legislation, regulation, rule or for fear of the consequences. Examples of competencies that might be included in this group are:

- ✧ forklift drivers licence
- ✧ rigging and scaffolding competency tickets
- ✧ restricted electrical licence
- ✧ workplace training and assessment qualifications
- ✧ permits for working in confined spaces.

The fourth type of competency that employers believe require recognition is job-specific competency.[20] There were slight (although significant) differences found between the proportion of defining and enabling competencies requiring recognition. The significant difference, however, was almost entirely attributable to the situation pertaining in the service industries, and overall, despite the statistically significant finding, the distinction between 'defining' and 'enabling' competencies is not clear-cut. Smaller-sized enterprises for instance were keener to formally assess and/or recognise enabling competencies than were larger enterprises.

[19] A reminder that this term is used here, as in other parts of the document, to mean formal assessment and recognition against industry competency standards as set in a relevant training package.

[20] For instance, 'operate an injection moulding machine' in the case of an injection moulder, or 'screen the film' in the case of a film projectionist.

The absence of an unequivocal preference for defining competencies should not be surprising. Employers consistently advocate the importance of generic or so called 'soft' skills in the workplace (Ridoutt & Willett 1994). Research conducted for ANTA's national marketing strategy found that generic skills (compared with 'job-specific skills') were more popular with employers, especially in enterprises with a turnover greater than $5 million (Research Forum 2000). Nevertheless, some commentators see any trend towards valuing 'enabling' competencies above (or instead of) 'defining' or technical competencies as a source of concern, prompting visions of large numbers of jobs from which meaningful content has been emptied (Cutler 1992; Payne 2000).

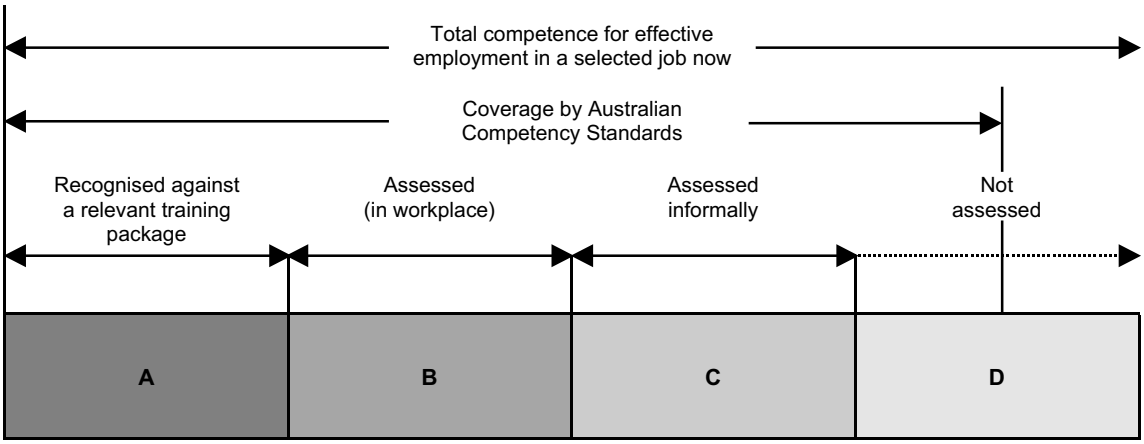
Second, employers generally believe that all of the competencies they state are required for good job performance should be assessed *at least* in a formal, structured way (if not assessed for recognition). Leaving aside competencies identified by employers in the entertainment industry, a majority (58.6%) of total competencies identified by enterprises are required to be formally assessed. Just over one-quarter of the other competencies identified, required 'informal' assessment according to employers, and 16% required no assessment.

Assessment model

A model for classifying competencies on the basis of assessment methodology rigour and the 'fit' within the parameters of a relevant training package was outlined in chapter 2. Interview questionnaire trials, and experiences from the interviews themselves, led to slight modifications of the classification categories, resulting in the four categories based only on assessment effort described in chapter 4. A consolidated version of the classification is provided in figure 4, although more detailed descriptions of each of the categories is provided in chapter 4.

In chapter 4 it was also noted that these categories received acceptance from employers—they found the categories easily comprehended and a shared meaning was established readily. Nevertheless, the categories remain arbitrary in many respects, and purport to do no more than model the reality of assessment effort in the workplace as a continuous variable. In this sense, we agree with the thoughts of Toop, Gibb and Worsnop (1994) who concluded that any assessment system is highly 'context-bound'.

Figure 4: Assessment model



Note: **Group A:** competencies employers would seek to have recognised by Australian Qualifications Framework-level qualifications and statements of attainment against the qualifications frameworks within an existing relevant training package.

Group B: competencies that employers wish to have assessed in their workplace, but for which recognition as a formal qualification is not required.

Group C: competencies that the employer determines require only informal assessment.

Group D: includes any other competence requirement that is not covered or defined by any existing competency in a training package in the Australian VET system or does not require assessment.

Comment on the model

There are several aspects to note in the proposed classification model. First, the total competence requirements identified by employers for effective employment, even that part of which can be properly mapped to relevant industry competency standards (groups A, B and C), is invariably more than is needed to construct a qualification. Second, the proportion of competencies falling within each classification group varies between industry sectors, and within industries between enterprises. Even within enterprises, the proportion of competencies allocated to different categories varies between jobs and labour force classes (for example, trades jobs versus operative roles).

One of the difficulties with the model adopted is the use of terms 'formal' and 'informal' and 'structured' and 'unstructured'. The terms are used widely in vocational education and training, especially in relation to training (for example, Smith 1997; Research Forum 2000), although often without a precise definition.

In the domain of assessment, the terms are particularly ambiguous. Formal assessment is generally understood within VET circles as judgements of competence based on defined criteria using clear methods of assessment and documentation, but 'informal' assessment, unlike informal *training* (a term accepted even if there is little consensus on what it means), is not widely acknowledged. In this study informal assessment has come to mean judgements of competence formed in the workplace based on sometimes ill-defined (or poorly articulated) criteria and in the absence of any documentation.

Some will argue that this is not assessment at all. We would argue that at best (done by very experienced people), it can be a very cost-effective assessment approach. Clearly, one can envisage a circumstance where a very experienced assessor with a well-constructed internal 'map' of assessment criteria could conduct a more rigorous 'informal' assessment (without documentation) than a less experienced person conducting a 'formal' assessment using inappropriate tools. On the other hand, in the hands of an inexperienced or disorganised supervisor/mentor, informal assessment could be very subjective (and possibly inefficient). Nonetheless an assessment is still taking place. In a discussion of informal assessment in the context of recognition of prior learning (RPL), a Vocational Education, Employment and Training Advisory Committee (1993) paper suggested it served well the purpose of building self-confidence and esteem, and may be suited to clarifying training or career interests.

