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**Australian Council for
Educational Research**

EMPLOYABILITY SKILLS
FOR AUSTRALIAN INDUSTRY:
LITERATURE REVIEW AND FRAMEWORK DEVELOPMENT

Report to:

Business Council of Australia

Australian Chamber of Commerce and Industry

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Contents

Tables

Figures

PREFACE AND ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

Purposes of the Report

Australia has devoted considerable resources during the 1990s in attempts to embed the Mayer Key Competencies into educational and training provision, especially in the VET sector. However, in part because of all of this activity, and the shifts in thinking that have resulted, there is a lack of clarity in the field. While there is general agreement that all young people need a set of skills which will prepare them for employment and further learning, there is a lack of consensus about what those skills should be – especially in light of the challenges facing Australian industry.

This report draws on Australian and overseas literature on key employability skills to:

- clarify concepts and terminology;
- analyse the principles and purposes in different approaches to key employability competencies, including the views of employers in Australia and overseas;
- develop a framework of key employability competencies for use in the fieldwork strands of the overall project; and
- propose options that would enable the development of key employability skills to be more deeply embedded in Australian education and training.

Concepts and Terminology

The concept of key employability skills provides a bridge between education and work. In a dynamic knowledge-based economy the job-specific skills that workers need cannot be readily predicted, and are subject to on-going change. What is important, therefore, is the capacity to continually adapt and upgrade through key or generic skills that can be applied in different settings.

Much of the debate on key employability skills has been stimulated and led by employer groups and individual employers. However, what employers are saying about key employability skills is largely consistent with the broad objectives of the education and training systems. Ways need to be found for business and educators to work together more productively, and to learn from each other. Common terminology is an important part of that process.

The lack of common understanding is reflected in the language being used in different circles and forums. Adjectives such as *core*; *key*; *generic* and *essential* are variously used to preface nouns such as *skills*; *competencies*; c*apabilities*; and *attributes*. It is not clear whether these different terms reflect slight variants of the basic concepts developed by Mayer or whether they signal genuinely new developments. In either case the lack of shared understanding makes it difficult to build the broad coalition of governments, employers and educators needed to drive substantial reform.

The term *generic employability skills* comes closest to capturing the essence of how the debate has evolved. *Generic* implies that what is learned in one context can be applied in others. *Employability* signals a connection to the world of work that is dynamic and long-term in nature. Employability implies qualities of resourcefulness,

adaptability and flexibility, and therefore also signals some of the qualities needed for success in work and life as a whole. *Skills* can be taken to subsume the other potential nouns, and is perhaps the only one of the descriptors that is used widely by both employers and educators in Australia.

Developments in Australia

In Australia there have been numerous reports and policy developments aimed at strengthening the linkages between education and the labour market, and stimulating the development of training and learning cultures within enterprises.

One of the key policy mechanisms for strengthening the linkages between education and the labour market has been the attempt to embed key employability skills more deeply in curricula and student assessment. The Key Competencies framework defined by the Mayer Committee in 1992 was a landmark development in this regard.

The Mayer set of Key Competencies shared a number of features with national frameworks developed in other countries around the same time. The major exception was that Mayer precluded values, attitudes and other personal qualities.

The implementation of the Mayer Key Competencies has been patchy, with the take-up being most extensive in the VET sector. Implementation difficulties have included problems with the conceptualisation of the Key Competencies, a failure to link the specification of the Key Competencies to curricula, especially in the school sector, and the specification of levels that did not relate to the levels of attainment that were being used more generally by educational institutions. The introduction of the Key Competencies coincided with other major changes in Australian education and training during the 1990s; part of the difficulty has been that reporting on the Key Competencies was perceived as adding to already substantial burdens on teachers.

These difficulties have not led to the concept of key employability skills being rejected. There is widespread support for the notion that education and training should provide young people with broad skills that will enable them to participate effectively in a wide variety of work and further education settings. Educational authorities and individual institutions almost always include some form of generic employability skills among their objectives. The key institutional developments requiring a re-thinking of the place of generic employability skills relate less to what is happening within each sector, and more to what is happening at the boundaries where they intersect. The increasing emphasis on student mobility and flexible pathways is necessitating the main education and training sectors to develop common frameworks and terminology, including in regard to employability skills.

A broadening of the educational perspective on employability skills was evident in the 1999 *National Goals for Schooling*, which placed a strong emphasis on the development of personal qualities and learning to learn among young people. The 2001 report of the Prime Minister's *Youth Pathways Action Plan Taskforce* has urged an acceleration of the implementation of the National Goals, including a recommendation that relevant authorities and industry groups work together to develop a nationally agreed set of key employability competencies to reflect changes in the workplace, emerging new industries over the last ten years and projected

changes to the year 2010. The time is ripe for this significant national debate to be re-energised.

Developments Overseas

A number of OECD countries developed national frameworks for generic employability skills in the early 1990s. These shared many features with the Mayer framework. The most notable differences were a greater emphasis in overseas schemes on basic or foundation skills in literacy and numeracy, and also on values and attitudes. In most cases the other national frameworks have not remained static, but have continued to evolve. This is particularly evident in the placing of national conceptions of key employability skills within a lifelong learning framework, and a growing emphasis on the skills needed to progress in the world of work, and not just to enter it.

Views of Australian Employers

Australian employers view a highly skilled workforce as key competitive requirement both nationally and internationally. Employers place great value on high level job-specific technical skills and on generic employability skills both for new entrants to their enterprises and for those who take senior responsibilities. Many employers place great importance on generic employability skills in their recruitment processes. Either directly or through human resource consultants, many employers test the generic skills of applicants and select on the basis of these attributes. Job-based training programs include elements of generic employability skills for both front-line managers and for people aspiring to senior management and leadership positions.

Employers include within generic employability skills an emphasis on basic skills, intellectual abilities, and personal attributes. Companies recognise the growing importance of information technology in business processes and see it as a basic skill. Intellectual skills such as problem-solving and analysis continue to be sought. Changing patterns of economic competition and forms of work organisation have led to a greater emphasis on what are sometimes called 'soft' skills – the personal attributes of teamwork, a work ethic, and a preparedness to be flexible and to embrace change.

An Emergent Skill Set for Consultation

The report draws on developments in other national frameworks and the literature on the views of Australian employers to propose an emergent skill set for consultation and debate in Australia. It comprises three main domains:

Basic skills

Foundation skills in literacy and numeracy, and in using information and communication technology

Intellectual abilities

Critical and creative thinking, and planning and organisation

Personal attributes

Attitudes and abilities of self-management, on-going learning, and collaboration

The Key Competencies identified by the Mayer Committee in 1992 corresponded largely with the domain of intellectual abilities. However, as the nature of the economy has changed, new skills are being recognised as important and a renewed focus on the attributes of individuals is emerging. Important generic employability skills being identified by employers and conceptualised in the literature give greater emphasis to interpersonal skills by extending "Working with Others and in Teams" to include negotiation and a client focus and by including a range of personal attributes. The personal attributes that the proposed framework adds to the Mayer specification of Key Competencies include a capacity to learn, adaptability and a willingness to embrace change, a business orientation, and an achievement orientation.

Moving the Debate Forward

A number of issues need to be resolved if a revitalised employability skills scheme that builds on Mayer is to be successfully implemented.

- The conception of employability skills needs to be sufficiently broad to meet range of needs of individuals and employers, and to be compatible with international developments. However, the conception must also be clearly focused so that a coherent construct, comprising the most important elements of employability, is being assessed.

- Employers and education and training providers need to be aware of the scope and importance of employability skills for individuals, enterprises, and industries. Support from these stakeholders for the further development of assessment and reporting arrangements for employability skills is essential in order to justify further developmental effort.

- Education and training providers may be more prepared to focus on employability skills if it can be shown that these skills can be assessed and reported effectively. Employers may be more willing to demand evidence of the achievement of these skills if they are made more aware of these skills and if standard reporting arrangements, such as skills profiles or passports, can be developed.

The developmental work within Australia and overseas over the over the past decade is cause for optimism that these challenges can be met. In particular, there is a sound evidential basis for the valid assessment and reporting of a broad range of employability skills components.

1. INTRODUCTION

1.1   Purposes of the Project

Australia has devoted considerable resources during the 1990s in attempts to embed the Mayer Key Competencies into educational and training provision, especially in the VET sector. However, in part because of all of this activity, and the shifts in thinking that have resulted, there is a lack of clarity in the field. While there is general agreement that all young people need a set of skills which will prepare them for both employment and further learning, there is a lack of consensus about what those skills should be – especially in light of the challenges facing Australian industry.

This project was commissioned by the Business Council of Australia and the Australian Chamber of Commerce and Industry to develop a framework for drawing together the views of Australian industry and employers on key employability skills, and to propose ways of ensuring those views are reflected in future policy and practice.

The project brief required ACER to: review the bases of the various concepts of key employability competencies and their variants used in Australia, and the language that underpins them, in order to clarify where differences are more semantic than real, distil the key underlying principles and purposes, ensure that the identified skills are relevant to worker and industry needs, and to re-energise policy development and implementation [by]

- reviewing the major Australian and overseas literature on industry and employer views on key employability skills;

- providing a framework that helps clarify industry and employer views on employability skills, and an analysis which assesses their congruence or otherwise with the other terms currently used in Australian debate; and

- drawing on the relevant literature and good practice examples to propose options that would enable the development of employability skills to be more deeply embedded in Australian education and training.

The brief has been discharged in this report through:

- a review of developments in Australia recognising a range of contextual factors that have influenced the adoption of the Key Competencies concept developed by the Mayer Committee in 1992, and through a review of related international developments;

- a review of Australian and overseas literature and the views of Australian employers leading to a framework for representing generic employability skills; and

- a discussion of a range of options arising from issues around the definition, implementation; assessment, and recognition of generic employability skills.

This report has not presented a definitive list of skills, but has produced a framework within which a broad range of generic employability skills can be considered. The framework has been presented as a contribution to an ongoing debate. The range of skills encompassed by generic employability skills is broad, but there are priorities that could become the focus of immediate attention and action.

The Mayer Committee itself recognised the need for future revisions to its view of Key Competencies. It recommended that:

> The Key Competencies be reviewed periodically … to ensure that the set appropriately reflects the generic competencies essential for effective participation in the emerging forms of work and work organisation.

<div align="center">(Australian Education Council. Mayer Committee, 1992a, p.9)</div>

This report is a contribution to the ongoing development of the Key Competencies concept and its application in Australia.

1.2   The Knowledge Economy and Changing Skill Demands

Australia, in common with most OECD countries, is placing an increasing emphasis on the development of 'human capital' – the knowledge, skills and motivations embodied in people. On-going structural changes affecting all OECD economies and societies have increased the importance of up-to-date skills and competencies. The growing share of economic output in services is knowledge- and information-intensive, as is an increasing proportion of manufacturing and primary production. This places a premium on the continual upgrading of the skills and competencies of the workforce, that is, developing coherent strategies for lifelong learning (OECD, 1996).

"Lifelong learning" has become one of the most frequently used terms in education and training circles in the late 1990s. Policy documents at national, state and institutional levels are increasingly being framed from a lifelong learning perspective. At international level lifelong learning has been adopted as the key organising concept in the education and training programs of the European Union (1995), the OECD (OECD, 1996) and UNESCO (Delors, 1996). In Australia reports on the future shape of higher education (West, 1998), the national strategy for vocational education and training (Australian National Training Authority, 1998), the National Goals for Schooling (Ministerial Council on Education Employment Training and Youth Affairs, 1999), and the National Innovations Summit (Business Council of Australia, 2000) have been framed in terms of the need for continual learning over the life span.

Lifelong learning is a response to the increasingly rapid changes underway in modern societies. Those nations, enterprises and individuals who are not able to anticipate and adapt to change – to continue learning – face bleak futures in an increasingly competitive world. The need to equip young people to be active and engaged learners over their adult lives is widely recognised, as is the need to provide retraining and updating opportunities for adults on an on-going basis.

The concepts of key, generic employability skills and competencies derive from a view that the job-specific skills that individuals need cannot readily be predicted, and

are subject to on-going change. What is important, therefore, is the capacity to continually adapt and upgrade via core or generic skills that can be transferred readily across different settings.

A recent major review by the (OECD, 2001) has argued that the growth of the "knowledge economy" – stimulated in part by demand for new types of goods and services, increasing globalisation of economic activities, and technological changes – has increased the demand for new or additional types of competencies among individuals. The OECD review termed these "workplace competencies", and argued that they are complementary to the academic and technical skills that have traditionally been the focus of much education and training policy.

Drawing on a wide international literature, the OECD review identified key elements of workplace competencies as including teamwork, the ability to cooperate in an unclear environment, problem solving, the capacity to deal with non-routine processes, the ability to handle decisions and responsibilities, communication skills, and the capacity to see workplace developments in a broader context.

The OECD review argued that although high levels of initial general education clearly assist people to anticipate and cope with change in the workplace, individuals are also able to acquire the competencies to engage effectively with the knowledge economy through experience, training or more informal ways. High-productivity workplaces require high-level competencies to be widely spread throughout the workforce, and not just concentrated among the already well-educated or relatively new entrants. The lifelong learning concept is applicable not just to young people – tomorrow's adults – but also to older workers and those wishing to re-enter employment.

1.3   Scope of the Review

This review has focused on the views of employers concerning the skills required of both new entrants to the workforce and established employees. Employers are clearly a key stakeholder group in identifying the skills people need to obtain, hold and develop in employment, and to create new employment opportunities for others. It is in the interests of businesses themselves, and the wider community, for employers to be as explicit as possible about the skills they require, and to work closely with education and training providers in helping to develop those skills.

In Australia and elsewhere, much of the debate on key employability skills has been stimulated and led by employer groups and individual employers. Ultimately, if current and prospective employees do not have the skills needed to succeed in modern competitive work environments no one's interests are being served. However, countries like Australia do not have a strong tradition of employers and educators working closely together on matters of common interest. By documenting the views of employers, and placing those in the context of developments in the education and training sectors, this review can contribute towards building a common understanding and shared responsibilities between business and education.

One of the key conclusions of the review is that what employers are saying about key employability skills is largely consistent with the broad objectives of the education

and training systems. In the wake of the Mayer Report, educators were able to demonstrate that the Key Competencies were indeed embedded in curriculum documents (see eg, Stehn, 1997). However, employers are indicating that these competencies are not consistently apparent among school leavers and graduates (see eg, ACNielsen Research Services, 2000). Ways need to be found for business and educators to work together more productively, and to learn from each other.

The report has focused on reviewing published research and commentary about employers' perspectives on employability skills. The literature has been drawn largely from the major English-speaking nations. One of the main challenges has been in discerning patterns and commonalities among employers' views when employers themselves are a diverse and often fragmented group. Another challenge has been in assessing commentary and policy documents that do not have a strong empirical base. Relatively little of the writing on employability skills has been grounded in detailed investigation of changing work environments and their implications for work-related skills, or of the ways in which such skills can be developed.

1.4 Terminology of Key Competencies and Employability Skills

The project brief required a review of the various concepts of key employability competencies and their variants used in Australia, and the language that underpins them, in order to clarify where differences are more semantic than real.

Many terms are used to describe characteristics that people should develop and demonstrate through education and training but that transcend the particular discipline area of the study and that are applicable to a wide range of contexts. They are variously referred to as *skills*, *competencies*, *qualities*, or *attributes*. These descriptors are modified by a range of qualifiers to indicate the breadth or purpose of their application. It is not always clear whether these different terms reflect slight variants of the same basic concept or whether they signal genuinely new developments. In either case the lack of a shared understanding can make it difficult to build the broad coalition of governments, employers and educators needed to drive substantial reform.

These terms are listed in Table 1.1. Various qualifiers are used with different descriptors so that the range of terms in use is quite broad. Further, different people may use the same term, but wish to convey quite a different conception. Correspondingly, people may use different terms from each other but wish to convey similar meanings. Thus, there is considerable scope for confusion to arise in discussing these entities.

Some authors use the terms rather loosely so that *generic skills* is taken to encompass the full gamut of these characteristics while others are rather more careful about the terms. For example, Clanchy & Ballard (1995) discriminate between *competences* and *competencies* and Cummings, Ho, & Bunic (1997) prefer the term *qualities* over *competencies* claiming that it includes knowledge and attitudes rather than just skills. Because of the potential for confusion, some discussion and clarification of the terminology is warranted.

Table 1.1   Terms commonly used to describe the characteristics learners are expected to acquire

Qualifier	Descriptor
Core	Skills
Key	Competencies
Necessary	Competences
Essential	Attributes
Generic	Characteristics
Transferable	Qualities
Graduate	
Employment related	
Employability	
Lifelong learning	

The qualifiers

The qualifiers *core, key, necessary, and essential* all seem to convey the sense that the entities being discussed are requirements for all people, irrespective of the level and nature of the work or other activities that they might undertake, and that there are minimal standards that all must achieve.

The terms *generic and transferable* carry the implication that the entities under discussion are applicable across all areas of human activity and that they can be learned in one context and be applied in others. While such implications may be contested, the transferability of these entities is a desirable goal and one that warrants attention in program design.

The term *graduate* as a qualifier is used by universities to draw attention to the attributes that their students are supposed to achieve.1 There is considerable common

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[1]   Recent work by ACER on the *Graduate Skills Assessment* has sought to (a) canvass the views of employers about the types of skills that they value in graduate employees, (b) document the qualities that universities state that they aim to develop in their students, and

ground in the attributes claimed for university graduates and those espoused for others. For example, under the Australian Technology Network (ATN) universities project (Bowden, Hart, King, Trigwell, & Watts, 2000), attributes include communication skills, critical and creative thinking, problem-solving, and teamwork skills. Such skills are also found in the Key Competencies described by the Mayer Committee (Australian Education Council. Mayer Committee, 1992a) and are skills expected of school leavers and VET sector graduates.

Of course, it is appropriate for universities to seek to distinguish their graduates from others, since they are quite selective in their entry requirements, and the cost of university education to both individuals and to the community is relatively high. Thus, they may choose to use graduate attributes as an indicator of the additional value added through their education programs. However, this distinction may be based more appropriately on levels of achievement than on qualitative differences in the skills of their graduates. It is possible that university graduates may have acquired additional generic competences, but it seems likely that they will have developed to a higher level a set of core competences that are common to school leavers and VET sector graduates. This suggests that, while universities may wish to use the term *graduate* as a qualifier, a more inclusive term is required for general use.

The term *employment-related* suggest that the entities being discussed are only of interest to individuals in relation to their work and to employers. However, one of the issues raised in the context of Australia's emerging knowledge economy is that such skills are important to people in several dimensions of their lives and to suggest that these skills are important only in their work would be to understate their scope and significance.

Despite the paramount importance to individuals and to the community of employment opportunities and performance, it seems useful to find a descriptor that also suggests the relevance of these attributes in people's personal lives and their engagement with their wider community. This idea – that there is a range of skills that are important to both employment and general functioning in society—is particularly evident in recent developments in the UK and Canada (see Chapter 3).

Employability is more attractive as a descriptor than *employment-related* since it conveys a greater sense of an individual's long-term capacity to build a career and to prosper in a dynamic labour market. Employability implies qualities of resourcefulness, adaptability and flexibility, whereas employment-related suggests an orientation to the current state of the labour market. As such, employability has more potential as a term to signal the qualities needed for success not only in paid employment but also in other domains of life.

The introduction of the term *lifelong learning* has been recent in the discussion of generic skills. It does reflect a new emphasis on the need for people to be adaptable and flexible and to be able to learn new skills throughout their lives (OECD, 1996).

(c) develop instruments to assess skills that appear to be common to both employer needs and university objectives. The early results of this work are discussed later in the report.

The significance of this term is that, upon leaving formal education, whether at the end of compulsory schooling or after completing an advanced qualification, all people will have achieved certain common skills, they will have the capacity to continue to enhance these skills, and to acquire new ones. This suggests that there may be a need to extend the list of skills to include a capacity and willingness to continue to learn. This emphasis is evident in the *Adelaide Declaration on the National Goals for Schooling in the Twenty-First Century* (MCEETYA, 1999*)*.

The descriptors

The related terms *skills* and *competencies* have been used extensively in discussions that have followed the release of the Mayer Report. To some extent, the word *skill* has been used in a very general sense to subsume all the descriptors that have been listed in Table 1.1, but more commonly it is understood to refer to an ability to perform a specific task. The term *competency* is used to reference an observable behaviour, a skill that is performed to a specified level and therefore provides a basis for the assessment of performance. However, there has been objection to the use of the concept of competency as a basis for describing the outcomes of general education, especially in higher education.

There is a view that advanced levels of performance on cognitively complex tasks are not amenable to disaggregation into discrete competencies. Complex performance is the result of having a body of knowledge, being able to recognise when it is appropriate to enact that knowledge, being able to activate that knowledge, to use it to guide actions, and to monitor the results of those actions. In addition, as will be shown later when reviewing evidence for generic abilities, there are strong affective or attitudinal impacts on performance and therefore there is a case for using terms that do not exclude such influences. However, in their discussion (p.13), the Mayer Committee acknowledged that their criteria for Key Competencies "preclude the inclusion of values and attitudes" and so, despite an expressed desire from industry and other groups for their incorporation and the Committee's own acknowledgement of their importance, these affective dimensions of performance were excluded.

The term *competence* is distinguished from a *competency*: the latter refers to a specific and observable behaviour that demonstrates an ability to perform a particular task. While this task may be indicative of a wider range of abilities, competencies appear to be reductionist, and in a climate characterised by rapid change and a degree of uncertainty about future requirements, where flexibility and adaptability are valued characteristics, describing and assessing individuals' abilities in terms of competencies may be far too limiting.

The term competence suggests that people they have an underlying understanding that enables them to produce and evaluate workable responses to novel situations. For this reason, the term competence might be preferred over competency. The disadvantage is that Mayer used the term competency, and the apparent similarity of "competence" and "competency" may mask the important difference in meaning.

Attributes, *qualities*, (in particular) and *characteristics* refer to capabilities of individuals, although the term characteristics is also used to describe the requirements of particular jobs. These descriptors are broader than those listed above. For this

reason, they may be less attractive than say competences, but they have the advantage that they care used to include attributes from the affective as well as cognitive domains.

