

Whose responsibility?: Literature review & methodology—Support document

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This document was produced by the authors based on their research for the report *Whose responsibility: Employers' views on developing their workers' literacy, numeracy employability skills*, and is an added resource for further information. The report is available on NCVET's website:
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Background to the study

Provision or development?

This support document to the report *Provision and Development: Exploring employer's views of literacy, numeracy and employability* (Townsend & Waterhouse forthcoming) provides an overview of the research methodology and the literature informing the study. Before proceeding to those sections, however, we offer here a brief background to the study.

This research was prompted by our awareness of concerns, expressed by employers and employer lobby groups, about the apparent provision of, and standards of, literacy, numeracy and employment related skills. As we outline in the following review of literature these issues are more complex than most people tend to assume. However despite the complexity, or perhaps because of it, virtually everybody seems to have an opinion on these issues. Passionate debate has waxed and waned over the years as social, political and economic times have changed (Edwards 1990, Brown 2004). Furthermore, Waterhouse (1999) highlights how differing philosophical approaches to education and learning tend to generate quite different conceptions and practices of literacy. Meanwhile the popular press periodically screams about the 'literacy crisis' (ABC TV 2005, Pearson 2006) and politicians express concerns about 'falling standards' in schools (Nelson 2004).

Whilst taking seriously these expressions of concern, and often criticism, we were mindful of the growing complexity of these issues. We were also aware, particularly through our own experience as practitioner-researchers, that workplace literacy, numeracy and employability skills can be difficult to define, measure and quantify. These sorts of skills and attributes can also be latent. They may be present, possibly even relatively well developed, but they may not be demonstrated or applied in the workplace for a range of historical, personal, industrial and cultural reasons. Hence employers may not see them in action, in their workplaces.

The issue raised for employers (and the education system) is whether these skills can be bought and simply imported into the workplace, or whether they must be grown and developed in-house. Is it simply a question of the education and training system's provision of these skills? Or are there issues concerning employers, and workplaces, which require closer attention? Perhaps a simplistic 'buy-in' of the essential skills, will not be very successful for an employer without due attention being given to the in-house learning and development environment.

This thinking led us to the catch-phrase adopted as the working title for this project: '*provision or development?*' In other words, we wondered, does the problem rest entirely in the education and training system's *provision* of these skills?

Given the nature of these skills is it reasonable, or even feasible, for the system to 'provide' completely work-ready graduates that will fully meet employers' expectations? Or is the problem more to do, or also to do, with the continuing *development* and demonstration of these skills in workplaces?

Are employers consumers or developers of these skills? As the study has unfolded it appears that in truth they are both – or at least they need to be.

Research method

Primary research questions:

The primary research questions underpinning the study were as follows:

- ✧ How do employers understand workplace literacy, numeracy and generic/employability skills requirements and the current arrangements for the provision or development of these capabilities?
- ✧ How well, (or to what extent) do employers' perceptions and understandings reflect contemporary research findings about the nature of adult/workplace literacy, numeracy and generic/employability skills?
- ✧ What are the consequences and/or implications of employers' understandings of these issues?

Challenges of data gathering

This project began with a methodology predicated on the collection of data through four conferences or focus groups; one in each of the sectors. Our industry partners suggested that the whole day structure that we had envisaged originally would not be attractive to their constituencies. In their view this represented too much time away from the coal face. This message was also re-enforced through consultations with NCVET personnel and the national adult literacy research advisory committee. The first progress report on the project noted the need and the commitment to be flexible and pragmatic about the approach to data gathering.

Based on this advice the proposed one day conferences were cut down to half-day interactive focus group sessions. This was premised on the advice that a half-day session was the most that could be expected of busy employers. This re-design presented a significant challenge, because our intention had been to add value for the employers in the form of advice resources, and practical strategies which would assist employers in developing programs or responding to language, literacy, numeracy and employability skills issues in their own enterprises.

Subsequent discussion with each of the sectoral representatives on the advisory group, produced a cut down data gathering design, which still included a value added component. We were acutely aware of the need for the WIIFM ('What's in it for me') principle to be inherent in the data gathering strategy with employers. We were also committed to facilitating the dissemination and utilisation of known good practice and research findings on these issues. Relevant print based materials and a CD-ROM were produced to collate research and information which might be useful to employers attending the data gathering sessions.

A series of half day focus groups were promoted by and through our network contacts and peak bodies in each of the sectors: Manufacturing, Community Services and Health, Group Training, and Local Government.

However the response to these promotions was disappointing. In most cases, apart from the local government sector, the conference strategy failed to attract sufficient attendance to gather meaningful data. (This issue is further discussed under 'Employer Engagement' below).

We were interested that those who did attend the local government focus group, the community services and health conference forum and the manufacturing practitioners' forum were focussed

primarily on the 'value added' component of the event rather than providing data to the research team. While some of the attendees were senior managers in human resource or organisational development roles, the majority were education or training practitioners or operatives from the various sectors.

Background research was presented to each employer group to stimulate discussion, from which it was hoped further data could be drawn through dialogue and interrogation. These stimulus and resource materials worked satisfactorily with the limited numbers involved in the initial sessions. While most participants reported that the sessions provided positive and useful learning for them, the research team was frustrated by the difficulty of gaining fresh primary data from the employers.

The data gathering strategy needed to be revisited. At this point we believed that the most appropriate course was to solicit one-on-one interviews with those who were interested enough to talk to us. Our conversations with our research partners confirmed this approach and set us on the path to interviews. Unfortunately this method also proved time consuming.

The following provides a snapshot of events in each sector.

Local Government:

A half day a session was planned and promoted through the offices of the Victorian Local Governance Association. This session was attended by representatives from eight municipal councils. Subsequent examination of the data collected from this event led to the decision to follow up with some of the participants in interviews at their workplaces.

Four interviews were conducted with representatives of four municipalities. These were all relatively large councils, two in metropolitan Melbourne and two councils on the urban fringes.

Community Services and Health

A two hour session grafted onto the Community Services and Health conference: 'Embracing the Future' was planned and promoted by the Community Services and Health Industry Training Board. We were disappointed that only four people attended this session. However it was scheduled as an 'extra' on the original conference program, after the official closing time. Unfortunately, for research purposes, none of those attending were employers nor were they directly representing employers. The attendees were employees of aged care facilities and/or trainers from TAFE institutions. While the data they provided revealed much about literacy/numeracy and employability issues within the aged care industry their perspectives were not those of employers.