Inevitably, the terms are used as proxies only to describe and gauge the level of assessment effort, the assumption being that 'formality' and 'structure' equate with high levels of assessment effort and methodology rigour. This may well be the case, but only if formality involves commitment to principles of fairness and validity, and structure is translated into more objective, relevant and observable forms of evidence gathering.

Terms less open to ambiguity would be preferable. Hager (1997) in arguing a strong linkage between formal on-the-job training and informal workplace learning, goes on to argue a need for 'good research on learning in the workplace especially the *informal kind*' (Hager 1997, p.6, emphasis added).

An equally strong case could be made for research into the forms of assessment.

Risk-management approach to assessment

While the earmarking of competencies itself was not discussed at length with interview subjects (that is, the process whereby identified competencies were allocated to assessment requirement categories), some interesting observations are possible.

It appears that employers apply a risk-management approach to assessment. This concept is not without support in the literature, authors commentating on assessment and recognition of prior

learning issues early in the history of the Training Reform Agenda seemingly quite keen to discuss the mechanics and the merits of a risk-management approach (Vocational Education, Employment and Training Advisory Committee 1993; Gonczi, Hager & Athanasou 1993). For instance, Gonczi Hager and Athanasou were of the strong opinion that 'there is no universal method of performance assessment and the process of assessment is largely one of balancing conflicting demands and compromising fidelity' (Gonczi, Hager & Athanasou 1993, p.50).

They go on to point out that compromise will involve trading-off acceptable costs of testing against the costs of error in judgement.

In an enterprise setting, this trade-off equates to a basic question managers must ask themselves: 'What are the consequences to the business, if a person, in this job, is not competent in this specific unit of competency?' The consequences they probably consider in their deliberations over a unit of competency are:

- ✧ financial consequences: a poorly done job could increase the costs of production through excess time allocation or through materials wastage, or lost customers, ultimately influencing profit
- ✧ legal consequences: operation without a licence, permit or just proper training could result in a fine or harsher legal action
- ✧ human consequences: unsafe practice could lead to serious injury or death, leaving a trail of pain and suffering for the individual, their family, the workforce and the enterprise.

Another way of considering risk is to establish a connection between the level of risk and the degree of recognition being sought. Thus, 'claims for recognition for a few units of competency represent low risk situations because further training and, by extension, further assessment will be required' (Vocational Education, Employment and Training Advisory Committee 1993, p.18).

Unmerited recognition will in this case be 'caught' in the safety net of the next (possibly fuller) round of assessment. This conceptualisation of 'risk management' is likely to have more resonance with VET practitioners than with enterprise managers, but it still introduces the possibility of varying rigour in the assessment process. The rigour is in two forms: 'the amount and quality of evidence required and the involvement of more assessors to review that evidence and make the final assessment decision' (Vocational Education, Employment and Training Advisory Committee 1993, p.18).

If the consequences are dire when a worker is incompetent in a particular unit of competency, then the cost of assessing competence accurately becomes a worthwhile investment for the enterprise. The higher the risk and the more adverse the consequences, the more important becomes the assessment process and the more likely it is that a formal recognition pathway will be sought.

A risk-management approach to assessment clashes with the values of most registered training organisations, both public and private, and with the underpinning philosophy of training packages. This philosophy tends to espouse that all units of competency that go to make up a qualification should be equally rigorously assessed. However, one wonders if indeed registered training organisations do view all units of competency equally (Vocational Education, Employment and Training Advisory Committee 1993 argues not), or if, in fact, more emphasis is placed on both the teaching and assessing of defining or technical competencies in particular. From a training package perspective, would accepting different standards of assessment for different competencies simply open a 'Pandora's box' of problems, eroding efforts to develop consistent standards across Australian Qualifications Framework levels between and within industries? As noted earlier, the bases upon which employers differentiate between units of competency in their standards of assessment need to be further explored.

Who makes assessments?

The study found a range of people conducting assessments of competence in case-study sites. Even within sites, different people may be assigned the task of assessing different categories of competency. For instance, the situation depicted in table 23 could easily exist for a single job within a single (probably larger) enterprise.

Table 23: Assessment of competence

	Persons involved in assessment process	Type of competencies being assessed
W	Human resources personnel	Workplace induction competencies
X	Leading hand/mentor in 'buddy' training relationship	Competencies that are deemed able to be assessed informally
Y	Mentor plus recognised workplace assessor	Competencies that are deemed to require formal assessment only
Z	Recognised workplace assessor plus external auspicing (registered training organisation) or regulatory body	Competencies deemed to require formal external assessment and recognition (e.g. for licences)

Larger enterprises may have the resources to support the situation described in table 23, with allocation of assessment tasks to people with different responsibilities within the organisation. If they also fit the profile of the 'here and now' or even 'high achievers' market segments in ANTA's national marketing strategy (Research Forum 2000), they could well be amenable to increasing the proportion of total competencies in the formally assessed and recognised pools of assessed competencies. Moreover, there is a body of people (managers, supervisors, workplace trainers/ assessors) in the enterprise to which marketing effort can be specifically directed—in vocational education and training terms that require little translation.

On the other hand, those enterprises where all assessment activity is occurring on the shop floor in an informal manner (box X in table 23), will be more difficult marketing targets. Assessment in such cases is conducted by a much more diffuse body of people, at lower levels of the organisation, and with qualitatively much poorer engagement with the concepts of vocational education and training. It might take significantly longer in these circumstances for the 'benefits' of training packages to filter down to that level of the organisation.

Link between training and assessment

One fascinating and unexpected finding of the study was the relationship between the level of formality/structure in the delivery of training and assessment processes. Most observers would expect that a leaning towards formality in training (exemplified through higher structuring of training effort, use of 'qualified' trainers, a relationship with a registered training organisation) would be accompanied by a similar and equal leaning in assessment process. The findings describe a much less precise relationship.