Box 1: Use of terminology in this report

Although the qualifiers and descriptors in Table 1.1 are often used as though they are interchangeable, they do have different meanings. On balance, the term *generic employability skills* comes closest to capturing the essence of how the debate has evolved. *Generic* implies that what is learned in one context can be applied in others. *Employability* signals a connection to the world of work that is dynamic and long-term in nature. Employability implies qualities of resourcefulness, adaptability and flexibility, and therefore also signals some of the qualities needed for success in work and life as a whole. *Skills* can be taken to subsume the other potential descriptors, and is perhaps the only one of the descriptors that is used widely by both employers and educators in Australia. The term *generic employability skills* will be the most commonly used in the remainder of the report.

1.5   Structure of the Report

Chapters 2 and 3 seek to re-establish the significance of generic employability skills for current policy debate, and to demonstrate the breadth of their basis. Developments in Australia are reviewed in Chapter 2. That chapter distils key findings from the literature on attempts being made to implement generic employability skills in formal education programs in Australia. The discussion explores key implementation issues, including the extent to which instruction in generic employability skills is embedded in general education courses, the extent to which these skills are explicit in statements of objectives, the specific assessment of these skills, and reporting on their achievement. Separate analyses are provided for the schools, VET and higher education sectors, along with issues they face in common. Overseas developments are reviewed in Chapter 3, and the key features of national frameworks of employability skills are identified.

Chapter 4 analyses the various national frameworks and relates these to the Key Competencies advocated for Australia by Mayer (1992a). The differences between the Australian and overseas frameworks are analysed, and the views of Australian employers summarised. Based on these analyses Chapter 4 then develops an emergent set of employability skills as a basis for further debate.

Chapter 5 draws on the relevant literature and good practice examples to propose options that would enable the development of employability skills to be more deeply embedded in Australian education and training.

The report concludes with Chapter 6 which summarises what is known and confirmed about Australian industry and employers' views of generic employability skills for

high performance workplaces and their relationship with policy development in education and training, and what is contested and requires further investigation.

2. DEVELOPMENTS IN AUSTRALIA

This chapter distils key findings from the literature on attempts being made to implement generic skills in formal education and training programs in Australia. It explores key implementation issues, including the extent to which instruction in generic skills is embedded in general education courses, the extent to which they are explicit in statements of objectives, evidence for the assessment of these skills, and examples of reporting. An understanding of the factors influencing implementation since the early 1990s is important for identifying the next key stages in the debate.

The chapter commences with a brief overview of developments in Australian education and training as a whole (2.1), and the evolution of employability skills (2.2). It then examines the development of employability concepts and how these have been implemented in three main sectors:

- Schools

- Vocational education and training (including employment-based training)

- Higher education

2.1   Overview of Changes in Australian Education and Training

Australia has moved more rapidly over the past decade than have most OECD countries towards a market-oriented, demand-led education and training system. It is especially noteworthy that these substantial structural changes, and the adoption of a national framework for education and training, have occurred within a federal political system in which the prime constitutional responsibility for education lies with the States.

In Australia there have been numerous reports and policy developments aimed at strengthening the linkages between education and the labour market, and stimulating the development of training and learning cultures within enterprises (eg Australian National Training Authority, 1998). While many of these policies have been similar to those under way in other OECD countries, there have been some distinctive elements to the overall policy framework in Australia and the way it has been applied.

What is interesting about the Australian policy approach is the attempt to incorporate some of the key elements of tightly coupled systems linking education and training and the labour market (a national policy and qualifications framework; and an increasing role for employers) with elements of more loosely coupled systems (an emphasis on user choice; development of a private training market; creation of multiple pathways; and flexible delivery systems).

One of the key policy mechanisms for strengthening the linkages between education and the labour market has been the attempt to embed key employability skills more deeply in curricula and student assessment. As detailed later in the chapter, the extent of embedding has varied markedly among the school, VET and higher education sectors.

Where Key Competencies have been trialled in the school sector, the greatest attention has been focused on the post-compulsory years. Some difficulties have been experienced. These have included a failure to link the specification of the Key Competencies to curricula, some difficulties with the conceptualisation of the Key Competencies, and the specification of levels that did not relate to the levels of attainment that were being used in other dimensions of curricula.

There has been an increasing recognition that the VET sector is important in preparing and maintaining the skills base of the Australian workforce, and for this reason successive recent governments have been prepared to invest in the sector. Various bodies have been established to coordinate the sector at both State and national levels. More so than in the school sector or higher education, there have been strong moves in the VET sector towards curricula specified in terms of outcomes to be achieved rather than as inputs of content and time served.

Higher education has moved from being an elite to a mass enterprise, as increasing proportions of the population have access to it. Although there is an accepted tradition that university courses should equip graduates with a range of higher-order intellectual skills, the formal and explicit incorporation of these attributes into university policies and courses is a recent phenomenon. Many Australian universities have articulated sets of generic skills that they expect their graduates to demonstrate. There are differences in the generic skills that have been identified and in the extent and means by which they have been embedded in courses, assessed, and reported. The university sector is more decentralised and has greater institutional autonomy than either schools or VET, and sector-wide views are less readily apparent.

The key institutional developments that require a re-appraisal of the place of generic employability skills relate less to what is happening within each sector, and more to what is happening at the boundaries where they intersect. The sectoral boundaries are becoming more blurred through developments such as VET in schools, dual sector programs and institutions in VET and higher education, credit transfer across sectors, and recognition of prior learning. The increasing emphasis on student mobility and flexible pathways requires the main education and training sectors to develop common frameworks and terminology, including employability skills.

2.2   Development of Employability Skills in Australia

Three major reports that led to the definition and description of Key Competencies in Australia are generally recognised to be the Karmel, Finn, and Mayer reports (Australian Education Council. Finn Review Committee, 1991; Australian Education Council. Mayer Committee, 1992b; Quality of Education Review Committee, 1985). The Carmichael Report is also significant for the contribution that it made in establishing the structural framework particularly for Vocational Education and Training (Employment and Skills Formation Council, 1992). These developments are reviewed below.

Quality of Education Review Committee

Among its terms of reference, the Quality of Education Review Committee (1985, pp 204-5) was required to provide advice on means for "the attainment of appropriate standards relevant to subsequent employment opportunities and improved preparation for tertiary education" for secondary students. The terms of reference also included mention of the "increasingly competitive, including internationally competitive environment" of Australian industries into which school leavers would move.

In addition to recommendations on basic skills achievement and testing, the Committee exhorted the government to "sustain its efforts in curriculum development with particular reference to communication skills, mathematics, science, technology, the world of work and Australian studies." (Recommendation 10, p.203). This report, with its focus on identifying and reporting key outcomes of schooling, established the areas that became the focus of later recommendations of the Finn and Mayer Committees.

The Finn Review Committee

The Finn Review (Australian Education Council. Finn Review Committee, 1991) was asked, among other wide ranging terms of reference, to report on "appropriate national curriculum principles designed to enable all young people … to develop key competencies" (p.2).

This Committee undertook its work at a time of major social, educational, and employment-related policy change. Major policy themes that it identified included:

- a desire for a better educated and more highly skilled society with an interest in lifelong learning;
- the need to reassert the importance of vocational education and training and to raise its status relative to academic education; and
- an emphasis on education and training outcomes, that is the achievement of competencies. (p.12)

The Committee sought to strengthen the vocational orientation of secondary schooling, but within a comprehensive model of schooling that met the needs of all young people. To this end the Committee supported defined areas of competence that were to be "related to a young person's initial and lifelong employability" (p.54).

The Committee drew attention to changes in the skill demands of industry and of rapid change in the Australian economy as a result of structural economic change nationally and international competition. It noted that "the most successful forms of work organisation are those which encourage people to be multi-skilled, creative and adaptable" (p.6). Because of changing technologies and changing economic circumstances, they argued that "the ability to continue learning and acquiring new or higher level skills will be fundamental". As a consequence "the emphasis of our training system has to be both on the acquisition of the specific skills for the job/trade and on flexibility" and that flexibility "requires a strong grounding in generic, transferable skills" (p.55).

The Committee further noted a recognition by employers that students required "a foundation of basic skills and a range of broad skills and attributes which are generally relevant to the world of work without being occupation- or industry-specific" (p.6).

The Committee recommended that emphasis be given to six key areas of competence:

Language and Communication

Mathematics

Scientific and Technological Understanding

Cultural Understanding

Problem Solving

Personal and Interpersonal

(Australian Education Council. Finn Review Committee, 1991, p.58)

The Committee then recommended that:

All post-compulsory education and training programs for the 15-19-age cohort should include, within their overall expected outcomes, appropriate levels of competence in the six Key Areas. (p.58)

The Committee recommended that an expert group be established to undertake more detailed work on defining and assessing the initial list of proposed Key Competencies. The work required of that group was to elaborate the basic concept of Key Competencies, to operationalise it for the school and training sectors, to specify levels of achievement, and to recommend arrangements for assessing and reporting on student achievement. That group was chaired by Eric Mayer and reported in 1992.

The Mayer Committee

Among other tasks, the Mayer Committee was required to:

- survey work under way in the school and TAFE/training sectors in the areas of language and communication and mathematics and to advise on the feasibility of brining it together to develop useful national profiles in these areas of competence; and

- [advise on] the feasibility of a similar exercise in relation to each of the other areas of competence.

(Australian Education Council. Mayer Committee, 1992b, p 77)

The Mayer Committee used its own expertise, consulted with industry and with educators in the school and VET sectors, and to a lesser extent with the higher education sector, and finally undertook a validation exercise which involved further consultations with industry.

The extensive involvement of the school and VET sectors reflected a concern at the time with post-compulsory education and training, mainly for 15 to 19 year-olds, and

with the pathways available to them in moving from compulsory education to employment or further study.

Definition of competence: The Mayer Committee accepted the National Training Board's definition of competence.

> The concept of competence adopted by the National Training Board includes these elements: "it embodies the ability to transfer and apply skills and knowledge to new situations and environments. This is a broad concept of competency in that all aspects of work performance, not only narrow task skills, are included."
>
> (Australian Education Council. Mayer Committee, 1992a, p.7, citing the National Training Board, 1991)

The Key Competencies: The requirements of Key Competencies were defined by the Mayer Committee as follows:

> Key Competencies are competencies essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key Competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that the Key Competencies are not only essential for participation in work, but are also essential for effective participation in further education and in adult life more generally.
>
> (Australian Education Council. Mayer Committee, 1992a, p.7)

The Committee summarised their requirements for Key Competencies by saying that they must:

- be essential to preparation for employment;
- be generic to the kinds of work and work organisation emerging in the range of occupations at entry levels within industry rather than occupation- or industry-specific;
- equip individuals to participate effectively in a wide range of social settings, including workplaces and adult life more generally;
- involve the application of knowledge and skill;
- be able to be learned; and
- be amenable to credible assessment.

In discussing values and attitudes and other personal qualities, the Committee said:

> Both the principles and characteristics the Committee has used to construct the set of Key Competencies preclude the inclusion of values and attitudes.
>
> (Australian Education Council. Mayer Committee, 1992a, p.13)

It is on this point that differences between the Mayer Key Competencies and comparable schemes developed elsewhere, for example the SCANS workplace know-how, emerge. Other schemes, but most notably the United States and Canadian ones, have included generic skills that are based upon attitudes and dispositions. The Mayer Committee also noted that in their initial submission, industry and community groups had advocated the inclusion of attitudinal and dispositional characteristics.

One of the Key Areas of Competence recommended by the Finn Review Committee, Cultural Understanding, was discussed by the Mayer Committee, but eventually was not included as a Key Competency.

The Key Competencies that were recommended by Mayer are shown in Table 2.1.

Table 2.1   The Mayer Key Competencies

Key Competencies	Descriptors
Collecting, analysing and organising information	The capacity to locate information, sift and sort the information in order to select what is required and present it in a useful way, and evaluate both the information itself and the sources and methods used to obtain it.
Communicating ideas and information	The capacity to communicate effectively with others using a whole range of spoken, written, graphic and other non-verbal means of expression.
Planning and organising activities	The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring performance.
Working with others and in teams	The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of others and working effectively as a member of a team to achieve a shared goal.
Using mathematical ideas and techniques	The capacity to use mathematical ideas, such as number and space, and techniques, such as estimation and approximation, for practical purposes.
Solving problems	The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the desired solution are clearly evident, and in situations requiring critical thinking and a creative approach to achieve an outcome.

Using technology	The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.

Source: (Australian Education Council. Mayer Committee, 1992a, pp.8-9)

Levels of performance: Some submissions to the Committee argued for a single benchmark level for beginning employees. The Mayer Committee recommended the establishment of three performance levels for each key competency. These levels were described (p.18) as:

- Performance Level 1 describes the competence needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity and to make judgements about the outcome against established criteria.

- Performance Level 2 describes the competence needed to manage activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.

- Performance Level 3 describes the competence needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcomes.

Acceptance and implementation of the Key Competencies: In consultations with stakeholder groups, the Committee reported that some reservations had been expressed about each of the Key Competencies, but 'Using Technology' and 'Using Mathematical Ideas and Techniques' attracted the most criticism. These were often perceived to be specific skill areas rather than generally applicable skills. In order of importance, these were also ranked lowest.

Performance levels attracted substantial and conflicting criticism. Some felt that there were too many levels, others that there were too few. Much of the criticism was directed at the descriptions of the levels: some felt that the levels were described in terms that were too abstract and that could not readily be operationalised.

In addition, there was some support for the addition of a category of the basic skills of literacy and numeracy (Australian Education Council. Mayer Committee, 1992a, Appendix 3, pp.86-95).

The recommendations of the Mayer Committee were a pivotal point in the specification of generic Key Competencies. Their implementation in the school, VET and higher education sectors is now discussed.

2.3   Implementation in the School Sector

This section outlines a recent history of curriculum development that has formed the context into which the Mayer Key Competencies were introduced. The context is one in which there has been a general trend since 1980 to nationally consistent approaches to curriculum specification, and to a learning outcomes orientation in curriculum rather than one based on specified inputs of content or time allocated.

Summary of curriculum developments in the States and Territories

In the early 1990s and subsequent to the endorsement of the Hobart Declaration, a proposal to develop a common national curriculum framework – the National Statements and Profiles – emerged. In 1993 the Australian Education Council (AEC) stopped short of endorsing the framework, and referred it to individual States and Territories for consideration. Some States continued the momentum that had built during the development of the framework, while others, for various reasons which included industrial action and concern about some of the proposed outcomes, implemented only components of the framework.

While the outcomes approach embodied in the National Statements and Profiles might have been fertile ground for the implementation of the Key Competencies, some difficulties had been experienced with the Profiles outcomes associated mainly with the workload implications for teachers and with the language in which they were couched. Similar difficulties relating to both teacher workload and to the descriptions of the levels of performance were experienced with the Key Competencies. For a very useful summary of curriculum developments in each State and Territory associated with the implementation of the National Statements and Profiles and the Key Competencies between 1986 and 1996, see Lokan (1997). These developments are summarised in Appendix 1.

Despite some difficulties, it appears that in most States and Territories, considerable progress has been made with reporting against profiles across most Key Learning Areas and that it may be timely to review the conceptualisation of the Key Competencies, the ways in which they are described, and the performance levels specified for them to bring them into closer alignment with the ways in which other curriculum outcomes are assessed. The release of the Adelaide Declaration may be seen as a pivotal policy statement in revitalising debate on generic employability skills in the school sector.

The National Goals for Schooling

The Adelaide Declaration, the *National Goals for Schooling in the Twenty-First Century*, was endorsed by MCEETYA in 1999 (Ministerial Council on Education Employment Training and Youth Affairs, 1999). It recognised the changes in Australia's economic and social circumstances, and has led to a greater emphasis on information technology and vocational education, and has a strong focus on educational outcomes.

The National Goals seek to ensure the employability of those who pass through Australia's school systems, but they go beyond employment-specific skills. The preamble to the Adelaide Declaration notes the importance of schooling in providing a basis for students' participation in the social, cultural, and economic dimensions of Australian society and acknowledges the need for lifelong learning to enable continued participation.

The Adelaide Declaration incorporated directly all the Mayer Key Competencies and in addition specify achievements in personal, interpersonal, ethical, civic, and employment-related dimensions of learning. These aims are most evident in Goals 1.5, 2.3, and 2.4.

Elements of the National Goals for Schooling are evident in curriculum policies and guidelines that have been developed in the States and Territories. The National Goals, along with the substantial development since the mid-1990s of Vocational Education and Training in Schools, have helped to revitalise debate about the role of secondary schools in preparing young people for the world of work.

More recently, the report of the Prime Minister's Youth Pathways Action Plan Taskforce has urged relevant authorities to accelerate the implementation of the National Goals, including a recommendation that:

> Commonwealth, State and Territory Governments in consultation with key industry organisations and the Australian National Training Authority develop a nationally agreed set of key employability competencies to reflect changes in the workplace, emerging new industries over the last ten years and projected changes to the year 2010.
>
> <div align="right">(Eldridge, 2001, Recommendation 2)</div>

The time appears to be ripe for this significant national debate on the role of schooling to be re-energised.

Approaches to assessing and reporting key competencies in the school sector

In a review of the national pilot program to test the teaching, learning, assessment, and reporting on the Key Competencies in the school sector, four alternative models for the assessment of Key Competencies were posited (MCEETYA Schools Taskforce. Working Group on Key Competencies, 1996). These were:

- an inferred model in which achievement of the Key Competencies was based on inferences drawn from students' performances in subject assessments;

- a parallel model in which teacher judgements were made on students' attainment of the Key Competencies based upon their separate assessment of the Key Competencies along with subject based assessments;

- a separate tasks model in which the Key Competencies are assessed through a set of common specified tasks; and

- an integrated model in which subject assessment is broadened to include specific reference to the Key Competencies.

Each of the above approaches were found to impose an additional burden on teachers who were already finding curriculum-specific assessment and reporting requirements taxing. However, the report also canvassed other options that included components of the above models (MCEETYA Schools Taskforce. Working Group on Key Competencies, 1996, pp.129-131). Since that time however, the assessment and reporting requirements of outcomes profiles appear to have been incorporated into school practice.

Two approaches to the assessment of students' achievements against the Key Competencies appear to be particularly productive. These are a teacher judgement approach reported by McCurry and Bryce (1997) and a portfolio approach that subsumes other techniques developed and tested by the National Industry Education Forum (2000).

Another approach, that appears not to have been trialed in the school sector, is the 'separate tasks model' proposed by the MCEETYA Schools Taskforce (1996). This model and the options described above, are discussed further in Chapter 5.

2.4   Implementation in the VET Sector

Vocational education and training has been and remains primarily a State responsibility. Until the late 1980s, there had been little co-ordination of the sector on a national basis. The sector has undergone very considerable change over the past decade. The major changes have included the establishment of the Australian National Training Authority (ANTA) in 1995, greater national co-ordination of the sector, curriculum change and new course delivery strategies, and the creation of an open training market with both state funded and private providers.

The trend, noted in relation to the school sector, towards curricula specified in terms of outcomes to be achieved has been even more marked in the VET sector. At a time when Ministers for education and training were seeking ways of prescribing outcomes from the sector, competency-based training was endorsed. This fits well with industry's requirements that people emerge from training programs with the skills that are required on-the-job. Industry-specific skill requirements are identified in consultative processes through Industry Training Advisory Bodies (ITABs).

A further and major change in the VET sector during the 1990s has been the creation of an open training market in which the principle of user choice is embedded.

It was within these substantial structural changes in VET that the Key Competencies were introduced into the sector. The scope and pace of change have caused some implementation difficulties. In particular, the concept of generic competencies appears to have become confused with vocational competencies, the latter being industry-specific and often quite narrow in focus while the former are meant to be very broadly applicable.

Key competencies in VET

Jasinski (1996) found that there was a diversity of understanding of Key Competencies within TAFE. This was portrayed positively as representing the

different manifestations of Key Competencies in different training areas, but it may also have indicated a lack of conceptual clarity in the definition of Key Competencies. She advocated an extension of the scope of the Key Competencies to include "entrepreneurialism, learning competencies, and intra-personal competencies". Reynolds and van Eyk (1996) reported that there was little understanding of Key Competencies and that the term competency in both vocationally-specific and generic senses created confusion. Down (2000) also found that some confusion arose between industry-specific competencies and Key Competencies. She reported that Key Competencies were not prominent in training packages, and that they were seen desirable but optional components of training packages. At that time, support materials for the developers of training packages did not include advice on the implementation of Key Competencies – a matter that has since been rectified.

Other research conducted within TAFE (eg Curtis, 1996; Lawson & Hopkins, 1996; Russell, 1996) found evidence that the Key Competencies were recognised and accepted as valuable, but they also reported some limited understandings of the generic nature of the skills and of ways in which they might be embedded within training programs.

Jasinski (1996) reported that there was little support within the VET sector for the use of the proposed levels for the Key Competencies. Down (2000) found that the assessment levels proposed by the Mayer Committee for the Key Competencies were confused with levels of the Australian Qualifications Framework (AQF).

However, Keeves and Kotte (1996) demonstrated that the measurement of the Key Competencies was possible. They suggested that the performance levels proposed by the Mayer Committee could be assigned greater meaning by using the Biggs and Collis (1982) SOLO taxonomy as an organising framework and concluded that:

Research and development studies in these three areas of competence – mathematics, science and technology, and language – have the capacity to transform in a meaningful way the movement towards certification in terms of key competencies that the Mayer Committee has proposed. (p.116)

This proposition provides a basis for an expectation that meaningful measurement and reporting can be extended to other generic competencies.

Key competencies in workplace training

Workplace education and training is a particularly important component of the VET sector as a whole. However, it is a very diverse setting in which education, training, and development occur for a wide range of people at very disparate levels from junior to professional and senior executive ranks. Many young people move directly from school into junior positions (Smith, 2000). Apprenticeships and traineeships provide pathways into work for substantial numbers of young people. Enterprises recruit graduates who are expected to move quickly into positions of significant responsibility. On-the-job training and development provides a mechanism for the induction of new employees and for established employees to upgrade their skills and to disseminate organisational knowledge. Some workplace training uses VET sector providers extensively, some involves a modest interaction with VET sector providers,

but some companies have extensive training and development programs which have no engagement with the formal components of the sector. Thus, at least three distinct groups of employees are in focus in workplace learning, their needs are rather different, and different approaches may be required to meet those needs. In this section, the emphasis is on training and development that does intersect with formal VET sector arrangements.