Given the experience of the conference session we made a decision to conduct interviews with employers in this sector through referrals from the ITAB. Four employers subsequently contributed to the study through one-on-one, face to face interviews. They included a large metropolitan hospital, a medium sized aged and disability care agency, a health support agency, and a large ancillary services provider in the health care industry.

Manufacturing

On the advice of our industry advisor John Molenaar, from Manufacturing and Engineering Skills Advisory Body (MESAB), we planned to gather data by engaging with individuals and groups already known to be addressing, or have concerns with, literacy, numeracy and employability issues. It was agreed to conduct a targeted series of one to one interviews/discussions with industry/employer representatives.

The manufacturing companies which agreed to interviews, included the Australian operations of three large multinationals involved in producing engineering components, packaging, and industrial tracks and belts, respectively. The fourth company, a branch of a well established

national company, produces mattresses and bedding for the Australian and New Zealand markets.

The four face-to-face interviews were conducted with employers and a subsequent consultation took place with the manufacturing industry Workplace English Language and Literacy practitioners group.

Group Training

A focus group was planned and promoted through Group Training Australia (Victoria). Despite active promotion through the GTA Vic network the scheduled event failed to generate sufficient numbers to run. Following this failure to draw a crowd, it was decided to approach companies directly through referrals from GTA Victoria.

Six metropolitan companies agreed to interviews and contributed to the study. They included 4 larger companies, one of which provides service throughout regional Victoria; 1 industry specific organisation, and another working with a disadvantaged group.

Interviews and validation exercise

In all 27 interviews and/or focused discussions were conducted, recorded and transcribed. Analysis proceeded inductively, looking for themes and patterns in the data; (both within and across the target groups); and relationships to concepts discussed in the literature. From this analysis an initial set of findings was generated, which was fed back to the contributors in a validation process. Through 'snowball sampling', with these individuals, the validation exercise was broadened slightly by feedback from additional employers in the target groups.

Three main themes emerged from the focus groups and interviews, namely, organisational culture and learning, workplace processes and practices, and relationships with providers. These themes were fed back to the contributors for validating. The validation exercise was also broadened via 'snowball sampling' to include feedback from additional employers in the target groups.

The validation exercise carried the initial findings in a series of statements about principles and practices in relation to workplace literacy, numeracy and employability. Employers were asked to express their degree of agreement or disagreement using a Likert Scale.

Literature Review

Issues of definition: A pragmatic and holistic view

As already noted, the issues of definition for these skills are not as simple as many people might assume. Recent research, both in Australia and overseas, has highlighted the complexity and multiplicity of 'literacy (and numeracy) in the new millennium' (Lonsdale & McCurry 2004, McKenna & Fitzpatrick 2004, ALA 2004, Krusche & Yeomans 2005). Various studies have shown that it is no longer helpful to think of literacy and numeracy capacities as simple decoding or calculation skills which are foundational, discrete, autonomous and generic by nature. Such studies have included those looking at ethnic communities (Miralles 2004), Indigenous communities (Kral & Falk 2004), rural and regional settings (Hayes et.al. 2003) workplace settings (Gowen 1992, Sefton et.al. 1994, Waterhouse & Virgona 2004, FitzSimons et al 2005, Jackson 2004) and new technologies (Snyder et al. 2005).

Put simply, the shift is from understanding literacy as a single, static foundational skill; to understanding that people use language and texts in diverse ways according to their differing contexts, purposes and values. The talk is of multi-literacies, rather than a single or universal literacy and each literacy is laced with values, culture and politics (Street 1984, New London Group 1996, Lonsdale & McCurry 2004). As Meek pointed out,

there is no single, neutral literacy that contrasts with illiteracy, or non-literacy ... only a continuum of social practices on which social attitudes depend. (Meek, 1991, p.231)

Lonsdale and McCurry note similarly, that,

The research shows that literacy has no single or universal definition and that its meaning has changed over time from an elementary 'decoding' of written information to a range of more complex and diverse skills and understandings.(Lonsdale & McCurry 2004, p.5)

Furthermore, Waterhouse (1999) highlighted how differing theoretical and philosophical approaches to education and learning tend to generate quite different conceptions and practices of literacy – and therefore what is deemed adequate or satisfactory. A behaviourist orientation to learning and training for instance, tends to see literacy mechanistically; as a value-free set of discrete skills and sub-skills associated with coding and de-coding text. A humanistic orientation to learning sees literacy learning more in terms of personal growth, empowerment and identity formation; a way to enable learners to find their 'voice' and develop their meanings. Whilst adopting a critical approach to learning we see literacy shift again; it becomes a means for social and political change. Such a critical orientation leads us to writers such as Freire, emphasising the dynamic relationship between reading the word and reading the world. "Even the spoken word" Freire says, "flows from our reading of the world" (Freire 1983, p.10). Each orientation carries its own values, purposes and judgements.

Although such research suggests the complexity and the plurality of literacies, Lonsdale and McCurry point out that there appears to be a mismatch between the understandings of researchers and those of policy makers.

Despite the research that shows literacy to be situated social practice, government policy currently is more closely aligned with the concept of literacy as a set of foundational and, by implication, transferable skills. (Lonsdale & McCurry 2004, p.38)

It was against this complex, contested, and sometimes contradictory background that this study sought to investigate the understandings by Australian employers of workplace literacy, numeracy

and employability skills as they apply in their workplaces. We adopted a grounded, pragmatic, and holistic approach informed by recent research on these issues. The understandings informing our approach are discussed below.

On workplace literacy

By 'grounded' approach we mean our focus was on the practical interpretation and utility of these skills as they were perceived by employers in their workplaces. Virgona et.al. (2003) noted how discussion of generic and employability skills is inevitably complicated by the different positions which stakeholders adopt within the debates being played out in the field. With respect to literacy, numeracy, generic and employability skills, there is a policy rhetoric which is inevitably couched in abstract terms. At the policy level these skills are clearly important. However what they actually mean on the ground, in practice, in a workplace, is as Stevenson (1996) pointed out, "not the same" as the abstract conception carried in policy. We were more interested in the meanings carried on the ground than the abstractions of academic or policy language.

In this sense our approach was also pragmatic. Most employers are not particularly interested in, or engaged with, the subtleties of academic (or policy) debates about classifications or definitions of skills. They are concerned with the realities of their workplace. Hence we talked in practical ways about their own understandings of work-related reading, writing, numeracy and communication requirements. We offered our informants a 'broad blank canvas' and invited them to paint us their own 'picture' of these skills in action.

However our own understanding of workplace literacy was consistent with Hull's definition. This reflects a contextualised view, appreciating that literacy is tied to language, purpose(s) and workplace relations.