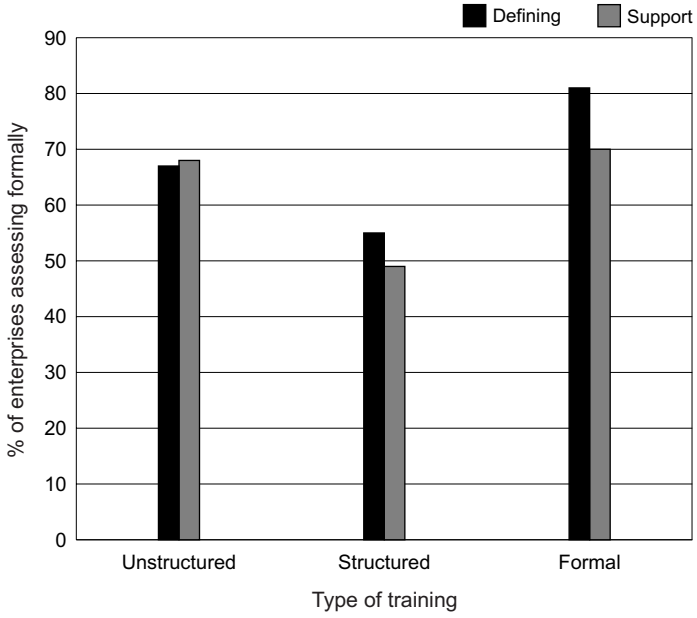
Formal training was strongly associated with formal assessment. Of those enterprises engaged in formal training effort, between 70% and 80% of the competencies they identified for job performance were nominated as requiring formal assessment. However, it did not follow that unstructured/informal training was associated with informal types of assessment. The relationship is described in figure 5. As can be seen from the left-hand side of the graph, enterprises whose training effort was largely unstructured were nevertheless, on average, associated with higher levels of formal assessment than those enterprises adopting a largely structured training approach. As noted above, one might have expected a less complicated linear relationship.

The evidence in this study certainly would not support the postulation of any strong conclusions, even that the relationship discovered could be replicated through a more powerful investigative

process. However, it is interesting to ponder on how such a counter-intuitive relationship might be rationalised.

One possible explanation is that some enterprises have insufficient competence (workplace trainer) and/or resources to properly structure training, but nevertheless understand that the competencies being developed are highly valued and require appropriate levels of assessment. For instance, small enterprises developing trade-type competencies could adopt a 'time-served' approach to training (comparatively unstructured and inefficient), yet still recognise the importance of the competencies being developed and so prefer to assess the attainment of competence formally. In a way, from a risk-management perspective, it would represent a means of overcoming a deficient training process. This explanation is by no means compelling, and this area remains an attractive focus for future research.

Figure 5: The relationship between levels of formality in training and assessment effort



Demand side of training

It is a source of puzzlement that enterprises not directly involved in providing training services generally do not relate to training providers as they would to most other suppliers. If a plastics manufacturer were supplied raw materials for production other than those specified, they would likely be ferocious in their demand for redress. And yet, the same standards of demand for services are rarely applied to training providers. Indeed, Ridoutt and Willett (1994) in a study of employers with metal trades apprentices, found most had no idea what was being supplied to their apprentices in their off-the-job training, and felt powerless to try to synchronise their production needs with the training of their apprentices.

This study identified four only out of the 23 case-study enterprises with strong and productive relationships with a registered training organisation. The case-study enterprise relationships with registered training organisations seemed to work best when the power balance resided with the enterprise. The Allen Consulting Group (1999) found successful enterprise–registered training organisation relationships were built where the enterprise understood their core business (which was not training) and sought out like-minded education and training providers with whom they could design focused training programs *in partnership*.

In this study, in each of the four cases of enterprises with a good working arrangement with a registered training organisation, the association between enterprise and training organisation was characterised by a 'normal' market relationship. This included:

- ✧ The enterprise was clear in its demand for training services.
- ✧ The registered training organisation observed the parameters of the service demand.
- ✧ The enterprise was vigilant in ensuring services were supplied 'to specification'.

There seem to be some lessons to be drawn from these cases in respect to the proposed national marketing strategy (ANTA 2000). While there are many laudable strategies and initiatives proposed, including improving training delivery systems, none of the strategies appears to entreat enterprises to simply behave in the training market as they would in their core business markets. More demanding enterprises could be a more powerful way of achieving desired change in institutional training provider behaviour, and giving greater effect to the broader ANTA initiatives in user choice.

Required job competencies

In an earlier section a large number of competencies was identified by employers as required to ensure that jobs were performed well, significantly in excess of that needed to obtain a qualification at an Australian Qualifications Framework level appropriate to the job. There is a number of points to consider here, the first being a possible explanation and the second being the discussion of the benefits this situation might hold for both employer and employee.

First, by way of explanation, it could be that VET sector qualifications need to be accepted like those of other sector (school, higher education) qualifications. There, they are a minimum record of a person's competence, and a key only to further learning. It is estimated by many in the higher education sector that, within a year of graduation, after working in an appropriate job, people with higher education qualifications will substantially increase their level of competence. It is to be expected that graduates from vocational education and training will gain also from their post-training experiences, continually building competencies that would not be recognised. There are interesting questions here, such as, what type of competencies are built? Are they competitive or complementary to those already obtained; and are they different or similar for those with varying initial levels of formal education and training?

An alternative, but not mutually exclusive, explanation for this apparent discrepancy could be that, when employers were interviewed and they were considering a particular job, they were also considering the incumbent of that job. It would not be out of the question to suppose that if a job incumbent came to mind, it would, in all probability, be a highly competent person. If it is accepted that the requirements of a job and the person in the job interact, then the job itself becomes moulded over time by the incumbent and may increasingly involve duties/tasks that fully encompass the incumbent's particular competencies and interests. Thus the interview subjects could have identified jobs for description where a particular worker was associated with that job, and subsequently described the competencies required of that particular job, as performed by a particular individual.

Generally speaking, whether this explanation has any basis in reality or not, a surplus of competencies to the formal competence requirements of jobs is a good workforce characteristic. This is because it promotes flexibility. Should the competence requirements of a job or role change (due to technological change, organisational restructure etc.), then surplus competence to that required presumes that the workforce has room to move, to adjust potentially to the new circumstance.

Conclusion

This study was initiated to explore the seemingly simple question of the value of qualifications as a measure of the outcome of training effort in the eyes of enterprises. The beguilingly simple answer is that qualifications are not significantly valued by employers as outcomes of their own training efforts, although this response varies significantly in relation to a range of variables, including the types of competencies being considered. Alternative outcome measures therefore, less precise than recognised qualifications but potentially more relevant and therefore valued by employers, might be more appropriate. These could include:

- ✧ increased competence in areas designated as critical to a business, either in defining or enabling competencies
- ✧ increased use of competency standards as a basis for performance appraisal, and improved performance outcomes using this tool
- ✧ increasingly strong relationships between qualifications frameworks and systems of reward.