Workplace learning has become a significant feature of initial vocational education and training in Australia, with the numbers of new apprenticeships having grown from 136,000 in 1995 to 295,000 is December 2000, with an estimate that there is a potential for Australian industry to support 400,000 such training agreements (National Council for Vocational Education Research, 2001). Most of the growth has been a result of increases in the number of shorter, typically one year, traineeships. New apprenticeships, which subsume both traditional trades apprenticeship arrangements and the more recently introduced traineeships, include on-the-job learning and may also include an off-the-job learning component. The latter may be provided by a TAFE college or by an RTO.

Experience with generic skills in workplace training

Generic skills are recognised as being important, for individuals, for enterprises, and for industry (Hase, 2000; O'Keefe, 2000). Hase (2000) described the importance of teamwork, creativity, learning to learn, and self-efficacy in the development of individual and organisational capability. The conception of capability described by Hase reinforces the importance of Key Competencies as developed by the Mayer Committee (Australian Education Council. Mayer Committee, 1992a) but also suggests that they need to be extended if high performance workplaces are to develop more broadly.

Where training packages are being used within firms, the research suggests that Key Competencies are either absent from training packages or are largely ignored by those delivering training (Down, 2000). Schofield (1999) noted the lack of attention paid to generic skills in vocational training and recommended that this was one aspect of the National Training Framework that required remedial action (p.77).

Some possible explanations for the modest attention in training programs to Key Competencies emerge from the literature. Harris, Simons and Bone (2000) suggested that training in most enterprises is driven by a form of human capital theory in which enterprise-specific skills, which provide the most immediate return on training investment, are emphasised while more generic skills, which are perceived to be of greater benefit to individuals and industry as a whole, and whose benefits are harder to capture by the firm, are given lower priority. However, in some (often large) companies, training and development is seen as an element of competitive advantage and these enterprises are more likely to develop in-house programs that, while developing both industry-specific and generic skills to a high level, may not use the same language to describe their programs and outcomes as do those in the formal VET sector. Others also support the view that there are differences among the interests of the stakeholders and that these differences influence the nature of the training that is provided (Robertson, Harford, Strickland, Simons, & Harris, 2000).

Smith (2000) noted that apprentices were particularly dependent on formal off-the-job learning, whereas trainees were able to acquire much of their knowledge by close observation on-the-job. She also found that trainees and beginning employees without contracts of training depended upon informal mentoring from significant adults who were often either parents, older and more experienced siblings, or supervisors. For such workers, their own social networks were important sources of learning. Thus, even though there is little evidence that generic skills are being taught in any formal way, these young workers are able to divine this knowledge through reflection, with the assistance of mentors, on their experiences of work. However, Smith cautioned that the young workers of her study had all made the transition from school to full time work successfully, and therefore, their experiences cannot be generalised to all young people leaving school.

Dymock and Gerber (2000) found that young people who had moved from full-time training courses to work had similarly picked up important employability skills. These people developed strategies that involved knowing who to approach for assistance in order to learn new skills or to adapt skills learned in their training courses to their work environments. It could be said that these workers had learned how to learn, and had learned to use learning resources, including workplace peers and supervisors, in order to enhance their performance.

The above analyses suggest that most young employees do make a successful transition to the world of work and that for most, their workplaces or the social networks around individuals, facilitate the learning of necessary employability skills. For experienced employees, training and development programs include generic skills which are valued in their enterprises, but that the programs may not use the same language as the formal VET sector to describe these skills. This suggests that there is scope to improve the framework in which generic employability skills are defined and recognised.

2.5   Implementation in the Higher Education Sector

Few universities use the term Key Competencies to describe their implementation of generic skills. Instead a range of other terms including abilities, graduate qualities, generic capabilities, and graduate attributes are used. The use of alternative terms is justified on several grounds. First, these institutions have selective entry requirements for a limited number of places, so their students can be expected to have highly developed skills on entry. Second, higher education is a more costly activity than other levels of education on a per capita basis and one should therefore expect higher outcomes compared with other sectors. Third, higher education institutions are concerned with the production of persons who will assume positions of responsibility in the professions shortly after graduation. For these reasons, graduates of higher education programs may be expected to achieve higher levels of performance on similar competencies, or perhaps to demonstrate a different set of competencies.

Generic skills schemes in higher education

In this section case studies of several universities are reported, examining in particular the definition of generic employability skills, approaches taken to their implementation, and methods for their assessment and reporting.

The University of South Australia

Since 1995 the University of South Australia has been involved in the development of a set of seven Graduate Qualities. These are generic in that they are believed to apply across all discipline areas of the university and to be important in enabling students to take their places in work and society upon graduation. It is intended that a graduate of the University of South Australia:

- operates effectively with and upon a body of knowledge of sufficient depth to begin professional practice;
- is prepared for life-long learning in pursuit of personal development and excellence in professional practice;
- is an effective problem solver, capable of applying logical, critical, and creative thinking to a range of problems;
- can work both autonomously and collaboratively as a professional;
- is committed to ethical action and social responsibility as a professional and citizen;
- communicates effectively in professional practice and as a member of the community;
- demonstrates international perspectives as a professional and as a citizen.

The University has sought to embed the Graduate Qualities systemically in all courses and individual subjects. Since 1998 course descriptions have been re-written to reflect the Graduate Qualities and individual subject outlines have similarly been re-written with a requirement that a quantitative profile of Graduate Qualities be included. This is intended to show the relative emphases on each of the Graduate Qualities. These figures can be summed across all subjects in a course to check that an appropriately balanced profile has been developed through the course.

In order to support academic staff in implementing the Graduate Qualities, indicators of achievement of each of the Graduate Qualities have been developed and advice has been prepared on ways in which different approaches to teaching and assessment might enhance students' acquisition of these qualities (University of South Australia, 2000).

During 2000, the University of South Australia undertook a Record of Achievement (Graduate Qualities) project to enable students to document their achievement of each of the Graduate Qualities. This is an instance of the portfolio approach to the assessment and reporting of generic skills. Students' comments indicated that some thought that they had substantially achieved these qualities before commencing their courses and that for some, the act of documenting their achievement of the Graduate

Qualities was a factor in their appreciation of the importance of these attributes (Feast, 2000).

Together, the data collected and the students' comments may indicate that, despite the systemic approach taken by the University in seeking to embed Graduate Qualities in all subjects and courses, more time will be required for these attributes to become embedded effectively in subjects and courses.

The Australian Technology Network Graduate Capabilities Project

The five Australian Technology Network (ATN) universities, Curtin University of Technology, Queensland University of Technology, Royal Melbourne Institute of Technology, University of South Australia, and University of Technology Sydney, undertook the project *Generic Capabilities of ATN University Graduates*. The purposes of this project were to produce frameworks to: identify and define graduate capabilities within discipline contexts; review curricula to assist in the development of graduate capabilities; design learning environments; and design valid assessments of graduate capabilities.

Each of the universities involved in the project had developed its own approach to the definition and implementation of graduate capabilities, under a variety of labels. In coming together, rather than develop a common set of definitions of graduate capabilities, they agreed on a common framework within which each institution's (and discipline area's) preferred collection of capabilities would be implemented.

The report of the project group recommended that three principles ought frame the definition, development, and implementation of generic capabilities:

- that generic capabilities should be defined at institutional and course levels;
- that their implementation and assessment should be discipline based; and
- that a variety of teaching and learning approaches is desirable in students' acquisition of these skills

(Bowden et al., 2000)

While the latter two recommendations are well founded in the literature (see, eg Clanchy & Ballard, 1995), the first poses a problem in attempts to use graduates' attainment of generic skills as a comparative performance indicator either of individual graduates or of institutional effectiveness.

The Graduate Skills Assessment

In 2000 ACER was commissioned by DETYA to produce a test of generic skills that could be assessed at university entry and exit levels. Following consultation with university and employer representatives and other stakeholders, four domains were identified for the initial test:
- Written Communication
- Critical Thinking
- Problem Solving

- Interpersonal Understandings

At entry level, universities may use the test diagnostically to identify students who are likely to have difficulty with writing or quantitative problem solving. At exit level, results of the test may be used as an additional criterion for entry into post-graduate courses or as an indication of generic skills to an employer. By comparing test results at the time of entry and exit, universities can obtain an indicator student growth associated with the university experience.

During 2000 several thousand students from 20 universities sat for the test. Statistical analyses of the results indicated appropriate test component reliability, as well as discrimination between test components. During 2001 some large employers have expressed interest in the GSA and are looking at its potential in their graduate recruitment programs.

The GSA is significant for the wider debate about generic skills for two main reasons. First, the GSA has shown that it is possible to develop items that measure competence in the domain of Interpersonal Understandings, an area that is widely recognised as important in the workplace. Second, the GSA data have shown that it is possible to report students' performance in each of the four main domains along scales that distinguish the level of performance (using three broad levels with detailed commentary on each).

Prospective developments in the GSA include other skill domains identified by university educators and graduate employers as important to work success, including Information Literacy, and Personal Management.

Summary of higher education developments

Although there is an accepted tradition that university courses should equip graduates with a range of higher-order intellectual skills, the formal and explicit incorporation of these attributes into university policies and courses is a recent phenomenon in Australia. However, there is relevant experience overseas over a longer timeframe. For example, Alverno College in the United States has incorporated generic abilities in its curriculum development framework for over 25 years and has researched the attributes of its graduates extensively (Alverno College Institute, 2000).

The dialogue that has occurred between the business and higher education communities, for example through the Business Higher Education Round Table, appears to have triggered some action within universities to use generic skills as an overt outcome and to respond to the skills requirements of the business community. As students perceive the importance of these skills and seek to document them, either through portfolios or through formal testing arrangements such as the Graduate Skills Assessment project, they will present their credentials to the business community as they seek employment. In this way, graduates are agents in the feedback loop between universities and industry. However, means to improve the responsiveness of this process may be required.

3. DEVELOPMENTS OVERSEAS

The purpose of this chapter is to indicate the significance of generic employability skills and to demonstrate the breadth of their basis in countries that are comparable to Australia. This section will review major developments in the United States, the United Kingdom, Canada, and the European Union that define generic employability skills as identified by industry and employers. The purpose is to map the major concepts that have figured these schemes, demonstrate their common elements, and identify emergent skill sets.

3.1   Developments in the United States

In the US, the Report of The Secretary's Commission on Achieving Necessary Skills, (subsequently referred to as the SCANS Report) was released in 1991 (SCANS, 1991). The Commission's remit was to identify the skills required for employment, to propose levels of proficiency in them, to suggest effective ways to assess them, and to disseminate its findings. On the basis of analyses of the skills required in a range of jobs and in-depth interviews with workers from five major industry groups, the report did define what it called "workplace know-how" which comprised a set of five workplace competencies and three foundation elements.

The workplace competencies were an ability to productively use:

- resources;
- interpersonal skills;
- information;
- systems; and
- technology.

The foundation comprised three elements:

- basis skills;
- thinking skills; and
- personal qualities.

The rationale for SCANS and the structure of workplace competencies that it proposed have been influential not just in the USA but in a range of other countries including Australia. The rationale was essentially that in a highly decentralised school system oriented to general education such as exists in the United States, there needs to be a structure for curriculum development and assessment that provides students with broad skills needed for the workplace. As in many other countries the early 1990s was a period of high youth unemployment in the USA, and there were considerable concerns both about this and the general competitiveness of American industry.

Appendix 2 provides details of the structure and continuing development of SCANS in the United States, and more recent work such as the 21st Century Workforce Commission (2000).

The latter report represents a departure from the SCANS emphasis on employment related generic skills towards IT specific skills. 21st century literacy subsumes some elements of workplace know-how including thinking skills, teamwork, and proficiency in using technology. However, the core thrust of the document is toward engaging workers in IT, and other elements of the proposal are strategies for achieving this. In common with the original SCANS approach, the implementation strategies include elements of community partnerships involving schools and business and school reform. This document reveals a greater commitment to giving the notion of lifelong learning substance than was evident in SCANS.

O'Neil, Allred & Baker (1997) reviewed major US schemes to identify workforce readiness skills, including SCANS and the Michigan Employability Skills Task Force. Most of these generic skills schemes were based on the views of industry leaders and some educators. Importantly, the review by O'Neil et al showed that they been validated in a series of studies that have examined the tasks routinely undertaken by workers in a wide range of jobs. Common features in the US skills frameworks include: a core of academic skills; higher order thinking skills adapting to change, problem-solving, creativity, decision-making, learning how to learn; interpersonal and team skills -- communication, cooperation, negotiation/conflict resolution, leadership, and dealing with diversity; and personal characteristics and attitudes.

The US context is rather different from Australia's and from that of the UK (see below). In the US, there is much greater local autonomy and a reduced role for central government in policy implementation. One consequence of this is the lack of a national qualifications framework and therefore some policy implementation options that exist in Australia and the UK are not available in the US. This may explain the greater emphasis on dissemination rather than implementation strategies for the SCANS workplace know-how skills.

Box 2: Views of US industry

The US Chamber of Commerce: The US Chamber of Commerce has undertaken to promote a skills-based portable document process in which individuals can record and continuously update their record of skills achievement. (This is similar to the Department of Labor's Career Transcript System).

The National Alliance of Business: The lack of a national US qualifications framework has led the NAB to develop a qualifications framework for certification in several industries, including information technology. Over recent years, numerous certificates have been developed by many providers and this has led to confusion in the industry about what constitutes an appropriate qualification. The NAB is seeking to establish a set of criteria to recognise both the appropriateness and quality of the certification available. The NAB took a lead in the development of the Workforce Investment Act (WIA). This legislation has been enacted and local business-led Workforce Investment Boards have been established. These in effect act as brokers, identifying education and training needs, promoting workforce development in local business sectors, and engaging and monitoring the performance of education and training providers in meeting these needs.

The National Association of Manufacturers: The NAM has encouraged member enterprises to invest 3% of payroll in education and training for their workforce.

> The NAM has also established, along with its training partner General Physics, a virtual university (NAMVU) to provide effective and convenient courses for employees. NAMVU courses result in certificates, although the lack of a national qualifications framework leaves some doubt about the value of such certificates in the employment market. The NAM will also use its virtual university as a means of providing basic adult education and GED certification in order to enhance the skill levels of incumbent workers.
>
> *National Retail Federation*: The NRF has sought to establish standards in retail and personal service industries and has developed both school-to-work and unemployment-to-work transition programs.

US industry is represented by a variety of organisations, and many of these are involved in projects building upon the work of SCANS (see Box 2 for examples).

The initiatives described in Box 2 reflect the absence of strong national approaches in education and training and possibly a reduced commitment to the original SCANS workplace know-how skills, since many of the initiatives appear to be directed at addressing current skills shortages without the benefit of a skills recognition framework. There appears to be a return to a focus on job-specific skills independent of a broader skills environment. This stands in contrast with the situation that has emerged in the UK.

3.2   Developments in the United Kingdom

In the UK, the situation in Scotland is slightly different from that in England, Wales, and Northern Ireland. However, there is an intention to maintain a high level of commonality and so a single UK approach to generic employment related skills is presented in this section, referring to differences where they occur.

The first point of difference lies in the terms used to describe employment related generic skills. In Scotland, the term *core skills* is used, while in England, Wales, and Northern Ireland, the terms *key skills* and *basic skills* are used and have replaced the originally used term *core skills*.

In England, the original list of core skills included:

• communication

• problem solving

• personal skills

• numeracy

• information technology

• competence in a modern (foreign) language

In Scotland, competence in a modern foreign language was excluded.

These skills were to be integrated into instruction for students in the 16-19 year age group. Thus, they were framed primarily as entry level skills for the workforce and did not form part of a lifelong learning agenda.

A significant shift in focus occurred in 1999 (Moser, 1999). Key skills were defined and are similar to the original list of core skills, with the removal of "competence in a modern foreign language" and the inclusion of "improving own learning and performance." (Note that the removal of a requirement to learn a foreign language is counter to trends in the European Union). A second important change was a focus on the education and training needs of adults as well as young people entering the workforce. The inclusion of adults as learners and reference to "improving own learning" reflect the move towards lifelong learning. The literacy and numeracy components of the key skills were recognised as basic skills at Entry Level and at Levels 1 and 2 of the National Qualifications Framework.

In Scotland, the core skills list is similar, but omits "improving own learning and performance."

In England, Wales, and Northern Ireland a Key Skills Qualification is available. This is based upon the first three of the key skills which are assessed at the five levels of the National Qualifications Framework. Assessment for this qualification uses both a portfolio of learning tasks or work and an externally administered test in each of the key skill areas.

In Scotland, the Scottish Qualifications Authority has established a new Scottish Qualifications Certificate. The new Certificate is a comprehensive record of each learner's achievements. It includes school and college level awards and will include a Core Skills Profile, although it does not include university qualifications.

Throughout the UK, core, key, and basic skills are very closely specified at each level and extensive documentation is available on these skills and their levels of performance. Box 3 summarises the views of British industry on these developments.

More so in the UK than in the USA, multiple pathways are provided from school to work including opportunities for students aged 14 or over to undertake substantial work-based learning as part of their school education. They are able to substitute studies leading to occupational qualifications for some of the otherwise compulsory areas of learning, and students include key skills within their vocational study. The National Qualifications Framework provides a mechanism for equating the levels of performance across the alternative pathways and qualification types that may be undertaken by learners.

The recently established Learning and Skills Council in England and Wales is in the process of introducing a new model for funding learning for those aged 16 and above that includes a concept of "entitlement" to an education and training place. Discussions have been essentially focused on 16-19 year-olds, and have been largely concerned with ensuring an increased supply of appropriate programs, and providing free places. The British Chamber of Commerce has criticised limiting the entitlement to those aged 19 years or less, arguing that all 16-24 year-olds should be entitled to free tuition in pursuing qualifications up to level 3, as recommended by the Skills Task Force. The funding reforms are attempting to embody the notion of "money following the learner", and to include greater incentives for providers of education and training programs to achieve agreed learning outcomes.

Box 3: Views of UK industry

The Confederation of British Industry (CBI) was a prime mover in seeking to have the initial set of core skills recognised in the UK. Since that time, many changes have occurred in the education and training sectors in the UK. These have included major revisions to assessment and the qualifications framework for secondary students, as well as changes to the national qualifications framework that covers vocational and higher education awards. There have also been changes to the administrative arrangements and bodies responsible for the oversight of this framework, the qualifications covered by it, and associated curricula. These changes have occurred in the context of a commitment to realise the rhetoric of lifelong learning.

The CBI has argued for a single nationally coherent qualifications framework that encompasses academic, broad vocational, and employment-specific education and training (Confederation of British Industry, 1998). This framework recognises five levels of achievement for each of the three categories of study and acts to facilitate learning pathways through and between the categories of learning. The CBI argues that the framework must be national in coverage, coherent in that it encompasses all awards, appropriately assessed, and broadly based using all six Key Skills (rather than a subset of them) as the basis for this breadth of coverage.

In several documents, the CBI endorses the Key Skills as forming a sound basis for both the ongoing employability of workers and for recent school, college, and university graduates (Confederation of British Industry, 1999; Confederation of British Industry, 2000a; Confederation of British Industry, 2000b). However, they also want the notion of employability skills to be expanded to include a broader set of individual assets, including values and attitudes related to employment and a broader set of generic skills including modern foreign languages. Further, they want individuals to be able to capitalise on their skill sets by being able to represent themselves and their skills effectively.

However, the CBI has recognised that basic skills are also required by many, especially some mature workers whose initial education did not equip them with these skills and whose continued employment in a changing economy is likely to be under threat. In summary, the CBI continues to endorse firmly the Key Skills, and sees that they must be implemented at all levels of education within a coherent framework.

3.3   Developments in Canada

Canada is a highly decentralised country that lacks a strong tradition of close engagement between employers and educational institutions. Nevertheless during the 1990s Canadian industry started to take major initiatives to bridge this gap. The *Employability Skills Profile* (ESP) has played a key role in this regard. The ESP is seen by many as the conceptualising tool that was missing to move the school system towards redefining its goals, its relationship with the surrounding world, and its methods (OECD, 1998).

The general policy thrust in Canada has been towards fewer demand-side labour-market measures that used to be central to government strategies – for example, direct job creation, wage subsidies, and tax incentives to employers – and much greater emphasis on measures designed to improve the skills and overall employability of workers (Marquardt, 1998). This is true for all age groups, but it is especially so in the case of youth. Governments in Canada have increasingly favoured measures that encourage further formal education or that facilitate school to work transitions.

In this environment, there is evidence that younger workers who have left full-time education with high levels of qualifications are engaging in a high level of self-initiated, career-oriented formal education and training without necessarily drawing on support from employers (Marquardt, 1998). Some observers therefore suggest that it is as important to develop policies that support the efforts of individual young workers to develop their skills through self-initiated training as it is to promote employer-sponsored training. The Canadian emphasis on employability-related skills is increasingly aimed at developing the skills and attitudes required to be an effective lifelong learner.

In the early 1990s the Conference Board of Canada sponsored a series of projects that attempted to respond to the question of educators: "What are employers looking for?" (Conference Board of Canada, 1992). The Conference Board is a forum for leaders from business, education, government and the community, that seeks to address concerns about education in Canada. The projects were organised through the National Business and Education Center, an auxiliary of the Board.

Through research and consultation with employers of all sizes, the Board developed an Employability Skills Profile that identified the generic academic, personal management, and teamwork skills that are required, to varying degrees, in every job (Conference Board of Canada, 1992). Three broad domains of employability skills were identified:

- *Academic skills*: those skills which provide the basic foundations to get, keep and progress on a job and to achieve the best results.

- *Personal management*: The combination of skills, attitudes and behaviours required to get, keep and progress on a job and to achieve the best results.

- *Teamwork skills*: those skills needed to work with others on a job and to achieve the best results.

A noteworthy recent development in Canada is the introduction of the *Employability Skills Toolkit for the Self-Managing Learner*. The Toolkit was developed by the Conference Board in consultation with schools, provincial ministries of education, trainers and HR professionals. The Toolkit provides information on what employability skills are, and the ways that they can be developed and demonstrated at home, in education, work and the community. It is a resource that can be used by learners in developing a portfolio of their generic employability skills.