To be literate in a workplace means being a master of a complex set of rules and strategies which govern who uses texts, and how, and for what purpose. [To be literate is to know] ...when to speak, when to be quiet, when to write, when to reveal what was written, and when and whether and how to respond to texts already written. (Hull 1995, p.19)

Note that such a view also sees literacy as a socio-cultural process which is tied to 'reading the world', at least the world of the workplace, in the manner discussed by Freire above.

Street (1984) echoes the writing of Freire in stressing the political dimension to literacy studies and literacy practices. He defines simplistic technical views of literacy and numeracy skills as 'autonomous' in that they imply that the skills involved are value free, transferable, and finite objects. This, he argues, is not the case. Street argues that in order to better appreciate and understand the nature of literacy we need to understand the context within which literacy practices are being demonstrated and the dynamics of power shaping that context. In this sense he argues that simplistic 'autonomous' views of literacy fail to appreciate the profoundly political and ideological nature of literacy.

what the particular practices and concepts of reading and writing are for a given society depends upon the context; that they are already embedded in an ideology and cannot be isolated or treated as "neutral" or merely "technical". The skills and concepts that accompany literacy acquisition, in whatever form, do not stem in some automatic way from the inherent qualities of literacy, as some authors would have us believe, but are aspects of a specific ideology. (Street, 1984 p.1.)

Nevertheless, the employer proponents of the 'autonomous' view, (Balzary 2004) see the resolution of perceived literacy difficulties as merely instrumental. It is simply a matter of providing these skills to those that appear to lack them, based on a test or assessment. This 'deficit' approach sees workers/ citizens identified as the problem or impediment to social or

industrial growth, which echoes the sentiments in much government policy [see for instance House of Representatives: *Words At Work* (1991)].

While these skills are clearly important research suggests that the reality on the ground is far more complex and fluid. The perceived mis-match identified by Lonsdale and McCurry (2004) has already been referred to above. Contemporary theory recognising the cultural, social and political perspectives as noted earlier, suggests a complex range of interwoven factors that determine what it is to be literate (and/or numerate and/or 'employable') in any given situation.

Jackson (2004) captures this complexity vividly:

We have also found the metaphor of a tapestry very helpful. We see the workplace as a tapestry and literacies as multiple threads woven into the whole. The threads are many and densely interwoven to make a whole cloth. Without the threads there is no cloth, no pattern, no tapestry. And conversely when we take one thread out of the tapestry to examine it, it becomes "just" a thread. It loses the meaning and beauty it had as part of the weave. (Jackson in Belfiore et al. 2004, p.2)

The perspective of literacy that, Freire, Hull, Jackson, and Street suggest is radically different and far more complex than the autonomous view. Given the diverse nature of workplaces and the roles possible within each, this perspective suggests that literacy skill requirements will vary with workplace and task and workplace culture. It also suggests a skilled performance is not possible without a broader understanding about how the workplace operates, and having the authority to act in a particular manner. It also suggests that such practice is deeply embedded in the workplace itself, including its culture and politics. So much so that Gowen (1992, p.68) reports that she suspects "literacy is not really the problem at all" – at least not in the way that employers might believe that it is.

Insights from such research have led, in Australia, to the development of integrated approaches to language, literacy and numeracy within workplace settings (Sefton et. al. 1994, Waterhouse & Deakin 1995, Wignall 1998, Bradley et.al. (Eds) 2000, Waterhouse 2000, Trenerry 2000, Sanguinetti & Hartley [eds] 2000, McKenna & Fitzpatrick 2004, Wickert & McGuirk 2005). These and other studies have reported the potential for literacy learning and skill development through mainstream vocational training and on-the-job engagement. The thrust of the argument is that literacy skills develop through practice when they are utilised in meaningful work and activity. Adopting an integrated approach means folding literacy activities into day to day routines and practices so that it is no longer seen as discrete, special, or particularly difficult. Practical support is provided pragmatically, as circumstances permit, without an overtly educational emphasis. Such approaches take 'literacy' out of school and the 'schoolishness' out of literacy – in the process empowering worker-learners who do not have fond recollections of school or 'bookish' learning experiences.

Such integrated approaches have been shown to be effective, bringing literacy development in the 'side door' rather than confronting the issue head-on. However there is a tension implicit in this approach as funding bodies, quality assurance standards, and assessment processes demand explicit articulation of literacy skills and reporting on how they are being addressed. The danger is that informal and even unconscious learning, whilst enabling worker-learners and facilitating production and work processes, might not be recognised, nor fully appreciated, valued or supported. There is also danger that without explicit attention to the literacy issues and needs they will not be addressed, either formally or informally.

Falk and Miller (2001) and Watson et al (2001) also provide us with a history of the developments in community, government and academic thinking in relation to literacy from the late 20th century until recent times. A recurring theme throughout these reviews of the literature is the significance of literacy as a human meaning-making process within socio-cultural settings –

including workplaces. Hence literacy is inevitably situated, or contextualised, it does not exist within a vacuum.

This socially practiced meaning making can be interpreted through the use of discourse analysis.

Discourses are socially recognised ways of using language (reading, writing, speaking, listening), gestures and other semiotics (images, sounds, graphics, signs, codes) as well as ways of thinking believing, feeling, valuing, acting/ doing and interacting in relation to people and things, such that we can be identified and recognised as playing a socially meaningful role (Lankshear in Gerber and Lankshear eds 2000 p.101)

Language skill, as Jackson suggests, forms just a small part of the larger Discourse. Gee (1990) also uses the discourse approach to explain the behaviour, skill and knowledge which is required to apply skills in secondary discourse situations, those other than the familiar and familial. These include workplaces, churches, bureaucracies, sports clubs and other social settings. To be literate is to have some mastery over the use of language in these situations, to act appropriately in a given context.

Lankshear (2000) offers a different way to think about the complexity of literacy. He describes effective literacy as being three dimensional: with operational, cultural and critical and critical dimensions. These three dimensions, he argues, are integrated and used simultaneously and *all three are necessary for competence*.

The operational dimension refers to ability to apply the literacy, numeracy and language knowledge to any given task. For instance, in a workplace this might mean following a written or verbal work procedure, filling in an application form or recognizing a part label.

The cultural dimension involves reconstructing the meaning inherent in literacy, such that texts need to be understood in relation to the context and the culture in which they appear or occur. In a sense 'literacy events' are always about 'something' and cultural understanding is necessary for effective comprehension and application (or use) of literacy.