Possibly more important than the issue of outcomes, and equally deserving of further research, are issues that have been identified through this study relating to the thoroughness of acquiring and assessing of competencies, and how the degree of thoroughness might vary according to context and inherent qualities of the competency itself. These issues have great significance for VET policy. Borrowing words from a rather acidic opinion article by Jonathan Payne, the implications are:

> First … that the VET system must come to terms with the fact that both the categories and **levels** of skill being demanded of it are widely divergent, thereby confusing policy makers as to the precise targets and delivery mechanisms to be adopted … Second, policy claims surrounding universal 'up-skilling' now become increasingly meaningless and contested unless it is clear what 'skills' are actually being enhanced. (Payne 2000, p.362)

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Appendix 1: Interview protocol

Part A: Data on the company/enterprise

Ask site manager to answer a survey (see appendix 2). The questions of this survey are drawn from the survey being used for the evaluation of the 'barriers to the implementation of training' project. However, as we are interested in qualitative data and in exploring the issues as thoroughly as possible, this survey will be administered by the interviewer instead of being self-completed.

The aim of using some of the same questions is to allow extrapolation of information collected in the case studies, if patterns are identified.

Part B: Data on competency requirement, attainment and recognition

The competencies identified in the training package for each of the industries have been translated into lists of units of competency. Each enterprise is to be presented with two lists: one that contains the unit titles of 'defining' units of competency which are specific to the industry, and a second common list with unit titles for 'generic' or 'enabling' competencies which are found across several of the training packages.

In the study six 'defining' lists are to be used, one for each of the following industries:

- ✧ Entertainment
- ✧ Libraries and museums
- ✧ Film, TV and multimedia
- ✧ Chemical, hydrocarbons and oil refining
- ✧ Plastics, rubber and cablemaking
- ✧ Manufactured mineral products[21]

Before beginning data collection you must ensure you have a copy of the 'defining' list for the particular industry you are contacting as well as the 'enabling' list.

Identify five roles

Site manager is told that we would like to look at up to five different jobs and that in order to get a good description of the requirements of those jobs we would like to talk to the supervisors/ managers and competent workers responsible for those functions.

[21] Examples of both the 'defining' and 'enabling' competency lists can be found in appendix 3.

Identify competency requirements of each job

Step 1

Show supervisors/managers the relevant defining list for the industry. Each person is to be shown only the defining list containing competencies related to their industry (for example, a supervisor in a movie theatre would be shown DEFINING LIST—Entertainment while a supervisor in a plastics injection company would be shown DEFINING LIST—Plastic rubber and cablemaking).

Step 2

Ask interviewee to describe one of the selected jobs within their organisation by picking out from the 'defining' list of competencies extracted from relevant training package those competencies they believed were needed to perform the job at a competent level.

Step 3

Once the 'defining' competencies have been identified, show the interviewee the support list of competencies and ask them to identify from that list additional competencies required by the job.

Step 4

Show the interviewee the selected list of competencies and ask them to nominate competencies, outside those provided to them in the competency lists, that they believe are important to the performance of chosen jobs (thus not listed in the 'defining' or 'enabling' lists). After checking that those competencies added are not in fact in the training package, add them to the list (these competencies will probably fall into the 'Group D' competencies in our proposal).

Step 5

Repeat steps 1–4 for each of the selected jobs until all jobs have been analysed.

Evaluating competencies

Once a full list of competency titles has been identified for the job, present the interviewee with the selected list of competencies and ask them to identify:

- ✧ competencies that the organisation would seek to have recognised by qualifications
- ✧ competencies that the organisation wishes to have assessed in their workplace, but which are not recognised by formal qualifications
- ✧ competencies that the employer determines do not require or warrant formal assessment effort but require informal assessment
- ✧ competencies that do not require either formal or informal assessment.

Explanatory notes to the protocol

Given the limitations on time and the volume of the training packages, both the defining and enabling lists contained only the unit titles. Where the interviewee was ambiguous about the unit, the training package was consulted and the elements, performance criteria and range of variables were used to help in the assessment of that unit.

The process of listing only the unit title has obvious limitations. It is possible that the units that were not seen as ambiguous could, in effect, have been chosen without all the elements of the unit applying to the job. Similarly, the units that were not chosen because the content (based on the unit title) did not appear to be relevant could have been chosen if the whole unit was analysed. This

limitation in the methodology was a trade-off as the consultants considered that to review fully each unit would dramatically increase the time spent in each organisation and that would put an unacceptable burden on the interviewees and company. The consultants believed that, because of their in-depth knowledge of the training packages, this limitation would be minimised as they could explain the units and clarify most points.

Appendix 2: Examples of competency lists

Code: R = Competency required for the job
A = Competency recognised
B = Competency formally assessed
C = Competency informally assessed

Chemicals, hydrocarbons and oil refining industry

Defining competencies

Job area	Main competency	Competency number	R	A	B	C
Process competencies	Apply procedures to equipment operation	PMA PROC 100A				
	Make measurements	PMA PROC 101A				
	Undertake housekeeping operations	PMA PROC 102A				
	Select and assemble materials	PMA PROC 103A				
	Prepare materials for production	PMA PROC 104A				
	Operate an item of equipment	PMA PROC 200A				
	Operate fluid flow equipment	PMA PROC 201A				
	Operate fluid mixing equipment	PMA PROC 202A				
	Use utilities and services	PMA PROC 204A				
	Operate heat exchangers	PMA PROC 205A				
	Operate separation equipment	PMA PROC 206A				
	Operate powered separation equipment	PMA PROC 207A				
	Operate chemical separation equipment	PMA PROC 208A				
	Operate particulates handling equipment	PMA PROC 210A				
	Operate manufacturing extruders	PMA PROC 211A				
	Manufacturing paints	ICP IM 31A				
	Operate and monitor boiler steam/water cycle	UTE NEG 162A				
	Manage, operate and monitor turbine	UTU NEG 210A				
	Operate a production unit	PMA PROC 300A				
	Operate distillation units	PMA PROC 301A				
	Operate reactors and reaction equipment	PMA PROC 302A				
	Operate furnaces	PMA PROC 303A				
	Operate compressors	PMA PROC 304A				
	Operate process control systems	PMA PROC 305A				
	Undertake tank-farming operations	PMA PROC 307A				
	Trial new process/product	PMA PROC 401A				