Further details on the ESF and subsequent Canadian developments are provided in Appendix 2.

3.4   Developments in Europe

Much effort has been exerted throughout the European Union (EU) and in other European countries in attempts to enhance the competitiveness of European industry and commerce. While this focus is necessarily broad, encompassing the availability of capital, taxation reform, legislative frameworks, labour relations, and labour market reform, there is also considerable interest in reforming education systems. In education there are emphases on benchmarking outcomes, quality assurance, and the development of broadly based employability skills. Generic employability skills are described as *schlüsselqualifikationen* (key skills) in Germany and Austria and as *compétences transversales* (broad or transferable skills) in France.

Comparable developments are underway in most European countries and at the EU level as a whole. Some examples are outlined in Appendix 2.

Perspectives from European industry

In order to assess the views of industry leaders in Europe, reports and policy documents developed by two peak European industry groups, the European Round Table of Industrialists and the Union of Industrial and Employers' Confederations of Europe, are reviewed.

The European Round Table of Industrialists

The European Round Table of Industrialists (ERT) proposed the following as generic employability skills:

- mastery of one's native language, including the basics of spelling and sentence structure;
- understanding of the basics of maths and science, particularly to cope with new technology;
- critical thinking: ability to think through a problem or situation, distinguishing between facts and prejudices;
- learning techniques for picking up new skills and adapting to new situations;
- communication skills, including speaking another European language;
- ability to work in a group, team spirit;
- a sense of responsibility and personal discipline;
- decision-making, sense of commitment and willingness to take risks;
- a sense of initiative, curiosity, creativity;
- a sense of professionalism, achieving excellence, gaining competitive edge;
- a sense of service to the community, civic mindedness.

(European Round Table of Industrialists, 1995, p.13)

In the same report, the ERT called for continued development of vocational education, they urged that greater attention be focused on generic skills, for both employability and civic participation, and they identified the early specialisation in

vocational programs as a problem, as it did not achieve the desired broadly based employability skills.

The ERT also identified a gap between what industry required and what schools produced (European Round Table of Industrialists, 1997). The main skill gaps identified are shown in Table 3.1. These skill gaps reflect their earlier (1995) concern with generic intellectual skills and personal characteristics.

Table 3.1   Skill gaps identified among European school leavers

Intellectual aptitudes	Behavioural aptitudes
learning capacity	Initiative, curiosity, creativity and innovation
mastery of own language	flexibility
critical assessment	commitment to decide, to get things moving and to achieve
literacy and openness with the three cultures:	professionalism, excellence, distinctive competitive edge

maths/sciences/technology
    humanities
      economics & social sciences
	communication including languages and team work

Source: European Round Table of Industrialists, 1997

The ERT referred to new forms of work organisation that characterise modern businesses which operate in the new economy (European Round Table of Industrialists, 1998). They cited the example of Nokia as a company that employed a flat management structure and that depended upon the teamwork and creativity of its employees for its high productivity in a very competitive market. The people needed for these new enterprises are "… all-round individuals with strong inter-personal skills, capable of living with uncertainty, keen to search for innovative solutions to complex problems, and committed to Lifelong Learning." (European Round Table of Industrialists, 1998, p.17).

Thus the ERT continued its earlier support for generic employability skills, although by 1998, there is evidence of a greater emphasis on a willingness to continue to learn throughout life. They cited the OECD report "Industrial Competitiveness: Benchmarking Business Environments in the Global Economy" (1997) which showed that in the US, 35 per cent of employees had undertaken work related training, while in Europe the figure was 20 per cent. Thus, the ERT sees lifelong learning as a means of developing competitive advantage through personnel skill development. In addition they sought a greater emphasis on entrepreneurship in education and cited Scottish Enterprise as a successful promoter of the Schools Enterprise Program to develop this attribute.

The Union of Industrial and Employers' Confederations of Europe

The Union of Industrial and Employers' Confederations of Europe (UNICE) argued that successful international competition would depend upon "…a quality workforce with high levels of qualifications and skills that meet [employers'] needs". This in turn is based upon quality foundation learning that produces people who are adaptable. In addition to this foundation, formal education should provide "…soft skills, such as personal and social skills, that are needed in working life." UNICE proposed lifelong learning as a solution to the ongoing skills requirements of industry (The Union of Industrial and Employers' Confederations of Europe, 2000, p.2).

UNICE expressed its concern at the much greater relative productivity growth of the United States compared with Europe (The Union of Industrial and Employers' Confederations of Europe, 2001). UNICE presented OECD figures that showed a 40 per cent growth in business employment in the United States since 1980, compared with 5 per cent in Europe. UNICE attributed the advantage of the United States to many factors, including economic and legislative, but did clearly identify the superior access to information and communications technology (ICT) skills and infrastructure as a key advantage of the United States.

They also reported that wage dispersion, as a function of qualification, was relatively poorer in most of Europe compared with the United States and therefore that there was an insufficient incentive for employees to upgrade their skills.

UNICE advocated both improved basic education and support for lifelong learning to meet the ongoing skill requirements of an advanced economy.

The knowledge-based economy requires both good basic education opportunities and life-long learning, so that employees can continuously develop new skills and become more flexible in meeting changing demands for their skills. Students must be computer-literate when leaving secondary school. (p.35)

The greater emphasis on ICT skills in the 2001 UNICE report reflects a similar growth in concern about the importance in these skills in the US since 1992.

There is clear evidence that both governments and industry leaders in Europe support the concept of generic employability skills, and industry leaders in Europe favour a broad conception of them. There is also evidence that information and communication technology skills are of great concern in Europe and this suggests that these need to be given greater attention in Australia.

3.5 The OECD DeSeCo project

The DeSeCo project (The Definition and Selection of Competencies) is an OECD project developed under the umbrella of the Indicators of National Education Systems (INES) project (Salganik, Rychen, Moser, & Konstant, 1999). In establishing the DeSeCo project, there was a concern to ensure that the effectiveness of education systems was measured using a broader range of indicators than was available from subject-specific assessments that had been a feature of earlier attempts to compare the outcomes of educational programs. Salganik et al. (1999) also claimed that earlier

projects had been developed without the benefit of a thorough and sound theoretical and conceptual basis. The DeSeCo project seeks to build upon the work done in the International Adult Literacy Survey (IALS), the Cross Curricular Competencies Project (CCC), and the Human Capital Indicators Project (HCI).

Specifically, the DeSeCo project set out to establish sound and broadly based theoretical conceptions of competencies. It recognised that these competencies had to apply to school and work settings but equally to life situations beyond those areas. Rychen and Salganik (2000) noted that the various national attempts to develop definitions of generic skills can be characterised as:

- boosting productivity and market competitiveness;

- developing an adaptive and qualified labor force; and

- creating an environment for innovation in a world dominated by global competition. (p3)

These are characteristics of generic employability skills. In a broader conception, generic skills are seen to be important because they also contribute to:

- increasing individual understanding of public policy issues and participation in democratic processes and institutions;

- social cohesion and justice; and

- strengthening human rights and autonomy as counterweights to increasing global inequality of opportunities and individual marginalization. (p3)

In order to achieve a broad theoretical consensus, the project commissioned a series of expert papers from psychologists, sociologists, economists, anthropologists, and philosophers. While there was considerable agreement that there are generally applicable competences that are relevant at least to developed western economies and societies, Goody, an anthropologist, argued against the dominant view within the DeSeCo project. He argued that schools, a focus of the project, are not the only social institutions through which individuals can develop competences and that the roles of family and friends, among others, should be taken into account in defining competences. He also argued that the cultural context of individuals defines what is valued, and that because of cultural differences, it is not feasible to define universal key competences (Goody, 1999).

Haste (1999), in arguing from a psychological perspective, identified five 'key competencies'. They were:
- technological competence;
- dealing with ambiguity and diversity
- finding and sustaining community links;
- management of motivation, emotion, and desire; and
- agency and responsibility.

What is particularly interesting in Haste's list of key competencies is that they represent a higher level of abstraction than those described in any of the schemes reported in earlier sections of this report. Each competence is defined very broadly.

For example, technological competence involves the meta-competence of tool use, a preparedness to acquire new skills and to relinquish those that are no longer needed, and an ability to deal reflexively with new developments. Second, they give greater emphasis to inter- and intra-personal attributes than do most of the previously discussed schemes. Third, they introduce a values perspective in talking about individuals' agency and responsibility.

The DeSeCo project has focused upon the definition of competences from multi-disciplinary perspectives but has not at this stage reached a point of constructing methods for their assessment and measurement. However, this is clearly the primary intention of the project. The director of the DeSeCo project, Heinz Gilomen, in the foreword to Salganik et al. (1999), referred to the changing social, economic, and political circumstances brought about by globalisation and new technologies. He observed that the future well being of individuals, enterprises, and societies depended increasingly on high levels of knowledge, skill, and competence, and that there was a consequent imperative for policy-makers to ensure that the social institutions that are responsible for these outcomes are able to deliver them. There is thus a need for soundly based instruments to monitor their performance.

The work completed under the DeSeCo project provides very useful source material in reconsidering the definition of generic employability skills in the Australian context.

4. AN EMERGENT SKILL SET FOR CONSULTATION

This chapter seeks to identify an emergent set of generic employability skills that could provide a basis for further consultation and debate in Australia. Two sources are used to develop this set of skills:

- the national frameworks developed in other countries which identify skill domains that would seem to be important for workplace success, and which were not included in the Mayer framework; and

- the views of Australian employers on the generic skills needed for high-performance workplaces.

4.1   Comparing the National Frameworks

As was documented in Chapter 3 and Appendix 2, the broad frameworks developed in the main English-speaking countries for identifying generic competencies or employability skills have many features in common – not least of which are the factors that led to their development in the first place. Table 4.1 draws together the frameworks. While it is true that the various national frameworks share many features, the differences are also instructive.

Overwhelmingly, the Mayer Key Competencies and workplace know-how have much in common, and this is shown in Table 4.1. There are important differences, and these arise in part from the concern of the Mayer Committee to maintain a focus on competencies that can be assessed readily. In their discussion of the meaning of competence (Australian Education Council. Mayer Committee, 1992a, pp.6-7), the Committee indicated a preference for "a broad definition of competence which recognises that performance is underpinned not only by skill but also knowledge and understanding". However, in relation to values and attitudes, the Committee concluded that the principles that they has used to define the Key Competencies "preclude the inclusion of values and attitudes" and that "the Key Competencies can only include those things that can be developed by education and training, which do not require some innate predisposition or adherence to a particular set of values, and which are amenable to credible assessment" (p.13). By contrast, the SCANS workplace know-how includes among its foundation skills the personal qualities of individual responsibility, self-esteem and self-management, sociability, and integrity and honesty (SCANS, 1991, p. xi). In part, Planning and Organising Activities assumes elements of self management, including monitoring and evaluation.

There are similar differences evident between Mayer and the 1992 version of the Employablity Skills Profile in Canada. The different emphases are even more striking when the reference point is the 2000 profile (see Table A1).

Table 4.1 shows that there is substantial broad agreement between the original set of UK core skills and the Key Competencies defined by the Mayer Committee.

Table 4.1   Comparative table of generic employability skills by country

Australian Mayer Key Competencies	United Kingdom (NCVQ) core skills	Canada Employability Skills Profile (1992)	United States (SCANS) workplace know-how
Collecting, analysing and organising information	Communication	Thinking skills	Information Foundation skills: basic skills
Communicating ideas and information	Communication Personal skills: improving own performance and learning	Communication skills	Information Foundation skills: basic skills
Planning and organising activities	Personal skills: improving own performance and learning	Responsibility skills Thinking skills	Resources Foundation skills: personal qualities
Working with others and in teams	Personal skills: working with others	Positive attitudes and behaviour Work with others Adaptability	Interpersonal skills
Using mathematical ideas and techniques	Numeracy: application of number	Understand and solve problems using mathematics	Foundation skills: basic skills
Solving problems	Problem solving	Problem-solving and decision-making skills Learning skills	Foundation skills: thinking
Using technology	Information technology	Use technology Communication skills	Technology Systems
Post-Mayer additions: Cultural understandings	Modern foreign language	(2000) Manage information Use numbers Work safely Participate in projects and tasks	

Source: adapted from Werner (1995).

In a revision of the core skills describing them as key skills, the addition of 'improving own learning and performance' represents a move towards an acceptance of values and attitudes, as reflective awareness of one's strengths and weaknesses in both learning and performance and in seeking opportunities to enhance one's skills almost certainly involves an evaluation of attitudes, values, and motivations. Superficially, this skill may be equated with elements of planning and organising activities, but the detailed descriptions of this skill even at its most basic level reveals

that personal goal setting and monitoring achievement, with a mentor, reveal a much more reflective intent.

A major area of departure between the UK key skills program and the Mayer Key Competencies has been the definition of basic skills. Clearly, this is an indication that other generic skills rest on a previously assumed foundation of basic competence that is not an attribute of all workers.

Another difference between the Key Competencies and key skills lies in the level of specification of the skills provided in supporting documentation. This is an aspect of the Key Competencies that might receive further attention.

The area of "physical skills" is one broad area that does not feature in any of the national generic skills schemes outlined in Table 4.1. This area was emphasised, however, in the 1993 *New Zealand Curriculum Framework* (New Zealand Ministry of Education, 1993). The NZ document set goals for students in aspects such as personal fitness and health; locomotor and manipulative skills; first aid skills; skills relating to sporting, recreational and cultural activities; and learning to use tools and materials efficiently and safely.

It could be argued that some of these physical skills should form part of any conception of generic employability skills. However, there are two concerns about the inclusion of physical skills as a category. First, empirical studies indicate that since the early 1970s physical skills have become much weaker predictors of on-the-job performance (Hunt, 1994). This decline is observed even for jobs for which such skills are involved, eg auto mechanics. Second, and even more importantly, physical skills, while desirable for many jobs and non-work activities, are not especially generic across a wide variety of work settings. As such, physical skills are probably best thought of as part of the specifications for particular job types. Presumably, it is for reasons such as these that physical skills did not feature in the national generic schemes in Table 4.1. The recent review by Kearns (2001) also did not provide any support for the inclusion of physical skills.

Generic skills that did not feature in the Mayer Key Competencies, but which are recognised in other national schemes, are shown in Table 4.2. The "missing" skills are categorised as either Foundation, Cognitive, or Affective. The skills present in these other schemes, but not reflected in Mayer, provide a basis for thinking about an emergent set of generic employability skills for Australia.

Foundation skills

The Foundation Skills identified in Table 4.2 are essentially functional literacy and numeracy skills as defined within the International Adult Literacy Survey (IALS) studies; these are considered as essential for individuals to function effectively in work and social settings and are necessary for further learning. Foundation skills are identified in the US, Canada, and the UK largely as a result of the IALS studies. The foundation skills identified include literacy and numeracy, and in both the UK and Canada quite close attention is paid to defining them. Literacy, based on notions of functional literacy, includes listening and speaking and reading and writing.

Intellectual skills

Those skills that are labelled as Intellectual in Table 4.2 are broadly equivalent to the Mayer Key Competencies. They are beyond a foundation, but are necessary in a wide range of occupations and industries, and, in accordance with Mayer, exclude the affective domain of attitudes, motivations, and values. The set of thinking skills that are described more explicitly in other schemes than in Mayer include: decision-making; creativity; innovation; reasoning; and problem-solving. Such skills are commonly suggested as high priorities by employers.

Table 4.2   Generic employability skills not in the Mayer Key Competencies

Category	USA SCANS	Canada Essential Skills	Canada Employability Skills	UK Key Skills
Foundation skills	Reading Writing Listening Speaking Numeracy	Reading Writing Listening Speaking Numeracy	Reading Writing Listening	Reading Writing Listening and speaking
Intellectual skills	Thinking skills: decision-making reasoning	Decision-making		
	Thinking skills: creativity		Problem-solving: creativity and innovation	
	Personal: knows how to learn	Continuous learning	Learns continuously: sets goals self-assessment plans learning	Improving one's own learning and performance
	Resources: manage time, space, money, materials, personnel			
	Systems understanding			
Values, attitudes, and motivations	Personal: self esteem ethics, integrity, honesty self-management sociability		Demonstrates a positive attitude: positive self-concept ethics initiative and effort	
	Interpersonal: leadership cultural understanding customer service negotiates		Responsibility: goal setting innovative and resourceful accepts feedback	

Mayer also did not directly identify "learning to learn" as a key competency. Being prepared to learn is identified in the Canadian, US and UK schemes. Whether it is intellectual or affective is debatable, as it has elements of both. It involves a recognition of the need to learn, it must include a willingness to learn, and it must involve some information seeking skills, as well as monitoring and evaluative capacities.

"Resource (project) management" is identified in the US as a necessary element of workplace know-how. While it is close to the Mayer 'Planning and organising activities' Key Competency, its emphasis is rather different. With flatter management structures in organisations, it is possible that this set of skills is now in greater demand.

'Systems understanding' was identified as a key skill area by SCANS in the USA. SCANS describes it as 'understanding social, organisational, and technological systems; monitoring and correcting performance; and designing or improving systems.' This is probably not a relevant skill for new workforce entrants, but is likely to be seen as desirable for established employees, and essential to progression to supervisory or management positions.

Values, attitudes and motivations

Values, attitudes, and motivations are those personal and interpersonal attributes that are described in some schemes as soft skills. It is in this area that the differences between Mayer and the other national frameworks are the most marked. Mayer did not include such skills at all, on the grounds that they are difficult to teach and assess. Yet, it is this set of skills that employers most commonly say that they wish to develop in their workforce. Although the challenges in conceptualising and implementing soft skills are formidable, the effort would seem to be warranted.

The personal attributes that are identified in other schemes include: self esteem (or self-concept); ethics, including integrity and honesty; self-management; resourceful; and initiative and effort; and accepting of feedback. 'Leadership' (from SCANS) is a skill that probably only applies to established employees seeking promotion and is not an attribute that would normally be expected from a new entrant into the workforce, even if many have opportunities to demonstrate this in school or other settings.

4.2 The Views of Australian Employers

Australian employers' views of generic employability skill requirements, as revealed in several studies, canvass a wide range of issues including:

- the central importance of generic employability skills in contributing to internationally competitive, high-performance workplaces;
- the extent to which these skills are sought and developed through recruitment and training;
- the definition of these skills;
- the effectiveness of the education and training that leads to the development of these skills;
- their perceptions of the extent to which recruits demonstrate these skills; and
- responsibility for the on-going development of these skills.

Australian employers continue to accept the importance of a highly skilled workforce as an element of competitive advantage both within this country and on an international stage. Employers place a high value on high level job-specific technical skills and on generic employability skills both for new entrants to their enterprises and for those who take senior responsibilities. As noted in the review by Kearns (2001), there is evidence of growing demand by employers in Australia and overseas for generic skills. The rising demand is reflected in the market value of generic skills, and is often linked to the need for workplace and organisational change in response to competitive market pressures. Many employers place great importance on generic employability skills in their recruitment processes. Either directly or through human resource consultants, many employers test the generic skills of applicants and select on the basis of these attributes. Training programs include elements of generic employability skills for both front-line managers and for people aspiring to senior management and leadership positions.

Employers include within generic employability skills an emphasis on basic skills, intellectual abilities, and personal attributes. Companies recognise the growing importance of information technology in business processes and see it as a basic skill. Intellectual skills such as problem-solving, which have been acknowledged for some time as important, continue to be sought. There now appears to be a greater emphasis on what are sometimes called 'soft' skills – the personal attributes of teamwork, a work ethic, an a preparedness to be flexible and to embrace change. The views of employers reflect a broader conception of generic employability skills than in Mayer.

There is some dissatisfaction with the extent to which schools, the VET sector, and universities prepare their graduates for the demands of the workforce. In most cases, the technical skills of new workforce entrants are regarded as satisfactory, but their generic employability skills are often questioned.

Enterprises do invest in training and development for their employees, although there is a tendency to use recruitment to achieve the skills profile that companies desire. There are also differences in the level of investment in training and development according to company size, with larger enterprises tending to invest more. However, given the interests of individuals, enterprises, and the nation in being perceived as having a skills base that is appropriate for the emerging knowledge economy and the new forms of work organisation that accompany it, there is a need to examine the arrangements under which training is provided, funded, and rewarded.

Industry perspectives on graduates' attainment of generic skills

ACNielsen Research Services

The DETYA commissioned ACNielsen Research Services report (ACNielsen Research Services, 2000) investigated employers' satisfaction with the capabilities of both higher education and VET sector graduates. It is interesting from two perspectives. First, in addition to being a review of employer satisfaction with the skills of graduates, it established a list of 25 skills clustered as: basic competencies; basic skills; academic skills; and other (personal) attributes. These skills were identified though a series of focus groups involving both graduates and employers, and through telephone interviews with employers of graduates, and thus provided

information about industry expectations of graduate capabilities. Second, through a survey of 1105 enterprises, it reported upon the level of satisfaction of employers with graduates, including both those whom they had employed and those who had been interviewed but not subsequently employed.

The skills employers consider to be most important in graduates are creativity and flair, enthusiasm and the capacity for independent and critical thinking (ACNielsen Research Services, 2000, p.14). The skills most sought by employers were:

- academic achievement;
- literacy;
- numeracy;
- computer skills;
- time management skills;
- written business communications;
- oral communication;
- interpersonal skills;
- team-working skills;
- problem solving skills;
- comprehension of business processes (pp.15-16).

Academic achievement is thought (by the report's authors) to be a proxy for other factors. They hypothesise that past academic achievement is an indicator of "intellectual capability, capacity to learn, and motivation to pursue and achieve high goals" (p.8).

Taking into account the importance that employers attached to each of the 25 identified skills, skill deficits were most common in:

- problem solving skills;
- oral business communication skills; and
- interpersonal skills with other staff. (p.22)

These deficits were common across many industry groups, although some industries did identify other specific skills deficits.

A key differentiator of successful and unsuccessful applicants for positions was found to be a capacity for independent and critical thinking. Thus, it appears that enterprises were prepared to hire graduates who had certain common skill deficits but that critical thinking was a rare but sought-after attribute and in a market where there were more applicants than positions available, having this attribute bestowed a key advantage on applicants.

Flinders University Graduate Employers Survey

Flinders University has undertaken two surveys of graduate employers: one in 1993 and one in 1998 (Flinders University, 1998). Although the studies have been smaller

than the ACNielsen one, they have used a similar method and have reported similar findings.