In the critical dimension, not only are workers able to apply their skills in a given situation but they are able to improve on the processes or tasks presented. For workplaces this implies not only the ability to be critical and reflective but to have the ability to engage in the type of communication activity that may result in change or improvement occurring.

The ACCI/BCA *Employability Skills For the Future* (2002) strongly promotes this critical dimension in its description of desirable employability skills, which seems to indicate that researchers and employers may be on the same wavelength. Innovation and Business Skills Australia (2005) also highlights the critical dimension in its presentation of essential skills. However the simplistic descriptions of literacy by employers cited earlier do not seem to accord with this level of understanding.

Research by Waterhouse and Virgona (2004) considered workplace literacy in two different industry settings; call centres, and aged care. Adopting the three dimensional approach outlined earlier, the study identified the tensions and apparent contradictions which workers are required to manage in relation to literacy and workplace communication. On the one hand the study confirmed the need for critical literacy skills associated with problem solving and continuous improvement. On the other hand it highlighted the way globalised processes of standardisation are generating a culture of conformance and compliance which leaves little room for 'thinking outside the box' or doing things differently. The report was titled *Two Dimensional Work* to reflect the way spaces for critical thinking and critical literacy are being squeezed.

On workplace numeracy

The recurring theme in the literacy research about the importance of culture and context is also apparent in relation to workplace numeracy. Buckingham (2003), Kelly et. al. (ed.) (2003), FitzSimons et. al. (2005) and Balatti et. al. (2006) have noted how numeracy in and for the workplace is also situated and shaped by culture, context and circumstances in various ways.

FitzSimons et al (2005), in a case study of numeracy learning by workers performing chemical handling spraying tasks in rural Australia, show how numeracy develops through practice or experiences which are linked to significant tasks in a person's life. This includes workplace experiences. The need to solve problems in a complex environment, that is known, creates a situation where mathematical knowledge is used to create new knowledge that could not be predicted in advance.

Workplace numeracy tasks are always a social-historical and cultural practice, in the sense that previous experience and historical data play a major role in determining the reasonableness of answers (Fitzsimmons et al 2005 p.6.)

Such understandings give us a clearer notion of the intrinsic importance or embeddedness of literacy and numeracy use in workplaces. They signal the importance of political, social and cultural factors which contribute to competent performance in workplaces.

Marr and Hagston (forthcoming) also discuss how the term numeracy, like literacy, remains difficult to define and contested. The approach they take in their study investigating numeracy in the workplace is broadly consistent with the approach we have identified above in relation to literacy. They discuss the 'invisibility' of numeracy in the workplace and the way numeracy tends to be embedded in the work.

The means of performing numeracy related tasks in the workplace are highly dependent on the context, embedded within workplace developed routines and tools designed by experienced others and frequently intertwined with other skills or procedures ... The skills in use no longer resemble the 'mathematics' performed at school, and so are not appreciated or 'recognised' as numeracy or mathematics (Marr & Hagston, forthcoming)

Building on the work of Cobden and others they adopt a definition of numeracy which bears similarities to the definition of literacy we cited by Hull (1995) above.

To be numerate means to be competent, confident and comfortable with one's judgements on whether to use mathematics in a particular situation and if so, what mathematics to use, how to do it, what degree of accuracy is appropriate and what the answer means in relation to the context. (Cobden, cited in Marr & Hagston forthcoming)

Of particular interest is the distinction between what might be called 'school maths' and the sorts of mathematics and numeracy required for effective performance in the workplace. By drawing on the work of Martin et. al. (2005), Marr and Hagston sum up the difference this way.

In school mathematics problems have absolute or correct solutions, but there are no real consequences if a wrong answer is given, whereas in the workplace incorrect solutions can have serious and costly consequences, whilst the degree of accuracy or exactness of the outcome is not absolute, but negotiable according to circumstances. (Marr and Hagston forthcoming)

Steen (2001) in addressing the future teaching of mathematics in schools also discusses the difference between mathematical knowledge and the everyday use of numeracy knowledge. She introduces the concept of 'quantitative literacy' as a way to describe how the uses of mathematical knowledge and its associated language are embedded in daily life and culture.

Numeracy is not the same as mathematics, nor is it an alternative to mathematics. Mathematics is abstract and Platonic, offering absolute truths about relations among ideal

objects. Numeracy is concrete and contextual, offering contingent solutions to problems about real situations. Whereas mathematics asks students to rise above context, quantitative literacy is anchored in the messy contexts of real life. Truly, today's students need both mathematics and numeracy. (Steen 2001 p.1).

Interestingly Steen cites a United States Department of Labor report (SCANS) on what the world of work and employment required of schools. In it mathematical performance competencies are described as embedded in terms of 'basic skills' (e.g., arithmetic); thinking skills, including decision making, and problem solving; resource competencies, including allocation of time and money; and information, systems and technology skills. All of which sounds very much like aspects of the Mayer Key Competencies and employability skills. Described in such terms, the interrelatedness of literacy, numeracy and employability skills becomes obvious.

We noted above that we tended to adopt an holistic view of these skills in action. Hence numeracy was not considered as discrete, entirely separate from literacy. In workplace practice, these skills are often used in conjunction with one another. To address a work problem or complete a workplace task might entail gathering and analysing information; using number or mathematical skills; reading, writing and reporting (verbally and/or in writing); using a computer or another piece of plant or equipment; working with other people – perhaps in a team; and quite possibly demonstrating some initiative. In this way, language, literacy, numeracy and generic or employability skills are linked with notions of employability and work performance.

Hence we did not want to treat these skills as discrete and unrelated. As one of our informants noted,

I guess 'literacy' to me emphasises the whole lot, not just plain reading, or verbal communication, or just numeracy skills, because you've got to have everything together.
Local Government.

Our approach to workplace numeracy was informed by understandings such as that offered by FitzSimons et.al

The worksite influences both the type of numeracy skills needed, as well as how they are deployed. In other words, the task, the history of the task (for example, how previous records were taken), and the equipment used determine the sorts of calculations people must be able to make. Once these are learned, they have to be embedded through practice. ...Workplace numeracy education cannot be approached from a traditional 'school mathematics' mentality. Workplace numeracy requires training that reflects workplace practices and incorporates authentic problem-solving in real or simulated tasks in small groups with shared responsibilities. It also needs to incorporate the development of metacognitive skills, such critical thinking, learning to learn, planning and problem-solving. (FitzSimons et. al. 2005)

From generic to employability skills

Reference, in the workplace numeracy discussion above, to skills such as critical thinking, learning to learn, planning, and problem solving highlights again the interconnections between the skills areas which were the focus of this study. The studies cited earlier suggest that appreciating the role of literacy and numeracy in workplace performance is more complex than might be assumed at first glance. Recent studies exploring the concepts of generic and/or employability skills provide further evidence of this complexity.