Support competencies

Main competency	Competency number	R	A	B	C
OH&S					
Follow OH&S and security policies and procedures	PMA OH&S 100 A THH COR O3A				
Implement workplace health, safety and security procedures	CUE OHS 1A PMA OH&S 200 A				
Identify and act upon hazards in the workplace	PMC SUP 272 A PMA ENV 100 A				
Conduct housekeeping activities including cleaning plant and equipment	PMB MAINT 01A				
Monitor and control environmental hazards	PMA ENV 200 A				
Minimise environmental impact of process	PMA ENV 300 A				
Develop and maintain a safe workplace and environment	BSX FMI 408A PMA OH&S 400A CUE OH&S 2A				
Collect waste for recycling or safe disposal	PMB WASTE 01A				
Co-ordinate waste disposal	PMB WASTE 02A				
Undertake incident control	PMA HYD 402A				
Respond to emergency situation	PMA HAZ 200A				
Prepare equipment for emergency response	PMA HAZ 201A				
Communication					
Participate in interactive workplace communication	PMB COMM 03A				
Collect and present workplace data and information	PMB COMM 02A				
Complete workplace documents	PMB COMM 01A				
Training					
Plan assessment	BSZ 401 A				
Conduct assessment	BSZ 402 A				
Review assessment	BSZ 403 A				
Train small groups	BSZ 404 A				
Plan and promote a training program	BSZ 405 A				
Plan a series of training sessions	BSZ 406 A				
Deliver training sessions	BSZ 407 A				
Review training	BSZ 408 A				

Appendix 3: Job titles

- ✧ Accounts Officer
- ✧ Assistant Exhibitions and Collections Manager
- ✧ Assistant Technician
- ✧ Banbury Operator
- ✧ Blender
- ✧ Blown Film Operator/Team Leader
- ✧ Box Office Operator
- ✧ Business Manager
- ✧ Concrete Batcher
- ✧ Control Room (Calcining) Operator
- ✧ Curator
- ✧ Delivery Truck Driver
- ✧ Die Setter
- ✧ Education and Public Program Officer
- ✧ Exhibitions and Collections Manager
- ✧ Extruder Operator
- ✧ Fibre Colouring Operator
- ✧ Forklift Operator
- ✧ Front of House Manager
- ✧ Injection Moulding Operator
- ✧ Lab Technicians
- ✧ Leading Hand
- ✧ Library Assistant – Circulation
- ✧ Library Assistant – Acquisitions
- ✧ Library Assistant – Circulation
- ✧ Library Officer – Acquisitions
- ✧ Library Officer – Interlibrary Loans
- ✧ Lighting Co-ordinator
- ✧ Lighting Supervisor
- ✧ Lighting Technician
- ✧ Load Operator
- ✧ Machine Operator
- ✧ Materials Handling
- ✧ Mixer
- ✧ Office Manager
- ✧ Operator
- ✧ Optical Fibre Buffering Operator
- ✧ Packer
- ✧ Plant Operator
- ✧ Plant Operator 1
- ✧ Plant Operator 2
- ✧ Plasterboard Maker
- ✧ Polisher
- ✧ Pre-Stressed Pump Operator
- ✧ Production Worker
- ✧ Refractory – Casting
- ✧ Refractory – Monolithic
- ✧ Refractory – Slide Gate
- ✧ Rewind – Operator/Team Leader
- ✧ Sound Supervisor
- ✧ Sound Technician
- ✧ Supervisor
- ✧ Technician
- ✧ Technicians (Senior)
- ✧ Technicians Document Distributor
- ✧ Tester
- ✧ Treadline Extrusion Operator
- ✧ Tyre Building Operator
- ✧ Venue Manager
- ✧ Wire Cablemaker
- ✧ Yard Operator

Appendix 4: Description of industries

Description of the industries included in the study

It is worthwhile describing here the industry context for this study; that is, the types of employers from which data were collected. This helps explain the nature of the research team, detailed in a later part of this section. It also helps to establish early in the study report some parameters around the study findings, and introduce to the reader the exploratory nature of the research effort.

The case study enterprises were selected from five industry sectors:

- Chemical and oil
- Manufactured mineral products
- Plastics, rubber and cablemaking
- Entertainment
- Libraries and museums.

The chosen industry sectors, with the exception of libraries, are characterised by:

- low level of formal qualifications (Ridoutt & Willett 1994; Hummel 1995) and poor uptake of government funding programs in support of accredited training (Dutneall, Hummel & Ridoutt 1998)
- low recognition of competencies acquired by industry workers (see table 24, note that the Manufactured Mineral Products and Libraries and Museum Training Packages were only endorsed in 1999). The figures in table 24 need to be compared with the average training package achievement of 22 563 units of competency. The three training packages relevant to this study represent three of the nine 'worst' performing training packages (out of 34) on this measure of performance.
- absence of a strong tradeperson's culture (although several of the industries, notably the plastics industry, are quite closely associated with the metals industry and have long aspired to introduce an industry-specific 'trade' qualification)
- high levels of ('unrecognised') training effort, with several of the industry sectors (for example, chemical and oil, cement, paint) engaging in significant structured on-the-job industry training that receives wide industry acceptance (Dutneall, Hummel & Ridoutt 1998).

Table 24: Training package implementation-units of competency achieved at 31 December 1999

Training package	States in which units of competency achieved								Total units achieved
	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	
Chemical and Oil**	-	✓	-	-	-	-	✓	-	92
Entertainment	-	✓	-	✓	-	✓	✓	-	554
Plastics, Rubber and Cablemaking**	-	✓	-	✓	-	-	-	-	0

Notes: ✓ = Enrolments in this training package in 1999
- = No enrolments in this training package in 1999
* During 1999, 812 271 training package units of competency were reported as achieved across all industries.
** A number of enrolments in these industry sectors are still in courses that pre-date the introduction of the training package.

Source: ANTA (1999)

Some of the manufacturing industry sectors are also characterised by significant levels of capital investment. This is particularly so in the case of the continuous process manufacturers (for instance in the chemical and oil, petroleum and cement manufacturing industries). On the other hand, the batch process operations in these same industries can also include very small 'backyard' enterprises.

The library and museum industry sector is different from the other industry sectors insofar as formal qualifications are more prevalent, and courses widely accepted by the industry pre-exist the introduction of the training package. To a large extent enterprises expect qualifications to be held by prospective employees. This places libraries, in particular, in a quite different 'cultural' setting from the other industry sectors, resembling more a professional service enterprise culture (with its stronger relationship with the formal VET sector).