The Flinders survey used a list of 17 attributes and asked employers to rate their importance. All received mean ratings of between 3.1 and 4.5 on a five point scale, in which 1 was 'unimportant' and 5 was 'very important'. This is consistent with the ACNielsen study. There were some differences in the attributes that were listed. The Flinders survey instrument included 'Capacity to appreciate different viewpoints and perspectives' while the ACNielsen instrument did not include an equivalent. This item could be taken as an indicator of the proposed eighth Mayer key Competency – cultural understandings. On the Flinders survey, this was rated as the fourth most important attribute. However, given that all attributes listed on both instruments were regarded as important, caution must be exercised in comparing the rankings of items between the two surveys.

The Flinders survey revealed that the three most valued graduate attributes were "capacity for cooperation and teamwork", "communication/presentation skills" and "capacity to learn new skills and procedures". Private sector employers were inclined to value "time management", and "capacity to work with minimum supervision" more highly than were public sector employers.

As was found in the ACNielsen survey, the workplace skills of graduates were generally rated by employers in the range between "good" and "very good".

The skill deficits identified by employers among graduates were 'decision-making capacity', 'capacity to work with minimum supervision', 'time management skills' and 'management and supervisory skills'.

Institution of Engineers Review of Engineering Courses

In 1996, the Institution of Engineers published a review of engineering education in Australia. The review had been a joint undertaking of the Institution of Engineers Australia, the Academy of Technological Sciences, and Australian Council of Engineering Deans. In the forward to the Review Summary, the committee said:

The Review of Engineering Education is recommending no less that a culture change in engineering education which must be more outward looking with the capability to produce graduates to lead the engineering profession in its involvement with the great social, economic, environmental and cultural challenges of our time. (Institution of Engineers Australia, 1996a, p2)

The Review Committee made many recommendations, and among them was a requirement for a more generally competent graduate. Technical knowledge was a fundamental requirement, but a range of skills and attributes beyond technical knowledge were identified as necessary by industry groups consulted by the Review Committee. Recommendation 3 included:

> 3.2 That engineering schools demonstrate that their graduates have the following attributes to a substantial degree:
>
> ability to apply knowledge of basic science and engineering fundamentals;

ability to communicate effectively, not only with engineers, but with the community at large;

in-depth technical competence in at least one engineering discipline;

ability to undertake problem identification, formulation and solution;

ability to use a systems approach to design and operational performance;

ability to function effectively as an individual and in multi-disciplinary and multicultural teams, with the capacity to be a leader or manager as well as an effective team member;

understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;

understanding of the principles of sustainable design and development;

understanding of and commitment to professional and ethical responsibilities; and

expectation and capacity to undertake life-long learning.

3.3 That the accreditation of Bachelor of Engineering courses is based on demonstrated development of graduates with these attributes.

(Institution of Engineers Australia, 1996b, p.30)

While some of the requirements detailed in the above recommendation are specific to engineering, most are or can easily be adapted as a list of requirements of any graduate about to enter professional practice. What is significant in the above recommendation is that, in addition to the recognition of a range of generic graduate attributes, there is an expectation that these attributes are anticipated outcomes of an engineering course and that their demonstration be a requirement for professional accreditation of the program. Similar sets of generic graduate attributes could be specified for a very wide range of professions and could also be a basis for professional recognition of awards.

Employer consultations and the Graduate Skills Assessment

In developing the Graduate Skills Assessment (GSA) for use in Australian universities (see Chapter 2), ACER consulted with a range of employers about the relative importance of various components of generic skills. Hambur and Glickman (2001) have summarised the results of these consultations in Table 4.3. They suggested that, based on the consultations and a literature review, the suggested components can be divided into two broad groups, those focusing on cognitive skills and those focusing on attitudes.

Table 4.3   Employers' perspectives on the relative importance of generic skills among university graduates

Component	Perceptions of relative importance
Communication/ Structured Written Response	//////
Problem Solving/Applied Reasoning/ Strategic	//////
Analytical Skills	/////
Critical Thinking	//
Logical Reasoning	//
Ethics/ Citizenship/Social Responsibility/Empathy	///
Creativity	//
Interpersonal skills/ Teamwork/ Leadership	////////
Sceptical but Open-minded	
Flexibility/ tolerate uncertainty	//
Capacity for or commitment to Lifelong/ Independent Learning	///
Numeracy/ ability to quantify	//
Literacy	/
IT familiarity/ IT Use	///
Personal Skills/ self-management/ reflective/ confidence/self-reliance/initiative	/////
Global/national / historical/cross-cultural perspective	//
Information Literacy/ Management/Research Skills	

Source: Hambur & Glickman (2001).

Industry perspectives on the significance of generic skills

Generic employability skills and high performance

Field and Mawer (1996), through a series of case studies, identified a number of factors that are common to high-performance workplaces. High performance enterprises have clear goals, an orientation to quality products and services and processes that lead to those outcomes, and they have flat management structures with devolved decision-making. To operate successfully in these environments, they require personnel with a compatible achievement orientation and the skills to ensure those outcomes. Workers who are successful in high performance workplaces are:

> expected to be confident and socially sophisticated… They are expected to have attitudes such as flexibility and openness to change, and to be oriented to achieving results.

> Teamwork, … tolerance of uncertainty, … and respect for different viewpoints and communication styles … become more important.

> (Field & Mawer, 1996, p.19)

The characteristics identified above are part of "an intellectual and attitudinal core" required of employees in addition to the Mayer Key Competencies.

In addition employees must be prepared to continue to learn. This includes both informal learning through critical reflection about the requirements of the work situation and formal education and training programs to enhance skills.

Thus there is a case for extending the Key Competencies concept. Field and Mawer identified a number of generic employability skills that are not included in the Mayer Key Competencies. They are: decision-making; delivering results; thinking creatively; customer focus; systems understanding; change management; improving own performance; cultural understanding; LOTE; leadership; understanding organisational culture; negotiating; planning; goal setting; adding value; being confident; applying business acumen; listening; and writing with impact (Field & Mawer, 1996, Table 6, p.22).

The generic employability skills required in a competitive environment

In a study of the views of a cross-section of 350 member companies of the Australian Industry Group, generic employability skills were accepted as being important in a competitive business environment, with greater emphasis now being placed on these skills. They were required to sustain innovation, flexibility, and a customer service orientation (The Allen Consulting Group, 1999). The study found that:

> an increasing premium is being placed on generic skills, both 'hard' (notably IT skills) and 'soft' (eg problem-solving, team skills, willingness and ability to adapt) to be developed prior to recruitment;
>
> (The Allen Consulting Group, 1999, p.v)

Changes in work organisation, for example through the introduction of self-managed work teams, is driving the demand for multi-skilled employees and for higher levels of skill. Thus generic employability skills are accepted as being important among AIG member companies.

Table 4.4   Generic employability skills identified among Australian Industry Group companies

Generic "core" or basic skills	"Inter-personal" or "relationship" skills	Personal attributes
Literacy	Communication	Capacity to learn
Numeracy	Team working	Willingness to embrace change
Information technology capability	Customer focus	Independent problem solving and reasoning capability
Understanding of systems relationships	Project and personal management	
		Practicality and a business-orientation
Alongside these skills is a requirement for high-level technical skills, specific to particular companies, jobs and industries		

Source: The Allen Consulting Group (1999, p.31)

The Allen Group presented a "Snapshot of the Generic Skills Required for Competitive Companies." These are shown in Table 4.4. Significantly, these skills subsume the Mayer Key Competencies, but extend the Mayer approach to include contextual understanding, client focus, project and personnel management, capacity to learn, and practicality and a business orientation. These skills, and the way in which they are presented, are reminiscent of some of the skill sets identified in the overseas literature reviewed in Chapter 3, Developments Overseas.

The Allen Group reported that companies need workplace skills of "both the generic and specific kind, and of the soft and hard kind." Generic employability skills are an essential underpinning of workplace productivity. However, a positive attitude to work is also strongly sought. High performance enterprises require a blend of both positive attitude and high ability (The Allen Consulting Group, 1999, p.41).

They found that most companies in their sample were used as a basis for recruiting and developing staff and sustaining high quality competitive outcomes. They reported routinely testing for these skills as part of their recruitment processes and making them a focus of their training and development activities.

They found that larger companies were more likely to have developed a strategic approach to recruitment in order to build their required skills profile. Here testing for employability skills was a common feature of their recruitment processes. There was a view that it was more feasible to make up for technical skill deficiency through on-the-job training than it was to remediate employability skills deficits (p.32). In support of this contention, they quoted from some of their interviews:

> "We used to recruit on the basis of knowledge and skills and then fire on attitude, but now we are shifting the balance to take attitude and other personal attributes more seriously early in the process."
>
> Human Resources General Manager, distribution operation (for large manufacturer), interview comment.
>
> "In the production areas we look for people with the ability to learn, and with team–work skills. Only rarely do we look for readymade technical production skills."
>
> (Packaging Manufacturer, interview comment. (p.33))

Companies that are undertaking systematic change, for example restructuring, are more likely to train of current employees in generic employability skills, "especially those related to teamwork, dealing with clients and taking greater personal responsibility for quality output and service." This training is an important component of the change management strategies being implemented in these companies (p.34).

Informants in their interviews expressed some dissatisfaction with the outcomes achieved by education and training providers. This applied to the school, VET, and university sectors. They reported that:

> many employers still do not regard the school system as preparing employees well for work;
>
> universities were seen by many employers as not preparing graduates with the needed business or commercial acumen required in the workplace; and

the links between education and training providers and companies were seen as high priority for achievement of the skill outcomes that reflect enterprise needs.

(The Allen Consulting Group, 1999, p.xiii)

The issue of responsibility for the provision of education and training that leads to the development of generic employability skills and to technical skill development was raised. The Allen Group took the view that there was a requirement for greater personal responsibility. However, their report also indicated a need for skill formation policies to directly address this matter. They noted that this was a particularly important policy issue at a time when there was a greater requirement for high level skills as a foundation for competitive industries and when the penalty for skill deficits was particularly high (The Allen Consulting Group, 1999, Preface).

Box 4 summarises Australian employers' views on employability skills.

Employability skills for the 21st century

As Australia moves through the 21st Century its industries and its people will need to develop new skills and will require the capacity and willingness to review and redevelop their skills frameworks.

The views summarised above have suggested that there is a need to extend conceptions of basic skills. Basic skills are being developed, assessed and reported in most states in the school sector. Over time, what is included within the conception of basic skills will most likely be extended to include information literacy and information technology.

Box 4: Summary of Australian employers' views on employability skills

Australian employers have, through various projects, made considerable input into the debate on generic employability skills. They have shown that they accept these entities as quite important attributes of employees who are capable of contributing to highly productive and competitive workplaces. Employers use these skills as a basis for the selection of employees and in training programs for the development of their existing work forces.

There appears to be some convergence in the definitions that employers accept of generic employability skills, although there are variations. It is suggested that the variations are less important than the coherence that has emerged from a consideration of employers' views. It also appears that there is broad agreement among employers in Australia with the views of employer groups form the European Union, including the United Kingdom.

Employers express some concerns about the extent to which the formal sectors of education are able to prepare graduates for the requirements of the workforce. In general, graduates' technical skills are regarded favourably, but there appear to be some concerns about graduates' "soft skills", so some skill gaps are apparent. Thus there is scope to improve the assessment and reporting of generic employability skills, an outcome of which will be a greater awareness among graduates of the importance of these skills.

The Key Competencies identified by the Mayer Committee correspond largely with the set of abilities that have been described intellectual skills in this report and by others including Kearns (2001), Field and Mawer (1996), Gow (2000), and The Allen Group (1999). The skills described by these authors depart from the Mayer Key Competencies in that they give greater emphasis to interpersonal skills by extending Working with Others and in Teams to include negotiation and a customer focus and by including a range of personal attributes. The personal attributes that they add to the Mayer specification of Key Competencies include a capacity to learn, adaptability and a willingness to embrace change, a business orientation, and an achievement orientation.

In other schemes, for example in the DeSeCo project, yet other aspects of the personal dimension are raised. What is important about this set of views is that as the nature of the economy changes, new skills are being recognised as important and a renewed focus on the attributes of individuals is emerging. How these emerging skill sets can be embedded in a framework remains an open question. Field and Mawer (1996) and Kearns (2001) have suggested frameworks. In this report, a simple structure that includes basic skills, intellectual abilities, and personal attributes has been suggested. Whether any of these particular frameworks is accepted is less important than adopting a structure that meets current needs, recognising the changes that have occurred in Australian industry and society since 1992, and that is flexible enough to accommodate future changes in the employability skill requirements of Australian industry.

4.3   A Framework of Skills for Australian Debate

Based on the above analysis, Table 4.5 proposes a set of generic employability skills for debate and fieldwork in Australia. This table was prepared as a basis for consultation with industry representatives by those responsible for other strands of the overall project. It does not seek to replace the Mayer Key Competencies, but to build upon them by including skill areas identified in the national frameworks of broadly comparable societies, and evidence of Australian employers' views.

The set of skills proposed in Table 4.5 is tentative. Its main purpose is to provide basis for the consultations with employers being conducted by the consultants responsible for the other strands of the project. We have resisted the temptation to provide a prescriptive list. Others would include different skills, would use different labels, and would organise them differently. The current list is proposed in order to establish a framework within which a range of generic employability skills can be included. The framework includes three categories: basic skills; intellectual abilities; and personal attributes.

Different observers have proposed alternative locations for some of the skills within the categories that are presented in the Table 4.5. For example, the Allen Consulting Group placed systems understanding in the Basic Skills group. Precisely where individual skills are placed within such schemes, and even whether a table such as this captures all the skills that have been proposed by the large number of contributors to the debate, seems rather less important than accepting the broader basis that companies now endorse in defining and selecting the kinds of entities that they are prepared to support as generic employability skills.

Table 4.5   A possible list of composite skills identified from international frameworks of employability skills

Basic Skills	Intellectual Abilities	Personal Attributes
Foundation skills Listens and understands and speaks clearly and directly Understands written documents and writes clearly Understands tables of figures, able to interpret graphs, able to calculate	*Thinking skills* Able to make decisions Capable problem-solver Innovative – adapts to new situations Creative	*Continuous learning* Acknowledges the need to learn in order to accommodate change Open to new ideas and techniques Is prepared to invest time and effort in learning new skills
Information and communications technology skills Is aware of and willing to use a range of technologies Uses technology to seek, process, and present information	*Contextual understanding* Knows own role in the work situation Understands interrelationships among workplace processes and systems Can diagnose systems (process) deficiencies[*] Can design, implement, and monitor corrective actions[*]	*Personal attributes* Has positive self esteem Understands that own actions influence others Is self-manager, resourceful, shows initiative and effort Displays sense of ethics including integrity and honesty Accepts responsibility for own actions Seeks and accepts feedback
	Organisational skills Is able to manage own time and to seek needed resources to complete set tasks Sets goals and engages others in achieving those goals Establishes clear project goals and deliverables[*] Allocates people and other resources (eg budgets, materials, space) to tasks[*] Sets time lines and coordinates sub-tasks[*] Is able to adapt resource allocations to cope with contingencies[*]	*Interpersonal skills* Shows cultural sensitivity Committed to client service Able to negotiate Works well with others, individually and in teams Shows leadership[*] Can develop a strategic vision, set goals, and monitor performance[*] Communicates goals and targets, engages and enthuses subordinates towards a shared vision[*]

Note:* Indicates that the attribute is expected of experienced workers, but not of new entrants to the workforce

Clearly, there is scope to explore matters of the definition and selection of generic employability skills. There are differences among those who have contributed to the discussion on skill formation as Australia seeks greater involvement in the high skills knowledge economy.

Key elements of the consultative framework

Basic Skills

In the past, basic skills have included literacy and numeracy. Now, these abilities are considered in an applied context and appear to be quite broad. Literacy has been transformed to communication and encompasses listening and speaking and includes an awareness of purpose, audience, and medium. It is possible that achievement in information literacy and facility with information technology (two different but related constructs) has not kept pace with industry requirements. These basic skills are represented among the Mayer Key Competencies as Communicating Ideas and Information and Collecting, Analysing, and Organising Information.

The problem of basic skills achievement is one that must be addressed separately for different groups within the community. In the majority of cases, students completing secondary school have well developed literacy and numeracy skills and many are quite articulate. Their educational attainment is greater than that of earlier generations. However, whether the improvement in attainment is sufficient to keep pace with changing industry demands is probably open to debate.

Intellectual Abilities

The intellectual abilities sub-set of the framework of Table 4.5 includes the Key Competencies Solving Problems and to some extent Planning and Organising Activities. However, within the framework, broader conceptions of these constructs is proposed by adding creativity and decision making to the former and by adopting a much more encompassing 'contextual understanding' approach to the latter. Those skills recognised in the table under the heading 'Project management' take Planning and Organising Activities further and talk about goal setting, time management, and project management. Thus, an extension of the skills recognised as Key Competencies is proposed.

Personal Attributes

The Mayer Committee had decided not to include values and attitudes within the Key Competencies. The personal attributes that are proposed in Table 4.5 include both values and attitudes and other affective elements such as self-esteem. While the Mayer Committee was cautious in this area because of perceived difficulties in learning and assessing values and attitudes, there is growing evidence that these entities can be assessed and therefore can legitimately be included within the framework. The National Goals for Schooling give these attributes prominence. Thus, the framework clearly signals a desire to extend the Key Competencies in this area.

The issue of assessment and reporting of personal and interpersonal attributes is a complex one. There are several purposes for assessing and reporting generic

employability achievements, and for each purpose there may be distinct optimal modes of assessment. These issues are canvassed in more detail in Chapter 5.

An attribute that has been identified elsewhere is a commitment to personal skills development and so continuous learning has been suggested. This attribute also implies a preparedness to accept and embrace change.

An area that was covered to some extent in the Mayer Key Competencies was an ability to work well with others - Working with Others and in Teams. It is suggested that this concept be extended by subsuming the issue of cultural inclusivity under this heading. This matter was debated within the Mayer Committee and subsequently by many others. There is growing support for its inclusion.

The need for the inclusion of personal attributes as part of a generic skills framework is also supported by the recent literature review conducted by Kearns (2001):

> The pressures for self-direction, autonomy, adaptability, and lifelong learning generated by the new economic environment of Australian education and training go beyond the current ambit of the Mayer key competencies and raise a spectrum of fundamental issues relating to skill, personal attributes and values, and the generation, management and use of new knowledge. There is a strong case that the current exclusion of personal attributes and values from the key competencies can no longer be maintained in the new environment of education and training …
>
> (Kearns, 2001, p.72)

5. MOVING THE DEBATE FORWARD

The reviews of employability schemes in various countries and the attempts to implement them in Australia and overseas have led to the identification of a number of problems that remain unresolved and to some important policy questions. These issues have been categorised under the headings:

- definition and selection;
- dissemination and implementation;
- assessment and reporting; and
- certification and recognition.

The scope of the skills identified is quite broad, but the final selection of skills to be implemented depends upon being able to credibly assess and measure performance against them. Those elements of employability skills that are finally selected for assessment and reporting also depend upon the acceptance of these elements by employers and educators. Thus these issues are not entirely separable.

5.1   Definition and Selection

While substantial similarities have been identified among the conceptions of employability skills in the countries that have been reviewed in this study, some important differences are also evident. The Mayer Committee decided to limit the scope of its Key Competencies and precluded values and attitudes (Australian Education Council. Mayer Committee, 1992a, p.13). The preparedness of those who developed employability skills schemes in other countries, and in particular the willingness of industry groups, to endorse personal and interpersonal skills and attributes suggests that there is a case for Australia to reconsider the scope of the Key Competencies. The breadth of the schemes described in Australia and elsewhere is revealed in the composite list of skills shown in Table 4.5 in the previous chapter.

The set of eight skills groups can be further categorised into basic skills, intellectual skills, and personal attributes. Basic skills include foundation literacy and numeracy skills and skills in using information and communications technology. The inclusion of information technology skills with basic skills is an extension of literacy and numeracy and reflects the growing importance of information technology in all industries. Intellectual skills are those that involve critical and creative thinking and planning and organisation. Personal attributes are attitudes and abilities than enable individuals to monitor and manage their own learning needs, to contribute to and monitor their own work, and to collaborate with others in high performance work teams.

The scope of employability skills is broad. It is unlikely that this breadth can be implemented in the various sectors of education and in workplace education and training quickly. In the section Dissemination and Implementation, a phased implementation program is recommended. In order to prepare for this, the most important employability skills ought be selected for immediate implementation.

In addition to the results that emerge from the fieldwork strands of this project, some additional work on the definition and selection of employability skills, particularly taking into account developments in other countries and the OECD-supported DeSeCo project, is warranted.

5.2 Dissemination and Implementation

The literature reviews that have been undertaken as part of this investigation have found that when employers and educators have been asked about employability skills, those skills are recognised and are accepted as important.

A combination 'push and pull' strategy is required to encourage education and training providers to include an overt focus on employability skills and to ensure employers seek evidence of these skills in hiring new staff. The strategy is represented in Figure 5.1. Although employer groups have sought to influence education and training providers in the past, their calls have not been heeded to the extent that might have been expected.