There is now relatively little disagreement about the importance of generic/employability skills within workplaces and within the labour market. The development of the ACCI/BCA (2002) framework on employability skills funded and published by DEST provides compelling evidence of how employers and policy makers see these issues. Within the VET sector the High Level

Review of Training Packages (Leary 2003, Schofield et al. nd, Schofield & McDonald 2004) also identified the strategic significance of generic skills. Professor Rod McDonald, one of the authors of the review, has commented¹ that this is ultimately one of the key issues upon which the Australian VET system will thrive or fail.

A suite of national research projects (see Gibb, ed. 2004) and a series of research forums which were well attended across the country also show the interest of the vocational training and research communities. All of which is without mentioning the substantial international attention to generic/employability skills (Curtis, 2004, OECD nd).

As with literacy, and numeracy there is continuing debate about definitions and the terminology of ‘generic’ and ‘employability skills’. However there is not the scope in this paper to fully explore these concerns. We note however, that in general terms, all of the various lists and frameworks addressing generic skills tend to address (more or less) the same sorts of skills. The ‘boxes’ and categories vary somewhat, but the overall picture is similar. The table below, for instance, identifies the key skills identified in the ACCI/BCA framework and places them alongside those of the Mayer committee from a decade earlier.

There are significant parallels and areas of similarity. However it is notable that the ACCI/BCA framework includes ‘personal attributes’, and skills involving ‘initiative and enterprise’ as well as ‘learning’ and ‘self management’ skills. These areas, which are in many ways interrelated, were not substantially addressed by the earlier Mayer key competencies.

Mayer Key Competencies (1992)	Employability Skills Framework (2002)
Communicating ideas & information	Communication
Using mathematical ideas & techniques	
Working with others & in teams	Teamwork
Solving problems	Problem solving
	Self management
Planning & organising activities	Planning & organising
Collecting analysing & organising information	
Using technology	Technology
	Learning
	Initiative & enterprise
	Personal attributes

The ACCI/BCA framework document offers its own definition,

Skills required not only to gain employment but also to progress within an enterprise so as to achieve one’s potential and contribute successfully to enterprise strategic directions. Employability skills are also sometimes referred to as generic skills or capabilities or key competencies (ACCI/BCA 2002)

¹ Comments made at the 2004 National Centre for Vocational Education Research Conference, Tweed Heads, 14-16th July.

Hence this study was informed by literature on the suite of skills identified through various frameworks as ‘key competencies’ (Mayer 1992, Gonczi 2002), ‘generic skills’ (Kearns 2001, Virgona et. al. 2003, Gibb ed. 2004) and, with various personal attributes included, ‘employability skills’ (Curtis & McKenzie 2001, ACCI/BCA 2002). These skills typically include those noted just above, as well as skills for effective communication, teamwork and using technologies. They are widely recognised as skills essential for work regardless of the particular occupation or industry of employment.

Virgona et.al. (2003) noted that in colloquial language, these skills

equate with ‘nous’. They are essential to competence, often invisible and relate to learning to work with others (Virgona et .al. 2003)

Studies such as those by Stevenson (1996), Hagar (1999), Kearns (2001) and Virgona et. al. (2003) have highlighted how discussion of generic and employability skills is confused by the differing ideas and positions adopted by various stakeholders. As noted earlier, the abstract conceptualisation of these skills ‘at a distance’ (Stevenson 1996) is not the same as the grounded understanding of these skills as they are applied in a particular workplace situation (Virgona et. al. 2003). As a consequence different stakeholders can be using the same language but not necessarily sharing the same understanding or mindset.

Virgona et. al. (2003) also highlighted important connections between contemporary understandings of multi-literacies and the discourse of generic and employability skills. Interviews with displaced workers, focussing on generic skills, showed how some individuals had skills of which they were not fully aware. Speaking from the perspective of an employee, or a job applicant, Waterhouse says,

It is not enough to have the [generic] skill. I must know that I have the skill. I must be able to name it, to articulate it. There is a literacy of generic skills and employability. I need the language, the vocabulary and the text conventions of resumes, portfolios, job-searching and RCC applications as well. I need to know, and name, and market my skills and knowledge. (Waterhouse 2005)

This insight was highlighted during the research conducted with displaced workers (Virgona et.al. 2003), who found the experience of participating in interviews and focus groups helpful. The discussions enabled them to identify, clarify and find ways of naming their generic skills. This finding led to the suggestion that,

The VET system should therefore consider including a structured approach to teaching people the discourse and language of generic skills and assisting them to develop a portfolio (or profile) of their generic skills which brings together what they have learned through domestic and community activities as well as throughout the phases of their working lives. The task is one of identifying skills developed in situ and recognising their global classification into generic skills relevant to different workplaces. (Virgona et.al. 2003)

Hence the research showed that having generic skills is not necessarily sufficient to empower job applicants in the labour market – even where such skills are in high demand. The skills and attributes need to be carried consciously; and they need to be named, articulated, and often documented in particular ways to realise their potential employment power.

The study with displaced workers suggested there is, in effect, a literacy of generic skills which plays a part in developing and maintaining employability.

The wider policy and research literature suggests key features to bear in mind about employability skills. These ‘skills’ are:

- ✧ deemed essential for employability and life.
- ✧ of interest to policy makers worldwide.

- ✧ developed throughout one's life & career.
- ✧ acquired in context & in multiple settings, often through life-work experience.
- ✧ a responsibility for education sectors & workplaces.
- ✧ a mixed bag of skills & attributes.

Looking more closely we see that generic skills, in action, or in-practice, (like literacy and numeracy) are more complex than many observers might imagine. In brief, we can note that generic skills are:

- ✧ Discussed, and named, at varying levels of abstraction by different stakeholders
- ✧ Highly situated, or embedded, they are profoundly influenced by the particular context in which they must be applied
- ✧ Not inherently transferable, but need to be applied and re-applied in each particular context
- ✧ Developed and demonstrated at varying levels of performance, which are neither fixed nor constant, across settings
- ✧ Not discrete, they are interconnected, and commonly used in an integrated, holistic manner
- ✧ Profoundly shaped by attitudes, values and issues of identity and personality
- ✧ Sometimes latent or 'invisible' – they may be present but not demonstrated or applied because the culture, context and setting are not conducive to them rising to the surface.