All of the industry sectors included in this study have positive predictors of employment growth (Dixon & Rimmer 1996), although the projected annual growth rate varies considerably between industry sectors (see table 25). All but the plastics, rubber and cablemaking industry sector is in the top half of projected industry performance. In the following sections some brief characteristics of each of the industry sectors are outlined.

Table 25: Employment: average annual percentage growth rates for selected industry sectors

Sectors	% growth in employment per annum		
	1986–87 to 1994–95	1994–95 to 2002–03	Rank based on forecast (out of 22 industry sectors)
Top growth industry: Construction	1.6	4.7	1
Chemical, petroleum and coal products (Chemical and oil)	0.9	3.1	5
Non-metallic construction material (includes Manufactured mineral products)	-0.1	2.5	7
Hospitality, leisure and personal services (includes Entertainment, libraries and museums)	3.3	1.7	9
Leather, rubber, plastic and other products (includes Plastics, rubber and cablemaking)	1.4	1.4	12
Low growth industry: Public administration and defence	0.5	-1.3	22

Source: Dixon & Rimmer (1996)

Plastics, rubber and cablemaking sector (PRC)

The plastics industry is seen as a strategic sector in the manufacturing industry due to the wide range of manufacturing skills and processes utilised, the extensive interface with other industries and the rate of technological change within the industry (Fuller & Hastings 1993).

The plastics industry is characterised by high levels of full-time employment (92% in 1987). The plastics, rubber and cablemaking sector includes all sizes of industries from micro to very large, but in the plastics industry in particular, there is a larger-than-average proportion of small enterprises.

Chemical and oil

The chemical and oil sector is characterised by a high revenue turnover. In 1991–92 the total turnover ($7245.8 million) comprised 15% of the New South Wales manufacturing turnover making the industry the third largest in the state. Despite the high turnover, the chemical and oil industry is now the third smallest manufacturing industry in terms of workforce size. This indicates a sector that is less labour-intensive than most other manufacturing industries (Ridoutt & Willett 1994).

The industry can be divided into two clear segments, those enterprises producing through continuous chemical processing operations, and those using batch chemical processes. The former enterprises tend to be large, high-capital investment and often state-of-the-art manufacturers, such as oil refineries. The latter are generally smaller low-cost plant operations, producing chemical products such as soaps and detergents, cosmetics and adhesives. All sectors of the chemical and oil industry are extremely sensitive to environmental claims (often levelled at the industry).

Entertainment

Enterprises within the entertainment industry are typically small, with a large percentage of the workforce as part-time, casual or volunteer. It is an industry with very low levels of qualification.

The enterprises in this industry range from national icons (Opera Australia, Sydney Opera House) to companies that make fireworks displays. Less obvious inclusions in the industry are events management companies, cinema halls and amateur theatre companies. According to Dixon and Rimmer (1996, p.253) the entertainment industry has 'above average prospects' for growth as consumer preferences shift towards its products.

Libraries and museums

This industry sector is characterised by high levels of formal qualifications. Within this sector, formal qualifications are an important basis for recruitment, deployment and salary system decisions. The VET sector offers a range of qualifications that fit with the traditional higher education qualifications for librarians and curators.

Libraries range in size from small specialist units within single interest organisations to large organisations in their own rights (for example, in university settings). Similarly, museums range across a wide variety of sizes and purposes, Australian Museum On-Line estimating that there are over 1000 museums in Australia. This includes art/history/science museums, public art galleries, science exploration centres and keeping places.

Manufactured mineral products

The manufactured mineral products sector is similar to the chemical and oil sector in that enterprises range from continuous processing enterprises with highly technical plant and considerable investment (glass and cement manufacturers) to low-cost plant enterprises producing simple products (for example, some concrete products)

The manufactured mineral products sector is really a 'created' sector, since the training package covers several sectors that would not normally associate with each other; for instance, glass products manufacturers would normally have little in common with tile makers.

Parts of the industry have significant ownership concentration, for instance the small number of cement manufacturing enterprises is owned by a very few parent companies, but through a complex web of cross-ownership arrangements.

Some sectors are now becoming exposed to global market forces as a result of significant importing, and they are finding world best practice of many of the overseas producers to be much greater than the generally smaller producers in Australia.

Appendix 5: Research partners

Human Capital Alliance	Private sector research consultancy	Lee Ridoutt, Principal Kevin Hummel, Associate Ralph Dutneall, Associate
Monash University–ACER	Centre for the Economics of Education and Training	Chris Selby Smith, Co-Director
Manufacturing Learning Australia	Industry training advisory body for process manufacturing sectors	Jeremy Gilling, Executive Officer
CREATE Australia	Industry training advisory body for the entertainment and cultural industry	Cassandra Parkinson, Executive Officer
NSW TAFE, Manufacturing and Engineering Educational Services Division (MEES)	Public sector registered training organisation	Raju Varanasi, Program Manager, Process Manufacturing[22]

Most of the data collection and writing for this report was undertaken by Human Capital Alliance consultants in conjunction with, and under guidance from Chris Selby Smith.

The other consortium partners provided timely advice and facilitated access to enterprises for data collection. The five industry sectors selected for the study are all covered by the consortium partner industry training advisory boards—CREATE Australia and Manufacturing Learning Australia.

[22] By the completion of this project Raju Varanasi had become the State Manager, ITAM, TAFE NSW.

Appendix 6: Survey form

Section A: Industry and organisation details

A1 **Organisation name:** ……

A2 **Industry sector (Please tick):**

Rubber		Cement		Film & television	
Cablemaking		Concrete products		Museums	
Plastics		Chemical		Entertainment	
Clay & Ceramics		Oil refining		Libraries	
Glass making		Hydrocarbons			

A3 **Person completing questionnaire**

Which of the following groups best describes your position?

Senior manager or director primarily responsible for personnel (e.g. Human resources manager / personnel / staff development or training manager)	1
Assistant to above (e.g. recruitment officer, training co-ordinator, etc.)	2
General manager / business owner / partner in company	3
Senior manager or director primarily responsible for production (e.g. Production / process / operations manager	4
Assistant to above (for example, shop floor supervisor/foreperson)	5
Financial controller/accountant	6
Other (please specify) _____	7

SECTION B: Organisation classification

B1 **Is your worksite part of a single site organisation or multi site organisation?**

a single site organisation	1	→ go to QB5
a multi-site organisation	2	

B2 **Is this worksite the head office of your organisation?**

Yes	1
No	2

B3 Is your worksite part of an entirely Australia-based organisation or is it a part of a multinational corporation?

an entirely Australian based organisation	**1**
a multinational corporation	**2**
don't know	**9**

B4 Approximately how many employees do you currently have at the worksite?