Employer demand might be strengthened with support from regulating agencies at both State and National levels. Education and training providers may be more prepared to focus on employability skills if it can be shown that these skills can be assessed and reported effectively. The strategy being suggested assumes that if employers demand evidence of employability skills among job applicants, those applicants may exert some pressure on education and training providers to teach, assess, and certify these skills. This process is beginning to emerge with the Graduate Skills Assessment.
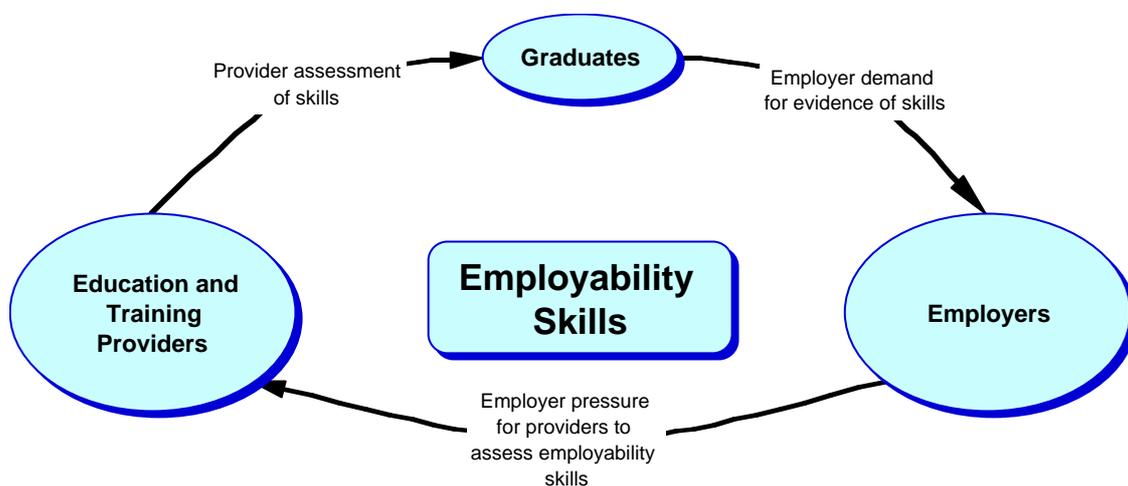
Figure 5.1 Representation of a push-pull strategy in the implementation of employability skills

Many employability skills are identified in the framework that was presented in Table 4.5. It would be difficult to implement all these skills at one time. While all skills included in the framework are accepted as generally applicable, some are endorsed more strongly than others. Communication, creative problem-solving, and teamwork skills are accorded the highest priority. Therefore, in an attempt to have the

framework accepted implemented widely, by education and training providers, by individuals, and by employers, a strategy that gives these particular skills prominence is most likely to succeed. Focussed efforts to develop, assess, and report achievement against these should be a priority in a phased implementation of the framework

5.3   Assessment and Reporting

Section 1.5 of the Mayer Report, Assessing and Reporting Achievement of the Key Competencies (pp.41-56), dealt extensively with both assessment and reporting issues. It recommended nationally consistent assessment and reporting of individual achievement of the Key Competencies (p.42). It then moved on to reporting issues and recommended reporting at the individual level through a 'record of performance' using a common format (p.51). The Committee also recommended reporting at an aggregate national level that was to be based upon statistical sampling of individual records of achievement and that the performance of equity and target groups should be a specific focus of this approach (p.55). Individual and aggregated reporting however, have distinct purposes which may require different assessment approaches.

Pellegrino, Chudowsky, and Glaser (2001) asserted that assessment has several purposes including:

- to assist learning;

- to measure individual achievement; and

- to evaluate programs.

Appropriate assessment at the individual level may lead to enhanced individual learning, in part by signalling that what is being assessed is regarded as being important enough to assess. It may also reveal individual performance and this achievement may be useful information to individuals to indicate areas of strength and weakness and to potential employers who may wish to use this information in selection procedures. Aggregation of individual achievement can be used at the system level to monitor performance.

Four approaches to the assessment of employability skills have been identified in the review of literature:

- judgments by teachers (McCurry & Bryce, 1997; National Industry Education Forum, 2000);

- portfolios created by students (Feast, 2000; National Industry Education Forum, 2000; Reynolds, 1996);

- assessment based on work experience (National Industry Education Forum, 2000; Queensland Department of Education, 1997); and

- assessment using purpose-developed instruments (Griffin, 2000; Hambur & Glickman, 2001).

These approaches are not competing alternatives. They achieve similar purposes – to document and certify student achievement – through different means and, because of their relative strengths, complement each other.

Each of the four broad assessment methods summarised in Table 5.1 has been shown to work well in some contexts and to have particular advantages. Each requires further development. Teacher judgement and workplace assessment require some staff professional development of teachers and workplace supervisors so that consistent judgements are made. Portfolio assessment requires that support packages be developed and distributed so that students are able to develop evidence-based portfolios and so that staff are able to assist students in the development of their portfolios. Instrumental assessment has been shown to work in both the school and university sectors. It produces useful summary information that can be aggregated to institutional and system levels. Further development of this method is warranted to increase its scope.

Table 5.1   Experience with different approaches to assessing generic employability skills, by sector of education

Approach	School sector	VET sector	University sector
Teacher judgement	Has worked well Provides useful brief statements	Limited due to less extensive on-going student observation	Limited due to less extensive on-going student observation
Portfolio	Has worked well Promotes importance of generic employability skills Enhances learning Provides rich information	Has worked well Promotes importance of generic employability skills Enhances learning Provides rich information	Has worked well Promotes importance of generic employability skills Enhances learning Provides rich information
Workplace assessment	Has worked well in limited trials	Has worked well	Has been used overseas (e.g. France)
Assessment instruments	Shown to be feasible Produces summary results Can be aggregated	Produces summary results Can be aggregated	Shown to be feasible Produces summary results Can be aggregated

Of these four approaches, teacher judgements appear to work well in the school sector where teachers know students' attributes well through frequent and close observation. However, this method is unlikely to transfer to either the VET or higher education sectors where such close observation does not occur. Portfolios may be quite effective for making students aware of their developing skills and for providing a rich data source for detailed scrutiny by prospective employers, but often they are not standardised and they are not likely to provide an effective basis upon which prospective employers may quickly infer students' achievement. Work experience assessment appears to be a useful method and to produce a simple report, although it is not standardised and may not be amenable to ready comparisons. The National Industry Education Forum (National Industry Education Forum, 2000) approach to portfolio assessment combines teacher judgement, self- and peer-assessment, with workplace assessment to produce a comprehensive but standard portfolio. Independent assessment using standardised and purpose-developed instruments

enables efficient assessment and provides a basis for reporting that is readily interpreted by learners and by potential employers.

One criticism of independent assessment using standardised instruments is that it decouples assessment from teaching. However, individuals learn in a great variety of situations, including, schools, TAFE colleges, universities, and in workplaces, yet all need to demonstrate similar sorts of competences at different times. Thus, specifying the outcomes rather than attempting to specify both learning processes and outcomes, leaves some flexibility for learners and their teachers. This is analogous to the situation of training packages in which learning objectives and assessment processes are stipulated, but the curriculum through which the skills are developed is a matter of judgement for the education or training provider.

A second and important assessment issue that arises is the choice between single benchmarks and multiple levels of performance. In competency-based training, it is common to specify a single benchmark level of acceptable performance which is either achieved or not met. Given the breadth of application of these important skills and the diversity of learners and of industries and occupations into which they will move, simple benchmarks of performance are likely to be insufficient. There is little support among employers for a single benchmark, especially if it is pitched at a minimum competency level. In addition, in assessing complex performance, such benchmarks may have counterproductive influences on the achievements of cohorts of individuals as their training providers may feel compelled to ensure that the maximum number of individuals achieve the benchmark rather than encourage each person to achieve their individual maximum (see Masters & Forster, 2000). Assessment at several levels is one way of ensuring that each individual strives to achieve a maximum and therefore contributes to high levels of workplace performance.

If multiple performance levels are specified for each competence, learners at lower education levels, for example the end of compulsory schooling, might be expected to achieve Level 1 while university graduates might be expected to achieve Level 5. Further, different skills profiles might be expected in different occupations. This is apparent in the results obtained in the Graduate Skills Assessment project where engineering graduates demonstrate high levels of performance in problem solving and more modest achievements in interpersonal skills, while nursing graduates demonstrate higher levels of interpersonal skills (Hambur & Glickman, 2001).

The assessment methods that have been used in the Graduate Skills Assessment project (outlined in Chapter 2) have demonstrated that it is feasible to assess validly important components of employability skills. Problem-solving, critical thinking, team-work, writing skills, and interpersonal understanding have all been assessed for students in the higher education sector. The construction of the assessment instruments and the methods of analysis used (the Rasch measurement model) have enabled measures of students' performances to be reported along a scale, and for informative interpretative comments to be provided for users. Additional analyses of those performances will lead to the establishment of differentiated levels of performance. Further, a result of the GSA project has been the identification of the distribution of students' achievement. On this basis, individuals can receive a score on each competence along with mean scores for all students and for students of their

particular course. The set of scores on each of the competences assessed constitutes an employability skills profile for each student. Such a profile should be a useful document for prospective employers, as they can see the individual's performance and compare it to national means and, once industries have become accustomed to these reports, to industry expectations.

Considerable work remains to be done on the assessment of employability skills. Other elements ought be included in the assessment of employability skills in order to demonstrate that the full range of these skills can be assessed reliably. In addition, the assessment needs to be extended to the school and VET sectors. There are some complexities in this expansion. The issue of levels of performance becomes more complex, although having a broader range of participants may make the identification of levels of performance more accurate and certainly more useful. In this respect it is worthy of note that the early trials of the Graduate Skills Assessment instruments included a substantial number of upper secondary students (Australian Council for Educational Research, 2000).

Some of the elements of employability skills that are more difficult to measure include the personal and interpersonal skills. A number of instruments through which these skills are assessed exist (Mayer, 2001; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). The measurement of attitude is an important component of the personal dimensions of employability skills and methods in this field are well established (see, eg Anderson, 1997; Wright & Masters, 1981). These methods can be applied to the assessment of key employability skills.

Given the range of purposes that have been identified for employability skills assessment, it seems that several approaches to assessment will be required. The main characteristics of assessment approaches are that, collectively, they should provide:

- a mechanism for communicating the scope of generic employability skills to learners and employers;

- a means of providing feedback to learners on their acquisition of employability skills;

- a rich source of information about individual achievement, with supportive evidence;

- a summary of the performance of individuals that is readily apparent to employers; and

- a cost-effective means of collecting performance information, individually and at aggregate levels.

The suite of assessment and associated reporting arrangements described above, namely teacher judgement, portfolio assessment, workplace-based assessment, and instrumental assessment, collectively meet the desirable criteria for employability skills assessment. Each has been shown to be effective in particular situations. What remains to be shown is that they can be used in concert to meet all objectives for the assessment and reporting of generic employability skills at both individual and aggregate levels.

5.4   Certification and Recognition

An employability skills profile like the one proposed as a result of the assessment and reporting of employability skills could form the basis of a certificate of achievement of these skills. In Scotland, a Scottish Qualifications Certificate, which includes a Core Skills Profile, is awarded and is updated as individuals complete additional qualifications.

The Scottish approach outlined in Chapter 3 depends upon the existence of a centralised data base in which all qualifications achieved by any person with any education or training provider are recorded. If this approach is adopted, all schools, colleges, universities, and Registered Training Organisations would need to add modules to their student records systems so that each time a qualification or module was completed, a notification to a central authority would be generated. At this stage, there does not appear to be a requirement that all training providers maintain electronic records of achievement. While this level of recording and reporting has benefits, it does entail some complexity.

An alternative may be to create the equivalent of a training package that specifies the assessment of employability skills and whose award, rather than being a specified qualification within the Australian Qualifications Framework, is a date-stamped profile statement. Nominated education and training providers or designated testing bureaux could be authorised to administer and score standardised employability skills assessments and to produce a profile for any individual requesting this service. Employers may require applicants to provide evidence of the current status of applicants' employability skills, and this profile would provide this record.

This concept should be market tested among major employer organisations and their members. If there is support for this concept, work could proceed on the extension of the Graduate Skills Assessment scheme to other sectors of education and training, including the extension of the assessment instruments so that more comprehensive evaluation of employability skills can be provided. A widespread demand from industry would be a precondition for the further development of this scheme, but other stakeholders should also be consulted, as the implementation of this approach may have implications for school systems, TAFE colleges and other VET providers, and universities.

5.5   Summary

A number of issues remain to be resolved if an employability skills scheme is to be implemented in Australia. Before effort is expended on this venture, it would be wise to ensure that the conception of employability skills is sufficiently broad to be compatible with international developments and to meet the range of needs of individuals and employers. However, it must also be clearly focused so that a coherent construct, comprising the most important elements of employability, is being assessed. Thus some further work on the definition and selection of employability skills is warranted.

There is a need to ensure that employers and education and training providers are aware of the scope and importance of employability skills for individuals, enterprises, and industries. Support from these stakeholders for the further development of assessment and reporting arrangements for employability skills is essential in order to justify further developmental effort.

There is a sound evidential basis for the valid assessment and reporting of a broad range of employability skills components. Greater use of employability skills portfolios at all levels of education and training will help communicate the central importance of these skills to learners and provide them with a mechanism for documenting their achievements. Assessment of employability skills using an instrument of a type similar to the Graduate Skills Assessment project could form the basis of an Employability Skills Profile statement. This approach could provide summary evidence of performance and would provide data in a form suitable for aggregation.

Some effort will be required to consult with stakeholders and to ensure that there is both an awareness of the scope and importance of these skills and for the form of assessment and reporting that is being proposed.

6. SUMMARY AND CONCLUSIONS

6.1   Overview of Developments

The analysis of Australian and overseas literature in this report has identified a renewed interest in work-related generic or key skills or competencies. In the report these constructs have been referred to as *generic employability skills*. They refer to the knowledge, skills, and attitudes that are required by people to enable them to enter and progress in the world of work. The term *generic* implies that what is learned in one context can be applied in others. *Employability* signals a connection to the world of work that is dynamic and long-term in nature.

In Australia a series of significant reports from 1985 to 1992 culminated in the development of seven employment-related Key Competencies by the Mayer Committee. Considerable work has been undertaken over the past decade to embed the Mayer Key Competencies into Australia's education and training systems. Although much progress has been made, it is timely to take stock.

During the period leading to the publication of the Mayer Report, similar work had been undertaken overseas, most notably in Canada, the United Kingdom, and the United States. During the 1990s these countries and others, for example in the European Union, have continued to develop the concept of key employability skills and their implementation. In addition, the DeSeCo project, an OECD initiative, has undertaken important theoretically and conceptually based work.

Developments in Australia and overseas suggest that the scope of the Mayer competencies could be usefully broadened to better reflect emerging workplace needs and advances in measurement and reporting. The seven Key Competencies endorsed by Mayer remain relevant in the current climate. However, the Mayer Committee also recognised the need to review and update them in the light of changes in Australia's industries and workplaces.

The *National Goals for Schooling* endorsed by Ministers in 1999 emphasised the importance of developing broad employability skills among young Australians. The Goals placed a strong emphasis on the development of personal qualities and learning to learn among young people. The 2001 report by the Youth Pathways Action Plan Taskforce, *Footprints to the Future*, recommended that, in light of the National Goals, relevant authorities and industry groups work together to develop a nationally agreed set of key employability competencies to reflect changes in the workplace during the 1990s, emerging new industries, and changes projected over the next decade.

A comparison of the work completed in Australia with more recent developments overseas reveals that there remains much common ground. The differences are also instructive. The core proposals of the Mayer Committee have been validated in their implementation within Australia and by comparison with more recent work elsewhere. Some differences between the 1992 proposals of the Mayer Committee and the more recent evolution of employability skills have occurred since.

The Mayer Committee was concerned to identify Key Competencies that would be needed by all employees, but especially those entering the workforce directly from the school and vocational education and training sectors. There is a need now to look also at the generic employability skill profiles of older and more experienced labour market participants.

The Committee identified skills that could be taught and that were amenable to credible assessment and reporting. Thus, although the Committee accepted the importance of values and attitudes in employability, they excluded them as the basis of specific competencies because of concerns about their assessment. The methods and technologies for assessment have changed allowing a greater range of skills and attributes to be assessed and reported. For this reason, some of the attributes that were identified by the Mayer Committee as being important, but that were not included as Key Competencies, may now be incorporated within a framework of generic employability skills.

6.2 The Views of Australian Employers

Australian employers have maintained a strong commitment to the concept of generic employability skills from the earliest consultations of the Mayer Committee. However, employers argue that there continues to be scope for improvement in the generic employability skills of school leavers and VET and university graduates. Deficiencies have been reported by employers in the problem-solving, communication, and teamwork skills of recent graduates (ACNielsen Research Services, 2000).

During the 1990s there have been major changes to the context in which Australia's industries operate. There has been rapid growth in the deployment of information and communication technologies and barriers to competition, both within Australia and from external sources, have been lowered. These developments have led to changes in the types of work that are available and in the skill levels required of employees.

There has been an ageing of Australia's population and workforce. Not all new workforce entrants will have the skills required by emerging occupations, and as established industries wane or the skill requirements change as a result of new methods and technologies, established labour market participants will need to renew and diversify their skills. Thus broad employability skills are relevant not only for school leavers and VET and higher education graduates. Increasingly they will become core requirements for all employees.

6.3 An Extended Framework of Generic Employability Skills

In order to meet the requirements of changing work environments, the most productive individuals will be equipped with a diversity of knowledge, skills, and dispositions. Collectively, these are generic employability skills that will be characteristic of employees in high performance workplaces.

The Key Competencies proposed by the Mayer Committee continue to be important components of the set of skills required by workforce participants. However, in other

national schemes and in the work undertaken through the DeSeCo project, a range of additional skills and attitudes have been recognised. Among them is a greater need for flexibility and adaptability in order for individuals to anticipate and respond to the unpredictable changes in the patterns of work and work organisation. Individuals and enterprises will need to learn and to adapt in order to ensure their survival and prosperity.

The brief for this project required that a framework of employability skills be developed, and care has been taken to focus on the framework rather than on the development of a prescriptive list of skills. The framework was described in Figure 4.5. Those generic employability skills that are shown illustrate the main elements that have been identified through reviews of the literature and other national employability skills projects. While the skills that are included have been endorsed by employers, they are not the only skills that could be included. Some employers and industry groups may wish to add skills that are of particular relevance to their situations, and others might prefer to change the emphasis given to certain skills within the framework.

The key structural element of the framework is that it recognises that basic skills, intellectual abilities, and personal attributes are all components of a comprehensive set of generic employability skills.

Basic Skills

The Mayer Report did not identify basic skills as a separate component, although they were represented among the Key Competencies. "Communicating Ideas and Information" is a communication skill and "Collecting, Analysing, and Organising Information" is subsumed under Information Literacy. The need for these skills to be identified separately has emerged as a result of the International Adult Literacy Survey which revealed that many established employees lack the basic skills needed to participate fully in the world of work or in other aspects of their communities. Australia had around 45 per cent of 16-65 year-olds performing at either literacy levels 1 or 2, which are performance levels judged to pose considerable difficulty in daily work and community life (ABS, 1997). Australia had considerably more adults performing at these low literacy levels than the Netherlands (36 per cent) or Sweden (25 per cent). Literacy, based on notions of functional literacy, includes listening and speaking and reading and writing.

The recognition of basic skills as a component of a generic employability skills framework has two broad policy implications. There is a need to ensure that in future all those completing compulsory education and training are adequately equipped in these areas, and for those people who now lack these skills, that opportunities are created to enable them to update and enhance their skills.

Intellectual Abilities

The intellectual abilities that have been identified in Table 4.5 represent those higher order thinking and organisational skills that are valued in workplaces. Many of the skills that could be listed in this category are found among the Mayer Key Competencies and in the overseas generic employability skills schemes presented in

Chapter 3 of this report. "Planning and Organising Activities" and "Solving Problems" are Mayer Key Competencies that fit well within this category. Table 4.5 has extended this category by the addition of organisational abilities such as time and resource management and goal setting and by the inclusion of what tentatively has been called 'contextual understanding.' This is an ability to understand and adapt to the context in which an individual works.

Personal Attributes

The third key element of the proposed framework is labelled 'personal attributes.' Within this group of generic employability skills is the capacity to interact with others. The Mayer Key Competency "Working with Others and in Teams" clearly fits within this category. The originally proposed eighth Mayer Key Competency, "Cultural Understanding", would also be placed here.

Another important generic employability skill in the proposed framework is a focus on the individual taking responsibility for his or her own actions, setting his or her own goals, and taking responsibility for achieving them. Employers have drawn attention to the need for employees to have such attributes. While there have been difficulties in assessing such aspects of personal attributes, this is an area that receives considerable attention in human resource management literature and practice. It has been identified as an important area in other national generic employability skills frameworks, and warrants attention in Australia.

A final important aspect of the Personal Attributes category is a capacity and disposition to continue to learn in order to be able to adapt to emerging developments in the world of work. Since the mid-1990s, considerable international attention has been paid to lifelong learning as an essential ingredient in the prosperity of individuals, enterprises, and countries. This dimension of generic employability skills has received significant policy attention in the United Kingdom in particular, where a range of strategies have been established to support ongoing learning by individuals.

The Consultative Framework in Practice

The framework outlined in Table 4.5 has been organised around three categories of generic employability skills, and this has been done on pragmatic rather than theoretical grounds. On theoretical grounds, the structure of the framework may be criticised. What have been called Basic Skills in the framework clearly do involve Intellectual Abilities. Communicating, using information technology, and being able to locate, use, evaluate, and present information are all thinking intensive activities and therefore it could be argued that this category should be merged with the set of Intellectual Abilities.

Similarly, the Intellectual Abilities listed in Table 4.5 are closely related to individuals' Personal Attributes. People who are not prepared to take individual responsibility for their actions are not likely to perceive organisational problems or to show initiative in seeking solutions. Many of the skills categorised as Personal Attributes themselves depend upon having and using a body of knowledge. For example, to be an effective member of a team requires knowing and reading the signs that others use to signal their intentions and reactions, so Personal Attributes.

The potential theoretical critique that has just been briefly outlined does indicate that generic employability skills, however they are categorised, are not completely discrete entities. There are substantial interdependencies among them. From studies of learning, it is also known that complex concepts are learned and applied in context before they can be generalised. This is no less true for generic employability skills. Thus it can be said that generic employability skills operate in concert and in context.

The particular skills that have been proposed in this report, even though they have received support in the literature on employers' views, are less important than the framework in which other skills can be embedded and in which different skills priorities can be assigned.

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APPENDIX 1: CURRICULUM DEVELOPMENTS IN STATE AND TERRITORY SCHOOL SYSTEMS

Australian Capital Territory

Since 1974, when the ACT school system became independent of the NSW Department of Education, there had been a tradition of school based curriculum development within broad frameworks provided by the ACT Schools Authority and later the ACT Department of Education. The ACT had been an active participant in the development of the National Statements and Profiles and from 1994 they were adopted with minor changes as part of the curriculum frameworks. Although the NS&P were accepted by most teachers, there was some concern that they represented a move towards central curriculum control. In trialling the NS&P, teachers found that the workload associated with profiling students across all strands of all Key Learning Areas (KLAs) was excessive. For primary school teachers, the problem was one of profiling 30 students across eight KLAs while for secondary teachers, the problem was one of mapping 150 students in one or two KLAs. Other problems associated with the profiles included the language used to describe student outcomes and the levels of performance described in them. It was against this background that the Mayer Key Competencies were to be implemented (Willis, 1997, pp 27-47).