We also note that the shift from earlier conceptualisations of key competencies and generic skills to the ACCI/BCA Employability Skills Framework has incorporated elements such as employee (or job applicant) attitude and other attributes for employment which were not included in earlier frameworks. The inclusion of variables such as attitude and personal attributes for employment is contentious and problematic (Payne 2000, Virgona et. al. 2003).

These qualities are much less clearly defined as skills. Payne (2000) makes the point that if what counts as appropriate attributes for work is driven by the subjective judgements of employers, then we are open to the possibility of all manner of socially discriminatory practices. He notes the expectation for the training system to produce appropriately groomed graduates.

Not only does this promise to cast the VET system in a new and unfamiliar role of speech training and personal grooming 'makeovers', but the fact that individuals may be expected to have their personal and class based identities re-engineered in this way raises major ethical concerns as well as the possibility of adverse psychological side effects for those whose self image now comes under closer scrutiny. (Payne 2000, p.363)

Sheldon & Thornthwaite (2005) and Willmott (1993) have similar concerns. Both highlight the way employees' personal identity has been hijacked so that their values and attitudes are determined by corporations. Willmott argues that the current economic culture, which he calls 'corporate culturalism', threatens to undermine the social and intellectual infrastructure of democratic society because it demands that we relinquish critical assessment in favour of unfounded corporate loyalty. (Saul 1997, p.191) develops a similar argument outlining his concerns about the ideology of corporatism 'that denies and undermines the legitimacy of the individual as the citizen in a democracy'. Similarly, Sennett (1998) talks of the 'corrosion of character' created by the modern corporate culture of 'no long term'. He concludes that, 'Detachment and superficial cooperativeness are better armour for dealing with current realities than behaviour based on values of loyalty and service' (Sennett, 1998, p.23).

Nevertheless, it was clear to us that these attitudinal and dispositional variables were part of the agenda so far as employers were concerned.

In the preceding discussion we have attempted to provide an overview of informing literature relating to workplace literacy, numeracy and generic skills. We have also noted the shift from key competencies and generic skills to the employability skills framework. One of the frustrations with this project was the lack of a convenient shorthand term to talk about all of these skills collectively. In our report we have adopted the term employability skills to refer to those capacities, including attitude and personal attributes, identified in the Employability Skills Framework (ACCI/BCA 2002). We have also, on occasion used the term ‘essential skills’ as broader, catch-all term to include employability skills and literacy and numeracy skills. We note that Innovation and Business Skills Australia (2005) have adopted a similar usage.

Against these understandings of literacy, numeracy, generic and employability skills we now move onto discussing their importance from an employer’s point of view.

Employer concerns

Given the nature of workplace literacy, numeracy and employability skills, as discussed above, it is not difficult to link their development and application to a wide range of workplace priorities. These skills are essential for:

- ✧ Effective workplace relationships
- ✧ Contributions to productivity, efficiency & waste minimisation
- ✧ Quality assurance & compliance with mandated standards
- ✧ Improvements in Occupational Health & Safety
- ✧ Problem solving & continuous improvement
- ✧ Workplace learning & organisational development
- ✧ Innovation, flexibility, & market responsiveness

Although schools, families, communities and the wider VET system all have important roles to play in the development of these skills, they are also inescapably work-related issues. The role of workplaces – and therefore employers, cannot be denied. Recent research (Virgona et.al. 2003, Smith & Comyn 2003) has highlighted the role of workplaces as significant sites for the learning and development of these skills and their impact within the workplace can be quite profound.

Hence it is of concern that employer representatives (ACCI/BCA 2004, Balzary 2004) identify gaps or deficiencies in literacy and communication skills, as well as employability skills, as factors that hold back Australia’s march to greater productivity and world’s best practice.

The Australian Chamber of Commerce and Industry in an article titled ‘The Importance of Literacy and Numeracy’ (ACCI/BCA 2004), emphasised the need for prospective and existing employees to possess adequate literacy, numeracy and employability skills *prior to* employment. Thus implying that it is the role of the state, through its institutions, to provide a curriculum which delivers to the workplace, people ready made with appropriate skills.

We have noted earlier that the employers’ position can be generalised as a frustration at the unsatisfactory level of skills (Balzary 2004), which it is claimed results in constrained business growth.

In Australia, the Survey of Investor Confidence undertaken by the Australian Chamber of Commerce and Industry (ACCI) and member organisations has been undertaken for fourteen years and focuses on the direction of investment and constraints placed on investment by various economic and institutional factors. The lack of suitably qualified employees has risen steadily over the years as a significant factor in constraining business growth. In June 2004, the issue was rated as number one over issues such as government regulation, taxation and wage level. The literacy

and numeracy levels of applicants are an important contributing factor in this rating (Balzary 2004, p1).

What is established here is the perception that there is a causal link, in the minds of employers, between literacy and numeracy deficits and inadequate business growth. According to this view Australia's commercial success in the global economy is under threat.

Balzary (2004) goes on to cite similar literacy problems in Canada, USA, and the UK, where the costs to employers, of lost time, accidents and poor productivity involves billions of dollars.

Schools, Higher Education and VET are the organisations, claims Balzary, that are chiefly responsible for correcting this flaw in the supply of skilled recruits and the upskilling of existing workers. The Australian Government acknowledges this as a key responsibility (DEST 2003).

Significant insight into the 'why' of the employer and Government position is revealed in a study by Castleton (2000). She set out to examine concepts of work, workers and literacy 'in order to understand the importance of how particular groups, and the broader community, define and act on their understanding of these relationships in response to contemporary economic and political climates. Castleton's contention is that pronouncements of policy by authorities, such as Government, create hegemony of understanding, in this case, about literacy and workers, which constrains and controls the ways in which individuals and institutions might think about such issues.

We know that this criticism, of the workforce as a cohort, and of the educational institutions that 'prepare' them, has a never ending ring to it (Bessant 1988, Green et al 1997, Mournier 2001). The underlying assumption is that formal education should equate directly to skill demonstrated on the job.

Appreciating work & workplaces

What is really going on? Since the 1980s Australian workplaces have experienced a continuing and unprecedented level of upheaval by restructure, rationalisation, downsizing and casualisation of the workforce. A key element of these strategies is a drive to create greater flexibility (Liberal Party 2004; Buchanan et. al. 2001; DOCEP 2005) in workplaces as a response to perceptions of flagging levels of productivity. These pressures increase in a context of intense internal and international competition.