Less than 20	**1**
20–49	**2**
50–199	**3**
200–499	**4**
500 +	**5**

B5 Approximately how many employees does your entire organisation currently have in Australia?

Less than 20	**1**
20–49	**2**
50–199	**3**
200–499	**4**
500 +	**5**

SECTION C: Organisation characteristics

C1 Of all the staff currently at your worksite, how would they be divided among the following four categories: full-time permanent, part-time permanent, contract and casual.

a. full-time permanent	**%**
b. part-time permanent	**%**
c. contract	**%**
d. casual	**%**
	100%

C2 What percentage of the current total staff at your worksite would fall into the following categories?

a. management and professional	**%**
b. technical and trades	**%**
c. production	**%**
d. clerical and sales	**%**
e. labourers/general hands	**%**
	100%

C3 **Thinking about these same categories of staff again, would you say that the range of tasks performed by each has changed in the last 3 years? For each category please estimate if their tasks have changed a lot, changed a little, or not changed at all.** ***(Please circle one answer only for each staff category.)***

Staff categories	A lot	A little	Not at all	Don't know	N/A
a. managerial and professional	1	2	3	9	7
b. technical and trades	1	2	3	9	7
c. production	1	2	3	9	7
d. clerical and sales	1	2	3	9	7
e. labourers/general hands	1	2	3	9	7

C4 **Please indicate if any of the changes below have taken place at your worksite in the last 3 years?** ***(Circle one answer only for each type of change.)***

Type of change	Yes	No	Don't Know
a. downsizing i.e. reduction in overall staff numbers	1	2	9
b. reducing number of management layers	1	2	9
c. introducing profit centres	1	2	9
d. decentralisation of decision making	1	2	9
e. introduction of team processes	1	2	9
f. more emphasis on internal staff communications	1	2	9
g. purchase of other business operations	1	2	9
h. diversified into new business areas	1	2	9
i. take-over by another company	1	2	9
i. other major changes *(please specify)*	1	2	9

C5 **Which of the following phrases best describes how much the *level of competition* for your products/services has changed in the last three years?**

increased a lot	1
increased a little	2
stayed the same	3
decreased	4
don't know	9

C6 Rate the level of competition in the *market* for your products/services on the following factors:

	Very low	Low	Medium	High	Very high	No competition
a. competition from overseas	1	2	3	4	5	6
b. competition from domestic companies	1	2	3	4	5	6
c. competition on the basis of price	1	2	3	4	5	6
d. competition on the basis of quality	1	2	3	4	5	6

C7 Thinking about the *value* of your organisation's current products/services, what proportion of these would you say are for export markets?

more than 75%	1
51–75%	2
26–50%	3
1–25%	4
none, products/services not exported	5
don't know	9

C8 If in the 1999 calendar year you had a change in *competition* and/or *market* for your products/services, which of the following phrases would you say best describes how it has affected …

	Increased a lot	Increased a little	Stayed the same	Decreased a little	Decreased a lot	Don't know	Not applicable
a. cost of supplying products/services	1	2	3	4	5	9	99
b. knowledge required by staff	1	2	3	4	5	9	99
c. level of training supplied	1	2	3	4	5	9	99

SECTION D: Impetus factors

D1 Does your worksite currently have a…

	Yes	No	Don't know
a. business plan	1	2	9
b. vision statement	1	2	9
c. mission statement	1	2	9

D2 Is this readily available to all employees?

	Yes	No	Don't know	Not applicable
a. business plan	1	2	9	99
b. vision statement	1	2	9	99
c. mission statement	1	2	9	99

D3 Is there a special section on skills development and training?

	Yes	No	Don't know	Not applicable
a. business plan	1	2	9	99
b. vision statement	1	2	9	99
c. mission statement	1	2	9	99

D4 Is there a process in place for review and ongoing development of a:

	Yes	No	Don't know	Not applicable
a. business plan	1	2	9	99
b. vision statement	1	2	9	99
c. mission statement	1	2	9	99

D5 Does your organisation currently have a document that clearly describes the behaviour (values) that they want fostered and encouraged within the organisation? *(These may include such values as trust, teamwork, honesty and integrity in all dealings and may also extend to dealings with customers and suppliers and the community at large.)*

yes	1
no	2
don't know	9

D6 Does government regulation or licensing greatly affect the market for the products and services of your organisation?

yes	1
no	2
don't know	9

D7 Is your worksite accredited or is it in the process of being accredited under standards of the international or Australian Standards Organisation (e.g. ISO/AS 9000)?

accredited	1
in the process of being accredited	2
none of the above	3
don't know	9

D8 Has your worksite adopted, or is it in the process of adopting, a total quality management or other similar quality management program?

has adopted a quality management program	1
is in the process of adopting a quality management program	2
none of the above	3
don't know	9

D9 Has there been a *major* investment at the worksite in the last three years in areas like new technology or plant, equipment or facilities?

yes	1
no	2
don't know	9

D10 Has your organisation introduced *new products* or *services* in the last three years?

yes	1
no	2
don't know	9

D11 Does your organisation currently have a reward system (other than salary or wages) for staff?

yes	1	
no	2	→ go to QD13
don't know	9	→ go to QD13

D12 **Is this reward system …**

	Yes	No	Don't know
a. financial	1	2	9
b. structured	1	2	9
c. have an underlying system that is known to staff	1	2	9
d. flexible in the types of rewards used	1	2	9
e. other (*please specify*)	1	2	9

D13 **How are working conditions at your worksite governed? That is, are employees paid according to any of the following?** ***(You may circle more than one option if appropriate.)***

awards	1
registered collective agreements *(e.g. certified enterprise agreements)*	2
registered individual agreements *(e.g. Australian Workplace Agreements)*	3
informal individual agreements *(e.g. appointment letter, verbal agreement)*	4
Something other than above *(please specify)* ……	5
don't know	9

→ go to section E

D14 **What proportion of the current workforce at this worksite would have training provisions included in their conditions of employment, however those conditions are governed** ***(e.g. award, agreement etc.)?***

all employees (100%)	1
76%–99%	2
51–75%	3
26–50%	4
up to 25%	5
don't know	9

SECTION E: Learning and training infrastructure

The following questions are about *formal and informal* <u>*learning*</u> arrangements you might have for staff employed at your worksite.

E1 Firstly, in the last year have you had any of the following at your worksite?