Although there are differences between subjects in the extent to which they are covered, the Key Competencies are explicit in the Year 11 and 12 Course Frameworks, and therefore they should be assessed and reported. However, rather than specify levels of performance and have teachers assess students in each of the Key Competencies against these levels, there is a preference for students to develop portfolios in which they are able to provide evidence of their attainment in each of the Key Competencies. As a result of a KC pilot project, a recommendation was made that the Key Competencies should be implemented across all year levels from K to 12 (Willis, 1997, pp 48-9).

New South Wales

There was support in NSW for the NS&P, but there was concern about implementation. Implementation had proceeded well in primary schools, but slowly in high schools. Primary schools were using reporting based on profile outcomes, but high schools were not. High schools had concerns about the workload imposed on teachers in having to report on several hundred students who were seen each week, but for a short time. There was also concern about the rate of curriculum change and a sense of curriculum fatigue is apparent.

Eltis and Mowbray note that: "Pilot project mapping and field testing have clearly demonstrated that key competencies have the potential to be an effective device for enhancing student learning in all curriculum stages. The project findings also indicate that the key competencies are not currently represented in curriculum documents in such a way as to ensure all students have sufficient or equitable opportunity to develop them." (Eltis & Mowbray, 1997, p99).

This suggests that insufficient attention has been paid to implementation of Key Competencies and that the implementation of NS&P has fully occupied systems efforts and teacher time.

Northern Territory

Curriculum matters in the NT are overseen by the NT Board of Studies which seeks to ensure compatibility between NT curricula and those in other parts of Australia. The general requirements of school curriculum are set out in the Board's Common Curriculum Statement. Since 1990 the Board has taken an outcomes approach to curriculum specification, and through it, the NT was involved in the development of the Statements and Profiles for Australian Schools. Although there was support for the concept of profiling, there were concerns about the additional workload involved for classroom teachers. Industrial action in support of improved working conditions during 1995 included a ban on further teacher involvement in profiling activities. Subsequently, NT versions of the National Profiles were developed which included only one outcome statement per strand. The intention of this change was to reduce the workload in assessing students' achievements against the profiles.

Key competencies are identified in the Common Curriculum Statement for implementation. They are mapped and documented in all Stage 1 (Year 11) senior secondary courses accredited since 1995. Year 11 courses were mapped against the three Mayer specified performance levels of each KC. There is no policy on the assessment or reporting of the Key Competencies so they do not feature on the Senior secondary Studies Certificate, nor are they linked to NT Outcomes Profiles (Jacobs, 1997).

Queensland

Prior to 1991, curriculum in Queensland was heavily inputs oriented. In 1992 reporting against outcomes was introduced in English and mathematics. These outcomes, Student Performance Standards (SPS) were based on work being done in SA on Attainment Levels in English and elsewhere on the NS&P in mathematics. Trials of the SPS revealed that there were some difficulties in interpreting the outcomes statements and that much work was required to generate reliable judgements about students' achievements in order to provide valid reports to parents. Industrial action during 1994 caused a hiatus in the implementation of SPS. During 1995, a version of basic skills testing was introduced at year 2, and this appears to have been another distraction in a busy period of curriculum development. Although there appears to have been an intention to introduce SPS in the other six KLAs, little progress has been made.

"Little has been done in Queensland in a formal way to link the Mayer key competencies with work done on the S&P." (Grace & Ludwig, 1997, p161).

Six projects to investigate the teaching, assessment, and reporting of Key Competencies have been in progress in QLD, but their focus has been on post-compulsory years. A project to investigate the development of a student portfolio has been under way. The Board of Senior Secondary Studies has been mapping Year 11

and 12 syllabi to identify the extent to which Key Competencies are inherent in existing curricula and to determine how current certificates of achievement could be modified to incorporate reporting on Key Competencies (Grace & Ludwig, 1997).

South Australia

Since 1990, there have been several major curriculum initiatives in South Australian schools. The Attainment Levels project (1990-91) was designed to establish learning outcomes standards – a change from the specification of curriculum as inputs of content, process, or time allocated. Following the decision of the AEC to leave implementation of the Statements and Profiles to individual states, in SA they were further developed and implemented during 1994-5. Some concern was expressed about the workload implications of reporting against the profiles, the profiles were found to be excessively complex, and the profiles tended to dominate curriculum development rather than providing a balanced component with the statements (Stehn, 1997).

Also during 1994, a project to investigate the feasibility of implementing the Key Competencies and to develop support materials for their implementation was initiated in 16 schools. At about the same time as these DEETYA funded pilot projects were in process, a content analysis of Curriculum Statements was undertaken. This revealed that the knowledge and skills which underlie the Key Competencies were embedded in the curriculum, although the distribution of Key Competencies was not uniform across the key learning areas (Stehn, 1997, p191).

Recently, the curriculum framework under which all government schools, from pre-schools to senior secondary, operate has been revised and the new arrangements are described in the South Australian Curriculum Standards and Accountability (SACSA) Framework. This document builds upon past initiatives in that it incorporates the eight key learning areas and specifies curriculum learning outcomes. The curriculum framework describes 'essential learnings' which are broad generic skills and attributes and they include:

- Futures: develop the flexibility to respond to change, recognise connections with the past and conceive solutions for preferred futures

- Identity: develop a positive sense of self and group, accept individual and group responsibilities and respect individual and group differences

- Interdependence: work in harmony with others and for common purposes, within and across cultures

- Thinking: be independent and critical thinkers, with the ability to appraise information, make decisions, be innovative and devise creative solutions

- Communication: communicate powerfully

(South Australia. Department of Education Training and Employment, 2000)

These essential learnings reflect a basis in lifelong learning and are meant to be developed and employed by students in their learning at school and beyond.

In addition to these understandings, capabilities, and dispositions, the SACSA framework also explicitly incorporates enterprise and vocational education in order to prepare students for future work and recreation in their lives. Five components of vocational education are described. They include the Mayer Key Competencies, career education, work-based learning, community-based learning, and enterprise education.

The last of these is described in some detail as:

> developing enterprising skills and attributes which equip students to identify, create, initiate and successfully manage personal, business, work and community opportunities; and to evaluate achievements using initiative and drive, being creative and innovative, being positive and flexible, making decisions and solving problems, planning and organising, communicating and negotiating, managing resources and people, working cooperatively, and reviewing and assessing

(South Australia. Department of Education Training and Employment, 2000)

Thus, the essential learnings, which reflect some of the Key Competencies but go beyond them to include personal and interpersonal dispositions, subsume the Mayer Key Competencies. In addition, enterprise education reiterates several of the Key Competencies, and again adds to them personal and interpersonal attributes and both pro-active and reflective habits.

The new framework is being implemented at all DETE sites in 2001-02. It will also be used to drive curriculum development in many Catholic and Independent schools. As part of the implementation process, models of assessment under the new framework will be developed.

The intensive efforts associated with the Attainment Levels and Statements and Profiles appear to have exhausted the resources that were available to deal with Key Competencies.

Tasmania

Tasmania had been involved in the development of the NS&P, and when the AEC referred them to states for consideration, the Tasmania Department of Education, Community and Cultural Development distributed them without amendment to schools for implementation. These documents were integrated into the cyclical curriculum review process that had been established previously in Tasmania. Some development of the NS&P has occurred since in an attempt to simplify and reduce the number of outcomes statements, a particular problem for primary curricula. The Tasmanian Secondary Assessment Board is reviewing all year 9 to 12 syllabi to align them with the outcomes statements of the profiles.

Key competencies are being trialed in two projects. One has a focus on teaching and learning the Key Competencies for senior secondary students and the other involves the development of vocational entry syllabi for years 9 to 12 subjects that incorporate the Key Competencies (Pullen, 1997).

Victoria

In 1988 curriculum Frameworks documents for each of nine curriculum areas were published. They included specification of student learning outcomes and heralded this aspect of the NS&P. Howes (1997, p109) notes that by 1992 an orientation to outcomes became much more strident and when the Victorian version of the NS&P, the Curriculum and Standards Framework, was released this became much more overt. There were major objections to NS&P outcomes in mathematics and science, and these led to a review of the NS&P which found that there were significant problems with the outcomes specifications that required revision before implementation could proceed. Howes also notes that the speed of introduction of curriculum reform was a problem for schools and teachers.

The Board of Studies, which had reviewed the NS&P, was also asked to comment on the Mayer Key Competencies. They concluded that the Key Competencies did relate to substantial components of school curricula and that they were already implicit in curriculum documents. They reported that Cultural Understandings suffered from a lack of agreement about its meaning and should not be included with the other Key Competencies. They also found that it would be inappropriate to use Mayer specified performance levels for reporting on student achievement.

Three KC projects showed that:
- Teachers were familiar with and endorsed the Key Competencies.
- There was continuing confusion over the term competency as it is also used in industry to refer to non-transferable skills.
- Key competencies were applicable in a wider range of settings than workplaces.
- There was support for levels of achievement in outcome based reporting, but that the Mayer specified levels were not adequate.
- Names of Key Competencies need to be revised for greater clarity, and that some (Using mathematical ideas and techniques and Using technology) are too narrow in conception to be generic.
- There was support for variations of Cultural Understandings.

The Victorian Minister for Education has requested that the Key Competencies be incorporated in "a state-wide assessment program for secondary students", so that, while Key Competencies have not been fully implemented, there is an expectation that work will continue to embed them in assessment and reporting arrangements (Howes, 1997).

Western Australia

A period of devolution of curriculum and finance issues occurred between 1989 and 1991. This was accompanied by the formation of a new curriculum authority which established Student Outcome Statements (SOS). Following the 1993 decision of the AEC not to endorse the NS&P, WA undertook a period of consultation over them, with most emphasis on the profiles as they could be used to support the development of the WA SOS. As a result of the consultations, most groups accepted the substance

of the NS&P although in some areas there was recognition that some outcomes needed to be rewritten to achieve compatibility with the pre-existing WA curriculum statements. Trialing of the SOS was undertaken and the conclusions were that they would lead to:

- improvement of student learning;
- improved accountability; and
- enhanced teacher professional practices.

There were also concerns. These included;

- the time and workload implications of reporting against the SOS;
- curriculum fragmentation (especially in primary schools);
- assessment skills of teachers would require development;
- teacher judgements were crucial to reporting and these required validation;
- reporting to parents may not be practical;
- the upper levels of the SOS (levels 7 & 8) needed to link with post-compulsory education levels;
- links between SOS and curriculum documents were not apparent; and
- the levels did not always reflect sequences of progression across all KLAs, the descriptions of levels were not clear, and there were too many strands in some KLAs.

The SOS deal with achievement in the eight KLAs. Cross curriculum outcomes, including Key Competencies, also need to be represented. To date, these have not been included (Randall, 1997).

APPENDIX 2:   OVERSEAS DEVELOPMENTS IN GENERIC EMPLOYABILITY SKILLS

Developments in the USA

Initial steps – the early 1990s

In the US, the Report of The Secretary's Commission on Achieving Necessary Skills, (subsequently referred to as the SCANS Report) was released in June 1991 (SCANS, 1991). The Commission's remit was to identify the skills required for employment, to propose levels of proficiency in them, to suggest effective ways to assess them, and to disseminate its findings. On the basis of analyses of the skills required in a range of jobs and in-depth interviews with workers from five major industry groups, the report did define what it called "workplace know-how" which comprised a set of five workplace competencies and three foundation elements.

The workplace competencies were an ability to productively use:
• resources;
• interpersonal skills;
• information;
• systems; and
• technology.

The foundation comprised three elements:
• basis skills;
• thinking skills; and
• personal qualities.

The Commission proposed five proficiency levels for workplace know-how: preparatory, work-ready, intermediate, advanced, and specialist. Since its major focus was on adolescents leaving school and either moving into the workforce or into further education, the Commission was most concerned with the second of these levels. The higher levels are intended to differentiate the performance of experienced workers. Members noted that approximately half of all school leavers would not achieve the work-ready level and that this would continue to generate a problem for enterprises seeking to become or remain world competitive, high performance workplaces. The Commission also acknowledged that many current members of the workforce were deficient in both the competencies and the foundation attributes and indicated that, in order to rectify this situation, lifelong learning would have to become a reality in the US (SCANS, 1991, p20).

Although the report canvassed the issue of assessment of workplace know-how, it was not able to make firm recommendations on this matter. However, it should be noted that the situation in the US is rather different from that in Australia. The report's authors were conscious of the heavy testing and assessment burden borne by American schools and that workplace know-how was not amenable to the type of

testing that was common in the US education system. The report did recommend that assessment of workplace know-how should be undertaken at years 8 and 12 so that the initial testing could yield information on areas requiring particular attention, and again at the end of schooling as an appropriate time to certify students' competences as they entered the workforce or sought further education.

Dissemination of its work was part of the Commission's brief. This was accomplished though the release of a series of reports, including '*What work requires of schools'*. However, this did not achieve the degree of implementation that was implicit in the Commission's charter. Instead, matters of implementation appear to have become caught up in the strong schools reform agenda.

The Commission did identify a challenge. It saw the need to establish a dialogue – based upon a common language – between employers and schools, to set proficiency standards for the components of workplace know-how, and to certify students' achievements (SCANS, 1991, p5). Their definition of workplace know-how and the dissemination of the SCANS reports substantially achieved the first aim. Although tentative proficiency standards have been suggested, the lack of a viable assessment strategy has meant that they have not been widely implemented, and therefore a necessary condition for certification is wanting.

Following the release of the initial SCANS report, a series of subsequent documents appeared. In *A Blueprint for Action* (SCANS, 1992), an implementation strategy was proposed. This was to involve community based action, using the original SCANS report as a starting point and establishing local networks of parents, teachers, students, employers, and unions, and was to be supported through a SCANS Toolkit which comprised a 1-800 number to provide access to SCANS information and resources, a list of Department of Labor regional contacts, contact details of interested organisations, and a bibliography of relevant publications.

In *Teaching the SCANS competencies* (SCANS, 1993) case studies and examples of ways in which workplace know-how has been taught and assessed in schools were presented. This document contributed to the implementation of the SCANS competencies. A section on assessment of workplace know-how by John Wirt identified three problems in the assessment of work-related skills. Students' prior knowledge differs and so even in a common context, their performances will vary, leading to concerns about the validity of assessment. Wirt expresses some doubt about the validity of assessing personal qualities. He also questions the feasibility of assessing students' understandings of complex conceptions such as systems design, relationships, and performance using standard assessment techniques. These concerns suggest that the matter of assessment requires further analysis and that some of the competencies may require elaboration with more precise specification of levels of performance.

Subsequent activity – the late 1990s

The work of the SCANS Commission has continued through a series of projects run through the *SCANS 2000 Center* at Johns Hopkins University (**http://www.scans.jhu.edu/**). Three themes are apparent in their projects: school to work transitions and school reform, welfare to work transitions, and skills

development for incumbent workers. Each of these reflects a concern with different aspects of the implementation of workplace know-how.

The first of these themes includes a project that picks up the major focus of the original SCANS report, being mainly focused on the work-related skills of school leavers. A range of CD-ROM based simulations have been developed for use in high school and college courses to embed the development of the workplace know-how competencies in students' course work. Each has a set of tasks for students to complete for assessment. Further work is planned on assessment and certification of workplace know-how.

The welfare to work theme, a departure from the initial SCANS focus, reflects a concern in many OECD member countries that low initial skill levels leads to low paid work and to poor employment security (See, for example, OECD and Human Resources Development Canada, 1997). These people are also the least likely to undertake further study, therefore to remain among the lowest skilled members of their communities, and therefore to remain the most at risk of marginalisation.

The skills development for incumbent workers program was foreshadowed in the original SCANS report which referred to the need to develop a lifelong learning approach (SCANS, 1991, p20). There is a recognition that globalisation will push advanced economies towards high skill, knowledge intensive industries, that this move will both create a skills shortage as industry seeks highly skilled individuals, and that it will limit opportunities for those workers who lack the advanced skill sets being sought. The Career Transcript and Career Management Project seeks to combine a record of achievement of workplace know-how skills with a other education and training certification and to link these with Career Management Accounts. Career Management Accounts (Individual Training Accounts) are vehicles for dislocated workers to seek career guidance and to fund individually developed education and training programs to enhance the skill base of workers.

In another initiative that seeks to address the skills required by industry, the Vice President established the *21st Century Workforce Commission* (21st Century Workforce Commission, 2000b). This Commission was established in response to concerns about America's competitiveness now and into the future as a result of technological change and globalisation. It seeks to realise the objective of lifelong learning as an element of national competitive advantage. The Commission includes representatives from business, labour unions, education, and government. Its task was to synthesise information on workplace learning in order to enhance the skill base of American workers.

The Commission identified four goals. They are:

- Deliver education, training, and learning that are tied to high standards, lead to useful credentials, and meet labor market needs.

- Improve access to financial resources for lifetime learning for all Americans, including those in low-wage jobs.

- Promote learning at a time and place, and in manner that meet workers' needs and interests.

- Increase awareness and motivation to participate in education, training, and learning.

Their report seeks to build upon the generic skills thrust of SCANS. These are subsumed under its first goal, which also recommends a system of vocationally relevant, industry endorsed, nationally recognised qualifications. The situation in Australia with the Australian National Training Authority, Industry Training Advisory Bodies, training packages, and Registered Training Organisations appears to be a close approximation to what is being recommended.

Strategies to increase the level of financial support for lifelong learning include taxation incentives for both employers and employees to provide and undertake education and training programs and the provision of subsidised loans for tuition.

In order to promote learning arrangements to suit the needs of learners, strategies include the use of information and communications technologies, the establishment of partnerships between educational providers and employers, and making available flexible work/study arrangements.

In order to make employees more aware of the value of education and training, information on job skill requirements is to be promoted more widely, to both enterprises and individuals.

The Commission also released a report *Building America's 21st Century Workforce* (21st Century Workforce Commission, 2000a). This report focuses on changes in the US economy that are likely to result from globalisation and the impact of information technology. It anticipates a skills gap as the US becomes more dependent on IT, and it proposes 9 Keys to Success in the emerging economic environment:

- Building 21st Century literacy
- Exercising leadership through partnerships
- Forming learning linkages for youth
- Identifying pathways into IT jobs
- Increasing acquisition of IT skills
- Expanding continuous learning
- Shaping a flexible delivery policy
- Raising student achievement
- Making technology access and internet connectivity universal

This report represents a departure from the SCANS emphasis on employment related generic skills towards IT specific skills. 21st century literacy subsumes some elements of workplace know-how including thinking skills, teamwork, and proficiency in using technology. However, the core thrust of the document is toward engaging workers in IT, and other elements of the proposal are strategies for achieving this. In common with the original SCANS approach, the implementation strategies include elements of community partnerships involving schools and business and school reform. This

document reveals a greater commitment to giving the notion of lifelong learning substance.

Developments in the UK

Initial steps – the early 1990s

Werner (1995, pp41-47) describes the initial history of the development of core skills. Among his observations, he notes that the Confederation of British Industry wished to include values and integrity, personal and interpersonal skills, and a positive attitude to change, and that these were not fully represented in the list of skills that were eventually endorsed by the National Curriculum Council.

In England, the original list of core skills included:
- communication
- problem solving
- personal skills
- numeracy
- information technology
- competence in a modern (foreign) language

In Scotland, competence in a modern foreign language was excluded.

The first three of this set of core skills was accepted as a component of all National Vocational Qualifications (NVQs) and the remainder, particularly foreign language competence, were thought to be relevant only to some NVQs. Thus the skills were not thought to be truly generic.

These skills were to be integrated into instruction for students in the 16-19 year age group. Thus, they were framed primarily as entry level skills for the workforce and did not form part of a lifelong learning agenda. The core skills were not the subject of specific courses, but were to be integrated into NVQs and into higher school education courses and to be assessed as parts of established courses. However, units of work for the core skills were developed to be used within the courses leading to the NVQs and school examinations. Since the core skills were assessed as part of the NVQs which had no formal examinations but which required that evidence of performance be presented, there was no mechanism by which proficiency in the core skills could be certified.

Five levels of performance were proposed for this set of skills. They were:
- foundation
- craft
- technician/supervisor
- higher technician/junior manager
- professional/managerial

Subsequent activity – the late 1990s

In 1999, a working group chaired by Sir Claus Moser presented a report on adult basic skills to David Blunkett, Secretary of State for Education and Employment (**http://www.qca.org.uk/nq/bs/developing_national_standards.asp**). This led to the development of specifications for basic skills at Entry Level and at Levels 1 and 2 of the National Qualifications Framework. These basic skills are a subset of the set of key skills, which are a revision of the earlier identified core skills. The key skills recognised in England, Wales, and Northern Ireland are:

- communication
- application of number
- information technology
- working with others
- improving own learning and performance
- problem solving

In Scotland, the core skills list is similar, but omits 'improving own learning and performance'.

In England, Wales, and Northern Ireland, a subset of communication and application of number – literacy and numeracy – defined at lower levels, comprise the set of *basic skills*. This set of skills is seen as foundational. Its partition from the originally defined set of core skills may reflect a concern that arose out of the International Adult Literacy Survey (OECD and Human Resources Development Canada, 1997; OECD and Statistics Canada, 1995) which revealed that in many OECD countries including the UK, the US, and Australia, despite high levels of participation and achievement in education by many citizens, substantial proportions of the adult populations exhibited levels of proficiency in literacy and numeracy that would not enable them to function adequately in the world of work. In defining this set of basic skills and in targeting adults, this initiative represents a change in direction from the exclusive focus on new entrants to the workforce or further education embodied in the original core skills approach.

Also in England, Wales, and Northern Ireland a Key Skills Qualification is available. This is based upon the first three of the key skills which are assessed at the five levels of the National Qualifications Framework. (In addition, an entry level of performance is defined). Assessment for this qualification uses both an internal portfolio of learning tasks or work and an external test for each of the key skill areas. This qualification is in effect a profile of achievement across the three key skill areas, as students do not have to achieve the same level on each of the areas. A student could achieve Level 1 on Application of Number, Level 2 on Information Technology, and Level 3 on Communication. This would be recorded on their transcript.