Rather than leave their brains at home, a feature of earlier Fordist approaches to work organisation and performance, employees are being required to contribute, indeed assume a level of real responsibility for the performance of the firm. The emergence of performance objectives, competency based assessment process, and quality circles attests to this. Where in the past workers traded their technical skills, it is now demanded that they contribute their "person" (Mournier 2001, ACCI/BCA 2002). The employability agenda, as discussed above, is contextualised within a framework of employer determined desirable personal attitudes (Sheldon & Thornthwaite 2005).

Some argue the casualisation and outsourcing of work and the layered contractual arrangement of supply chains has led to an actual reduction by industry in its commitment to training (Sheldon & Thornthwaite 2005). Policy documents now place the responsibility for training at the feet of the employees themselves (Mournier 2001, DEST 2002). The underlying message is that provision is a responsibility of Government, not employers. Employees must evaluate their own present and future skill needs in an extremely turbulent environment where even the employers themselves may not accurately predict future skill requirements. Sheldon & Thornthwaite (2005) argue that this is an environment where workers are positioned to be blamed for commercial failures, rather than the practices of management.

In regard to literacy and numeracy skills this is not a new thing. In interviews with workers and supervisors Castleton (2000) found that workers could be labelled as good or bad on the basis of their performances in safety, or adherence to production processes. In this 'new workplace', where the psychological contract between employee and employer has been weakened, loyalty has become problematic (Mournier 2001, Virgona et.al. 2003, Waterhouse & Virgona 2004, Sheldon & Thornthwaite 2005).

Utilising essential skills at work

Notwithstanding all of the above, employers shape their workplaces. They influence the cultural political and social process that determines how skills will be used. These organisational characteristics may mitigate against the use of particular skills by individuals. Waterhouse and Townsend (2006) in a study of workplace practices found that workers performed tasks which they knew were unsafe, because they perceived that their jobs were threatened. These workers were well aware of the correct process having demonstrated competency through a recent training program. Firms that devolve responsibility to line operators, and track progress through individuals may inadvertently encourage some workers to 'fudge' figures and reports in order to safeguard their positions. The results of these types of activities could easily be ascribed to literacy or numeracy skills deficits. It may be that employers are honing in on literacy numeracy and employability skills as a convenient point of criticism, given that the other aspects (mentioned above) of organisations that influence decision making are far more nebulous, and often unconscious, making them very difficult to describe or quantify in an operational sense.

Gowen (1992) has shown us that workers will resist or refuse to engage in literacy tasks at work if those tasks are perceived to be unfair. Jackson (2000) contends that changing forms of work organisation and consequent social relations are the cause of 'literacy problems' not necessarily the skill deficits of individuals.

As noted earlier, Waterhouse and Virgona (2004) conducted a study of work practices in Aged care facilities in Victoria. They found that the devolution of duties previously ascribed to nurses to Personal Care Attendants, placed enormous burdens on these carers which fundamentally changed the skill requirements of the carer's role. The difficulties were exacerbated by the introduction of strict nationally controlled compliance procedures. Carers also perceived that through this central control, their ability to provide what they perceived as quality care was compromised.

Virgona et.al. (2003) discuss the process of 'transfer' and the application of generic skills within the workplace. They note that,

so far as employers are concerned, the development of effective workplace/organisational cultures is fundamental to this process ... The appropriate [workplace] culture is necessary not only for the 'in-house' development of these competencies but also to 'harness' the generic skills of contractors, sessional and peripheral workers. The nature of these skills is that even when 'present' they may be 'invisible', innate or inactive, like desert seeds waiting for the right conditions to blossom. (Virgona et.al. 2003)

Research has shown that in a sense, in practice, 'generic' skills – including literacy and numeracy skills - aren't really generic at all. The actual skills required for successful performance, that is for full 'competence' – or even (more ambitiously) for excellence – in a given workplace will depend upon the particular culture, context, circumstances, politics and relationships of that workplace. What is required of employees is not a reproduction of performance and practices from their last place of employment or job – but rather a demonstration that they can re-apply their knowledge, skills and aptitudes appropriately in a new context, or on the next job. Hence what is sometimes

simplistically seen as the ‘transfer’ of skills is, in practice, a more complex and active process. When practised skilfully this process creates the appearance of easy transferability.

Flexibility, adaptability and thoughtfulness are required, as well as an understanding of the culture and the norms of the organisation – which are never written down and rarely stated. In relation to literacy and communication in the workplace, for instance, Hull’s (1995) definition of literacy and Cobden’s take on numeracy, cited earlier reminds us that demonstrating skills, such as ‘communication’, or ‘problem solving’, or ‘working with others’, in the workplace depends upon subtle processes of interpretation and judgement.

The culture, politics and practices of the workplace itself can enormously help or hinder these processes. Billett (2003) has highlighted the importance what he calls the ‘affordances’ the opportunities for learning, both formally and informally. These may be widely available to all, or as in some workplaces, limited to just a few.

Figgis and her colleagues (2001) also comment on the importance of the workplace developing a culture which amplifies the value of training and learning. Such a culture recognises, values, utilises and adds value to learning and training initiatives. Such a culture brings generic skills to the surface and promotes their ongoing development. It will enhance and add value to the skills individuals – including new employees – bring into the workplace. However a culture which fails to do these things will not reap the benefits, even when individuals bring skills and aptitude into the workplace.

Further evidence for the importance of the culture and organisational dynamics of the workplace is found in research by Dawe (2002, 2003, 2004). Her study on the determinants of successful training with larger enterprises included a systematic review of literature and a meta-analysis of previously conducted case studies. Dawe reported that *an organisational culture supportive to learning* is one of the three key factors determining the successfulness and effectiveness of training. The organisational culture is the top factor she lists; the other two key factors include mechanisms to link training to the business strategy and to change. This last point regarding the need for deliberate and strategic linkage between learning and change was also explicitly noted in some of our earlier work (Sefton et. al. 1995). The key point here is that the organisational dynamics, and the culture of the workplace, serve to enable or inhibit the development and demonstration of essential skills. Hence their provision, whether from outside the workplace, or from within, is only one part of the story.

Re-thinking ‘skills shortages’: utilisation of skills

Mournier (2001) explains that while education contributes to the formation of skills, through technical and theoretical knowledge and learning to learn skills, only work experience or on the job learning will create an effective skill set. The time taken to develop this skill set will depend on conditions in the industry and/or the organisation. It follows that the employer who provides for a rapid and effective program of on the job adaptation, learning and application should experience fewer problems with employability skills shortfalls.