	Yes	No	Don't know
a. apprentices (traditional, indentured apprentices)	1	2	9
b. 'new apprentices' (engaged under the 'new apprenticeship' scheme)	1	2	9
c. trainees	1	2	9
d. employees currently undertaking other accredited courses	1	2	9
e. employees in labour market programs such as Jobskills	1	2	9
f. students on workplace programs from schools, TAFE colleges or universities	1	2	9

E2 Does your worksite contribute to course fees or allow time off for paid employees to attend courses at any of the following?

	Yes	No	Don't know
university	1	2	9
TAFE	1	2	9
adult community education	1	2	9
private colleges	1	2	9

E3 Thinking now about more informal types of learning, were any of the following provided for your worksite staff in the 1999 calendar year?

	Yes	No	Don't know
a. induction training	1	2	9
b. on-the-job training	1	2	9
c. mentoring	1	2	9
d. structured job rotation	1	2	9
e. in-house staff development courses	1	2	9
f. regular staff/management meetings	1	2	9
g. regular team meetings	1	2	9
h. opportunities to attend other worksites	1	2	9
i. a system for evaluating and learning from unusual events, incidents, problems, etc	1	2	9

E4 **In the 1999 calendar year, did your worksite organise any of the following types of training which were delivered to your staff by *another organisation*?**

	Yes	No	Don't Know
a. training by equipment suppliers	1	2	9
b. training by consultants	1	2	9
c. training by industry associations	1	2	9
d. sending staff to short courses, seminars, conferences, promotional functions	1	2	9

E5 **Approximately what proportion of paid employees at your worksite would have been involved in some form of training (i.e. all forms of training covered by prior questions E2 to E4) at any time during 1999?**

none at all? (0%)	1
up to one-quarter? (1–25%)	2
up to one-half? (26–50%)	3
up to three-quarters? (51–75%)	4
most of staff? (76–99%)	5
absolutely everyone? (100%)	5
don't know	9

E6 **Again, considering all forms of training, what would you estimate the percentage of your worksite's payroll spent on training in 1999 to be?**

none at all	1
less than 1%	2
at least 1% but less than 2%	3
at least 2% but less than 5%	4
at least 5% but less than more than 10%	5
more than 10%	6
don't know	9

E7 **A lot of different learning strategies are used by different companies. What happens in your organisation to ensure that everyone at your worksite gets appropriate training? In 1999 did your worksite use any of the following strategies?**

	Yes	No	Don't know
a. a list of training opportunities is circulated and employees nominate the training they want	1	2	9
b. a list of training opportunities is circulated and supervisors or managers nominate the employees who should attend	1	2	9
c. employees identify their own learning needs, and appropriate training, and negotiate this with their supervisor	1	2	9
d. supervisors or managers assess each employee in a fairly informal way concerning what learning is needed, and organise training as the opportunities arise	1	2	9
e. each employee is assessed in a formal and structured way against a list of competencies, and a competency development plan for that employee is prepared	1	2	9

E8 **Does your worksite currently have …**

	Yes	No	Don't know
a. a human resource officer who is responsible for developing a learning environment	1	2	9
b. a training manager	1	2	9
c. a specialist training section	1	2	9
d. worksite trainers/ instructors	1	2	9
e. a written training plan	1	2	9
f. specialist training facilities (e.g. a training room)	1	2	9
g. line managers who are expected to create a learning environment as part of their role	1	2	9

E9 **Does your work site do the following:**

	Yes	No	Don't know
a. formally evaluate any training delivered	1	2	9
b. conduct systematic training/competency development needs analysis	1	2	9
c. have a training/learning committee	1	2	9
d. develop learning resources/training manuals	1	2	9
e. formally evaluate all learning which occurs	1	2	9

E10 Has your worksite, in the last year, conducted training based on national competency standards or enterprise standards?

	Yes	No	Don't know
a. National competency standards	1	2	9
b. Enterprise standards	1	2	9

E11 Is your organisation a registered training provider? That is 'registered' with a State training authority (like OTFE in Victoria or DET in NSW).

yes	1
no	2
don't know	9

E12 Please indicate which of the following factors is important in driving learning and competency development at your worksite. Would you say it is very important, somewhat important or not important?

Factors driving training		Not important	Somewhat important	Very important	Don't know
a.	concern for quality	1	2	3	9
b.	new or changed technology	1	2	3	9
c.	a change in work organisation including way in which jobs are defined	1	2	3	9
d.	government licensing and regulation, including occupational health and safety regulation	1	2	3	9
e.	deregulation of markets	1	2	3	9
f.	industrial relations developments	1	2	3	9
g.	other factor *(please specify)*	1	2	3	9

E13 Which one of these would be the *single most important* factor? *(Circle one answer only)*

concern for quality	1
new or changed technology	2
a change in work organisation including ways in which jobs are defined	3
government licensing and deregulation, including occupational health and safety regulations	4
deregulation of markets	5
industrial relations developments	6
Other factors *(please specify)*	7
don't know	9

E14 Please indicate the level of agreement you have with the following statements by circling the appropriate number in each row. The level of agreement may vary between strongly agreeing to strongly disagreeing.

		strongly agree	agree	neutral	disagree	strongly disagree
a	When a problem occurs a hypothesis is put forward to be criticised and debated before action is taken to solve the problem	1	2	3	4	5
b	Problems are discussed and thought about before actions are taken	1	2	3	4	5
c	When problems occur action is taken to solve the problem	1	2	3	4	5
d	Managers and staff work together towards solutions	1	2	3	4	5
e	Employees take responsibility for their own learning	1	2	3	4	5
f	Mistakes are seen as learning opportunities	1	2	3	4	5
g	At management level the organisation has a positive attitude towards 'risk-taking' *(i.e. outcomes that are not fully predictable)*	1	2	3	4	5
h	At staff level the organisation has a positive attitude towards 'risk-taking' *(i.e. outcomes that are not fully predictable)*	1	2	3	4	5
i	Problems and their solutions are used as both individual and corporate learning opportunities	1	2	3	4	5

National Centre for Vocational Education Research

The purpose of this study was to identify the relationship between requirements for the performance of particular jobs and that specific part of the competence requirement that needed, in the opinion of employers, to be formally recognised. A large number of competencies were identified by employers as required for jobs to be performed well. Generally, this was significantly in excess of those needed to obtain a qualification at an Australian Qualifications Framework (AQF) level appropriate to the job.

NCVER is an independent body responsible for collecting, managing, analysing, evaluating and communicating research and statistics about vocational education and training.

ISBN 1 920896 51 1 print edition
ISBN 1 920896 52 X web edition

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