In Scotland, the Scottish Qualifications Authority (**http://www.sca.org.uk**) has established a new Scottish Qualifications Certificate that is issued in place of the Scottish Certificate of Education and the Record of Education and Training that were previously offered. The new Certificate is a comprehensive record of each learner's

achievements. It includes school and college level awards and will include a Core Skills Profile, although it does not include university qualifications. Scottish National Qualifications comprise designated units of study that generally equate to 40 hours of learning. These are combined in clusters of three units to form National Courses. Combinations of Courses and Units form Scottish Group Awards of one year's equivalent full time duration and are the basis of vocational awards. Units are assessed at five levels, from Access to Advanced Higher. Within National Courses, there are designated core skills standards which are integral to the course, so successful completion of the course results in an automatic core skills profile being generated.

Throughout the UK, core, key and basic skills are very closely specified at each level and extensive documentation is available on these skills and their levels of performance.

Developments in Canada

Initiatives in the early 1990s

In the early 1990s the Conference Board of Canada sponsored a series of projects that attempted to respond to the question of educators: "what are employers looking for?". The Conference Board is a forum for leaders from business, education, government and the community, that seeks to address concerns about education in Canada. The projects were organised through the National Business and Education Center, an auxiliary of the Board.

Through research and consultation with employers of all sizes the Board developed an Employability Skills Profile that identified the generic academic, personal management and teamwork skills that are required, to varying degrees, in every job (Conference Board of Canada, 1992). Three broad domains of employability skills were identified:

- *Academic skills*: those skills which provide the basic foundations to get, keep and progress on a job and to achieve the best results.

- *Personal management*: The combination of skills, attitudes and behaviours required to get, keep and progress on a job and to achieve the best results.

- *Teamwork skills*: those skills needed to work with others on a job and to achieve the best results.

Each of the three broad domains comprised a further 3-4 sub-domains (eg Academic skills comprised the skills to Communicate, Think, and Learn), and a number of more specific skills (eg "Write effectively in the languages in which business is conducted). In all, the 1992 version of the ESP comprised some 26 specific skills.

In its dissemination material about the ESP the Conference Board was careful to point out that all of the skills listed in the profile were already either explicit or implicit in general educational goal statements of the Canadian provinces and territories. In effect the Board was arguing that drawing attention to skills necessary for

employability is compatible with and can enhance a school's efforts to meet its other goals and objectives.

There has been extensive take-up of the ESP in Canada (McLaughlin, 1999). By 1997 the profile had been adopted and used in every educational jurisdiction, both in aiding curriculum development and in engaging industry in partnerships with schools.

Another framework in Canada: Essential Skills

The main federal government department concerned with skill formation in Canada, Human Resources Development Canada (HRDC), initiated the Essential Skills Research Project (ESRP) in 1994. The work of HRDC led to nine essential skills being identified. These were:

- Reading Text
- Document Use
- Writing
- Numeracy (Mathematics)
- Oral Communication
- Thinking Skills (problem-solving, decision making, job task planning and organising, significant use of memory, and finding information)
- Working with Others
- Computer Use
- Continuous Learning

These skills, which were initially called basic skills and did not include thinking skills, were described as enabling the learning of other more job-specific skills. The focus of the project was on enhancing the skill levels of workers in relatively low-skill jobs – those requiring no more than completion of secondary schooling. The emphasis on document use, reading texts, writing, and numeracy reflects concerns that arose as a result of the International Adult Literacy Survey (IALS) which found that many workers lacked the basic skills that would enable them to enjoy sustained employment security and contribute to national economic growth.

Although the identified skills were regarded as general, there was a recognition that different levels of these skills would be required in different jobs. The project sought to validate these skills through interviews with employees in a range of low skill occupations. In the first round in 1994-5 800 employees were interviewed, and this has been extended so that by May 2000, some 3,000 people had been interviewed. The interviews focused on: textual reading; use of documents; writing; numeracy; psychomotor skills; oral communication; thinking skills (including problem-solving, decision-making, planning and organising, memory, and finding information); working with others; computer skills; and continuous learning.

Several developments have arisen out of the ESRP. A spin-off project, Test of Workplace Essential Skills (TOWES), has been pursued (**http://www.towes.com/**). This builds upon the work of the IALS and seeks to develop tests of essential skills along similar lines to the IALS assessments. Under the TOWES project, authentic

workplace materials have been assembled and are used in assessing the basic skills of workers. As new versions of the tests are developed for particular industries and occupations, new items using materials from that area are included in the tests. However, common materials are retained so that comparisons of skill levels and requirements can be made across occupations and industries.

In a related project, the Essential Skills Portfolio Developer (**http://portfolio.telecampus.com/**) provides a mechanism by which students and workers can construct a portfolio that incorporates a profile of their essential skills. Such a vehicle provides a means of promoting the importance of essential skills among both potential employees and employers: if enough job applicants present an essential skills profile employers will come to expect it, and if enough employers seek information on applicants' command of these skills, the message will get to future applicants that it is a requirement. Thus, the Portfolio Developer is both a push and pull strategy for disseminating and implementing the use of essential skills profiles.

These profiles have other related uses. Employers, employees, and training providers can use them in planning, developing, and selecting education and training programs. For example, the Applications of Working and Learning (AWAL) data base demonstrates the need for essential skills in a wide range of occupations and may stimulate those seeking particular types of work to develop their skills profiles to match the requirements of particular jobs (**http://www.awal.ctt.bc.ca/english.htm**).

Comparison of essential and employability skills

There are substantial similarities between the two schemes developed in Canada in the early to mid-1990s. Both recognise communication (through writing and reading), numeracy skills, the use of information, and thinking and problem-solving. Both identify continuous learning and both endorse teamwork skills. They differ in that the list of essential skills is more prescriptive about the detailed components of communication, with the essential skills following closely the IALS approach to document, prose, and numeracy assessment. This may reflect the ESRP initial focus on low skill jobs. A significant point of difference is the recognition by the Conference Board of Canada of the importance of attitudes and values in describing the "demonstration of positive attitudes and values, acting responsibly; and being adaptable" as required skills.

Recently, there has been an attempt to bring the two schemes closer together.

Recent developments

The Conference Board has recently published *Employability Skills 2000+* (Conference Board of Canada, 2000a). This enhanced framework has built on the experiences with the 1992 ESP, the work of the Essential Skills project, and a new round of industry and education consultations. The new framework is outlined in Table A1. It is reproduced in detail because it may provide some pointers to developments in Australia.

It is instructive to analyse the changes between the 1992 and 2000 versions of *Employability Skills*. Both employ the same basic structure of three major domains and detailed skill specifications, but there are some significant differences.

- The 2000 version emphasises to a much greater extent the skills needed to progress in the world of work, and not just to enter it.

- The 2000 version emphasises skills can also be applied and used beyond the workplace in a range of daily activities.

- The language in the 2000 version focuses on "your progress in work", and not on "Canadian employers need" as was the case in 1992.

- The "Academic skills" domain of 1992 has evolved to "Fundamental skills" in 2000.

- Several new sub-categories have been added in 2000:
  -- Manage Information
  -- Use Numbers
  -- Work Safely
  -- Participate in Projects and Tasks

- The number of specific skills listed has grown from 26 in 1992 to 56 in 2000.

- The language is expressed in more active terms and demonstrable terms in the 2000 version: eg from "*The ability to plan and manage* time, money and other resources to achieve goals" (1992) to "*plan and manage* time, money etc"

- Overall, the 2000 framework is oriented more towards workers of all ages (rather than more towards new entrants as was the case in 1992), and towards workers being responsible agents in their own development.

Table A1   Employability Skills 2000+, Canada

Fundamental skills	Personal management skills	Teamwork skills
The skills needed as a base for further development *You will be better prepared to progress in the world of work when you can:* *Communicate* • Read and understand information presented in a variety of forms (eg, words, graphs, charts, diagrams) • Write and speak so others pay attention and understand • Listen and ask questions to understand and appreciate the points of view of others • Share information using a range of information and communications technologies (e. g., voice, e- mail, computers) • use relevant scientific, technological and mathematical knowledge and skills to explain or clarify ideas *Manage information* • locate, gather and organize information using appropriate technology and information systems • access, analyze and apply knowledge and skills from various disciplines (e. g., the arts, languages, science, technology, mathematics, social sciences, and the humanities) *Use numbers* • decide what needs to be measured or calculated • observe and record data using appropriate methods, tools and technology • make estimates and verify calculations	The personal skills, attitudes and behaviours that drive one's potential for growth *You will be able to offer yourself greater possibilities for achievement when you can:* *Demonstrate positive attitudes and behaviours* • feel good about yourself and be confident • deal with people, problems and situations with honesty, integrity and personal ethics • recognize your own and other people's good efforts • take care of your personal health • show interest, initiative and effort *Be responsible* • set goals and priorities balancing work and personal life • plan and manage time, money and other resources to achieve goals • assess, weigh and manage risk • be accountable for your actions and the actions of your group *Be adaptable* • work independently or as a part of a team • carry out multiple tasks or projects • be innovative and resourceful: identify and suggest alternative ways to achieve goals and get the job done • be open and respond constructively to change • learn from your mistakes and accept feedback • cope with uncertainty	The skills and attributes needed to contribute productively *You will be better prepared to add value to the outcomes of a task, project or team when you can*: *Work with others* • understand and work within the dynamics of a group • ensure that a team's purpose and objectives are clear • be flexible: respect, be open to and supportive of the thoughts, opinions and contributions of others in a group • recognize and respect people's diversity, individual differences and perspectives • accept and provide feedback in a constructive and considerate manner • contribute to a team by sharing information and expertise • lead or support when appropriate, motivating a group for high performance • understand the role of conflict in a group to reach solutions • manage and resolve conflict when appropriate *Participate in projects & tasks* • plan, design or carry out a project or task from start to finish with well- defined objectives and outcomes • develop a plan, seek feedback, test, revise and implement • work to agreed quality standards and specifications • select and use appropriate tools and technology for a task or project • adapt to changing requirements and information • continuously monitor the success of a project or task and identify ways to improve

Fundamental skills	Personal management skills	Teamwork skills
Think & solve problems • assess situations and identify problems • seek different points of view and evaluate them based on facts • recognize the human, interpersonal, technical, scientific and mathematical dimensions of a problem • identify the root cause of a problem • be creative and innovative in exploring possible solutions • readily use science, technology and mathematics as ways to think, gain and share knowledge, solve problems and make decisions • evaluate solutions to make recommendations or decisions • implement solutions • check to see if a solution works, and act on opportunities for improvement	*Learn continuously* • be willing to continuously learn and grow • assess personal strengths and areas for development • set your own learning goals • identify and access learning sources and opportunities • plan for and achieve your learning goals *Work safely* • be aware of personal and group health and safety practices and procedures, and act in accordance with these	

Employability Skills Toolkit

The *Employability Skills Toolkit for the Self-Managing Learner* was developed by the Conference Board in consultation with schools, provincial ministries of education, trainers and HR professionals (Conference Board of Canada, 2000b). The Toolkit provides information on what employability skills look like, and the ways that they can be developed and demonstrated at home, in education, work and the community.

The Toolkit has been framed expressly in lifelong learning terms to help individuals demonstrate, document and develop their employability skills as they prepare themselves for making transitions. A major publisher will release the Toolkit in lat 2001 in a series of CD-ROMS targeted at different age groups. Wide dissemination is also planned through the Web and seminars across Canada. In addition, the federal department responsible for employment matters, Human Resources Development Canada is planning a wide distribution of the Toolkit through its offices and public libraries. The Conference Board is also offering customised versions of the Toolkit on a fee-for-service basis. The customised versions integrate the material with existing resources of the organisation concerned, tailoring of the examples, counselling and training.

Developments in Europe

The European situation is far from homogeneous. Even among EU Member countries, there are considerable differences in many facets of economic and social activity. There is also variation in the organisation of educational programs among member countries. For example, in Germany and Austria there is a substantial separation between general academic and vocational education streams from an early age, while in Sweden this division is now less apparent as the previously segregated vocational and general secondary schools were integrated in the early 1970s (Abrahamsson, 1999). In Austria, there is a view, expressed by industrialists (Piskaty, Elsik, Blumberger, & Thonabauer, 2000), that this separation, which was productive in the past when Austria was a major manufacturing nation, has led to narrow skills specialisation and no longer delivers people with the broader and more flexible skill sets that are required by emerging knowledge industries. There is also evidence that the traditionally very strong apprenticeship system is breaking down in Austria, partly because the companies that have provided it are finding it less attractive and partly because of a narrow and possibly 'old' range of trades for which apprenticeships are available (Piskaty et al., 2000). Some of these matters are concerns in vocational education and training in Australia.

One of the concerns of European countries is the preservation of their unique languages and cultures within an encompassing European economic union. The issue of language preservation and maintenance appears to drive the requirement for proficiency in a second European language as a core skill. While there is some pressure for such a requirement in Australia, the need for second language proficiency is not as obvious.

Many of the industrialised countries of Europe have suffered economic reversals as manufacturing activity has been partly relocated to developing economies. Young people have borne the brunt of labour market downturns in Europe as in Australia, and in both economies, alternative pathways from education to work continue to be negotiated.

An important influence in much of Europe is the pressure to establish lifelong learning. This arises from several sources of influence. There is a recognition in many countries, for example Sweden (Abrahamsson, 1999), that a substantial proportion of the established workforce is poorly qualified and has a narrow and industrial skills base. There is also the recognition that, with static but ageing populations in much of Europe, most of the future workers in an emerging knowledge economy are those already in the workforce. Thus, there is an obvious need to continuously upgrade the skills of existing workers, and this has led to calls for continuing vocational education. This recognition does not appear to be as strong in Australia. However, as many countries seek to cover skills gaps through immigration programs, advanced economies will be in competition with each other for a limited pool of skilled workers. Depending upon immigration to fill skills gaps would be a risky strategy, and forms of ongoing education seem essential in all developed economies.

The European Training Foundation

The European Training Foundation (ETF) has had primary responsibility for oversight of the Phare program under which considerable aid has been provided to Central and Eastern European countries and also to some other non-European states. The objectives of this program have been to enhance the relevance, efficiency, and capacity of vocational education and training systems in target countries. Under the program, many small projects with quite specific targets are funded in recipient countries. Major themes that have informed the program include:

- the role of the state and the social partners in supporting the links between education and training and the economy;

- the contribution of the world of work to education and training;

- education and training to underpin economic growth processes;

- supporting people at the interface between education/training and work; and

- the role of teacher training in linking education and training and the economy.

(Arbeitstelle für vergleichende Bildungsforschung & European Training Foundation, 1999)

The trends that have informed the projects that have been supported under the program include:

- the demand for new higher level and core qualifications;

- the quest for effectiveness and quality of education provision;

- new approaches to the governance and financing of education;

- diversification of education provision and its tailoring to individual needs;

- enhanced responsibility of institutions and individuals for the outcomes of the education process; and

- a reappraisal of the interaction between education and economic change and development.

(Arbeitstelle für vergleichende Bildungsforschung & European Training Foundation, 1999)

These trends are evident in other more developed countries. However, in Central and Eastern Europe, there are important differences. For the candidate countries wishing to join the EU, the pace of change is great and the organisation and infrastructure on which this change must be built is poorly established. In many European Union member countries, for example Germany, Austria, and France, there has been a traditional partnership between state-funded education systems and private companies. This 'social partnership' is unknown in many candidate countries, as there has been little private enterprise.

In their review of the Phare program, Viertel and Grootings (2001) noted that there had been a need to reform curriculum content and delivery and to make education more responsive to the needs of the emerging market economy (p.31). As part of the process of curriculum renewal, a training manual on the preparation of training curricula was developed (Mansfield & Schmidt, 2000). It is instructive to compare the

scope of training curriculum development advocated in this manual with the components of training packages that are developed in Australia. The approach adopted in this manual includes the components that are both mandated and optional in Australian training packages, but also specifies a curriculum outline.

The Phare program review (Viertel & Grootings, 2001) also noted several approaches that may have relevance to change management in Australian education. One that was reported upon was the use of pilot schools as focal points for specific reforms followed by a deliberate dissemination process to mainstream the changes. In general, the review noted that this model was unsuccessful either because resources were not made available for the dissemination or because there was a lack of "political will" to mandate the dissemination process. The authors cited an exemplary model of this approach in Lithuania in which pilot schools had been partnered with non-pilot schools and in which a cascade or 'each-one-teach-one' model of dissemination had been implemented (p.27). The risks that successful pilot ventures might fail to transfer, but the benefits when they are disseminated, suggest that for change to be successful in the Australian education landscape, specific and deliberate approaches to dissemination and change management will be required.

Within an overall cautious review of the program, Viertel and Grootings (2001) make many observations about the characteristics of successful projects. These include:

- the integration of work and learning;
- the establishment of structures to facilitate the transition from school to work;
- the postponement of career choices to a later age;
- the de-specialisation of education and training programmes;
- increased possibilities to switch horizontally between educational paths and to progress vertically along the educational path;
- an increased autonomy and innovative capacity at school level;
- a shift from input to output control mechanisms;
- the development of continuing vocational education by giving various incentives to encourage the investment in training by both employers and individuals; and
- even more radically, the development of lifelong learning systems allowing to go back and forth between or combine education, training and work during the whole life period of an individual.

(Viertel & Grootings, 2001, p.36)

Some of the reforms that they advocated, such as a national transparent qualifications structure, are well established in Australia. The integration of work and learning, seen widely as desirable, is proving difficult to sustain in Europe and in Australia. Support for continuing vocational education and lifelong learning are seen as desirable outcomes for developed European Union countries, beneficiary candidate countries, and for Australia. However, the mechanisms that would support these outcomes are not in place.

Sweden

In the past, Sweden has been a very successful industrial nation, having emerged from a relatively underdeveloped agrarian economy. However, just as many other developed industrial economies have found, Sweden has faced growing unemployment as manufacturing industry has declined and it is seeking to find a role in the emerging knowledge economy. In this effort, it finds that its workforce is not adequately qualified to meet the emerging needs of the new industries.

Abrahamsson (1999, pp.49-91) outlined a history of the development of vocational education and training in Sweden that is remarkably similar to the British system. His report showed a transition from a guild system, through an informal and privately supported apprenticeship system, to one in which vocational education was supported and provided by the state and with little evidence of the partnerships between education and industry that characterised the German and Austrian apprenticeship model. Major challenges to Sweden's industrial position were followed by changes to the education system in order to make it responsive to the needs of industry. The report documents changes to the Swedish education system in the early 1970s to merge the previously separate general academic and vocational streams to make it both more relevant to the needs of industry for more flexible workers, and also to make vocational options more attractive to students. In this sense there are similarities to the Australian post-secondary situation in which universities are by far the preferred destination of school leavers rather than the VET sector.

One of the differences between Sweden and Australia has been a concern that, as a result of successfully meeting targets for youth participation in education, an equity gap opened between younger and older Swedes, with older workers having lower qualifications and therefore reduced workforce opportunities. Legislation was enacted to provide older and less qualified workers with access to study leave and forms of study support to enable them to upgrade their skills (p.52). Bridging the equity gap has been one of the drivers for policies to implement continuing vocational education and more generally, lifelong learning arrangements.

Workplace-based education and training has become a feature of continuing vocational training in Sweden. Participation in this form of training has varied from 23 to 42 per cent over the past decade, which places Sweden well above other European countries and above the United States (p.84). However, as in many other countries, those workers who are already well qualified participate in this form of education and training at a much greater rate than those who are poorly qualified. Thus this form of education does not address the equity concerns of Sweden.

There has been a change in the focus of education and training for employment to one which places greater emphasis on flexibility and the skills that underpin it.

> Policy makers are increasingly underlining the importance of general education and generic competencies. In practice, this leads to more policy attention on broad programmes instead of early specialisation e.g. an apprenticeship model adapted to a certain vocation. (p.121)

The high speed of labour market transformation and job turnover has an impact on the need for skills and competence of the work force. A significant increase in the provision of competence development at work is of crucial importance for the security

and wealth of employees, but also for Sweden's economic survival in a growing international competition. Competence is no longer just a question of occupational skills. It also comprises the capacity to solve problems, to learn and adapt to changes and to communicate. Social skills are becoming more important in order to work in teams and projects and to meet customers or subcontractors. The success story of an enterprise, to a large extent, depends on its capacity to change its production system. It is a challenge that calls for a flexible work organisation and highly skilled employees. (Abrahamsson, 1999, p.119)

Abrahamsson also recognised the need for enterprise skills: "There is also a debate today on the need for creating the spirit of enterprise in upper secondary education programmes" (p.120). Thus there is evidence of a shift to a more broadly conceived skills base as an outcome of all educational programs.

Austria

The situation in Austria is of interest because of its dependence on a well established and successful apprenticeship model of vocational education. However, support for this model has declined because it has depended upon students making early choices between an academic general secondary education or a vocationally oriented one (Piskaty et al., 2000). Employers are reluctant to continue their involvement with these apprenticeship arrangements because of:

- the tendency for more training time to be spent at school to the detriment of time spent within the company;

- the large amount of administrative red tape to be handled, which is particularly onerous for employers taking on apprentices for the first time;

- the high cost of providing apprenticeship training;

- too stringent and outdated regulations on what activities apprentices are not allowed to carry out during their training.

(Piskaty et al., 2000, p.104)

This indicates a conflict between the immediate interests of employers who may place greater value on job-related skills and policy-makers who perceive the medium term requirements for more generally applicable competences. However, there are other tensions. Apprenticeships are less sought than they have been in the past because they are oriented to established manufacturing industries rather than to the newer industries. Blumberger (1997) showed that although there had been a steady decline in the number of places being sought, there was an even greater decline in the number of apprenticeship places available. Arrangements are being established to overcome both supply and demand aspects of apprenticeships (Piskaty et al., 2000, p.104).

Curricula are also being modified to place greater emphasis on generic skills: "Most curricula now reflect the importance attached to strengthening personal development and social skills." (p.106)

From an Australian perspective, it is clear that partnerships between education and industry are valuable. The German and Austrian experience has its own difficulties, and as a model, it would need to be modified for successful integration into the Australian context.

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