Both Buchanan(2005) and Keep (2005) make the point that it is not enough to simply assume that skills formulation strategy will naturally provide skills outcomes at work. Both writers argue that the focus needs to be placed on skills utilisation as well. If the degree to which skills are utilised, or not, can be understood, this may lead to a reframing of notion of skills shortage.

As reported earlier, in a study of the use or utilisation of workplace literacies, Waterhouse and Virgona (2004) found that workplace processes actually reduced opportunities for workers to use their skills. In the *rhetoric* of the workplace, workers were expected to operate in the third dimension, that is operate with a high level of autonomy by making critical decisions, solving problems and contributing to workplace quality improvements. However, in *reality*, the

proceduralisation, reporting and external controls actually limited skill development and demonstration to a 'two dimensional' level.

American economist and future thinker Paul Zane Pilzer (2006) comments that in high speed , high performance future-focused world, being master of a complex set of rules and processes is no longer sufficient: one must now be able to recognise when the rules are changing in order to survive and flourish. This involves anticipating, responding and reshaping ones skills, attitudes and understandings to create something that did not exist previously and perhaps could not even be imagined.

Shifts in the national policy perspective

Before closing, we make some brief comments on the policy context from the perspective of government.

The work of various researchers (eg Falk & Guenther 2002, Falk & Millar 2002) shows that Government policy not only serves to shape opinion and practice but can be reflective of the various stakeholders that seek to influence that policy. Hence the views of employers about literacy, numeracy and employability skills may be interpreted through the development of Government policy over the past decades.

In Australia this policy orientation emerged through the Skilling Australia policies in the 1980s, which included the Mayer Key Competencies. These policies culminated in the formation of National VET structures and policy aimed at lifting the skills base of Australian workers. Through competency based training packages aligned to industry sectors, skill sets have been codified into a huge range of discreet certificates, from the simple to complex. The Certificates are derived entirely from workplace or industry requirements, and in that sense are claimed to be demand or market driven. They include key competencies identified originally as 'underpinning,' non-technical or essential 'soft' skills. As discussed above, more recently these skills have become known as generic skills or employability skills. These skills include the ability to calculate, comprehend, communicate, analyse, and organise at levels commensurate with the level and type of work being undertaken. Recent changes to nationally endorsed training packages have included more attention to the explicit embedding of English literacy, numeracy and language skills. Whilst there has been some controversy around these developments Dawe (2002) reports that the explicit identification of these skills within training packages has been, on the whole, a positive initiative which has supported the development of effective integrated approaches.

The developments of recent years, within policy frameworks, and within the tools of the national training system, such as the Australian Quality Training Framework and the many endorsed training packages, show how attention to these issues has evolved since *Words At Work* (1991). That report was the result of an Australian Government consultation. It identified the Australian Government's agenda for creating a globally competitive industry environment. The report attributed lack of progress in this quest to the inadequacy of workers' skills.

The following text demonstrates the thrust of the report, with regard to literacy and numeracy (Castelton 2000):

There is now general agreement that Australia needs a more flexible and highly skilled workforce capable of maximizing its productivity producing quality goods and innovatively exploiting both new technologies and market opportunities. In the drive to achieve these results it has been apparent that poor literacy, numeracy and English language skills of a significant number of adults and youth is an impediment to this occurring. (Australia Parliament House of Representatives, Standing Committee on Employment, Education and Training, 1991, p.5 quoted in Castelton 2000, p.93):

Words at Work (1991) described literacy as:

The integration of listening, speaking, reading, writing, critical thinking and numeracy and involves cultural knowledge as well.

The report clearly recognised the changing literacy demands of workplaces, but did not move beyond a relatively simplistic and functional view of literacy. Such a view is consistent with the 'autonomous' interpretation of literacy discussed earlier by Street (1984).

A little over a decade later, *Employability Skills for the Future* (ACCI/BCA 2002) presents a Commonwealth funded report on research conducted by the Australian Council of Commerce and Industry (ACCI) and the Business Council of Australia (BCA). The report shows how the development of industry policy relating to literacy, numeracy and employability skills has moved on from *Words at Work*. The *Employability Skills* report, funded and published by DEST also demonstrates the degree to which the views of employers and Government are aligned.

Indeed the Senate inquiry into future skills needs (DEST 2003) clearly identifies industry as the leader in determining VET policy and training standards.

In terms of the policy discourse, literacy, numeracy and language have been subsumed, re-badged and substantially re-framed into a range of skills now broadly described as employability skills. These include such abilities as; communication skills, foundation skills, appreciation of context and culture and the ability to independently solve problems. This development in policy reflects some acknowledgement of the complexity and the interdependence of such skills.

However, as Lonsdale and McCurry (2004) point out, the dominant conception of these skills within the policy discourse is still that characterised by an 'autonomous' model which is typically aligned with deficit based approaches to remediation of the perceived problem. Systematic reviews of the literature by Falk and Millar (2001) and Watson et al (2001) provide a more detailed overview of the shifts and trends in the policy discourse relating to essential skills.

Conclusion: a moving feast with 'No Single Measure'

A common theme running through virtually all of the studies cited above is that literacy, numeracy, and employability skills are inevitably embedded within a particular context. These capacities do not exist within a vacuum. They are formed and demonstrated within social and cultural contexts. They are inevitably 'situated' and the situation, or context, determines their form and shape. As Venesky puts it,

Social concepts such as literacy and poverty are integrally tied to their labels. Like jelly and sand they are without intrinsic shape, defined and redefined by the vessels that hold them. Who is literate depends on how we define literacy (Venesky quoted in Allison & Brennan, 1990).

The research suggests there are no single or simple answers on these questions. As Wickert (1989) noted nearly two decades ago, there is 'no single measure' – not for literacy, nor numeracy, nor for any of these complex socially determined capacities. We also now appreciate that these concepts and skills are not fixed or constant. They are 'shape shifters' which need to be understood in context.. Furthermore, since contexts change and people move between contexts, these skills need to be learned and re-learned throughout the lifespan.

The literature review highlights also the significance of the workplace as a site not only for the needed demonstration and utilisation of these skills, but also as a potential place for learning and development of these skills. The significance of the culture and context of the workplace, and the 'affordances' (Billett 2001) the workplace provides, are also highlighted by the research.

On the basis of this body of research, the message on these essential skills then, for employers, is that the higher their expectations of others, including employees, then the higher and more effective their personal standards, modelling, demonstration and practice of these skills needs to be. In particular, employers play a key role in creating the culture and building the possibilities (and the constraints) for the development and application of essential skills. As such, it appears that employers may reap what they have sown.

Finally, we note that there are continuing debates about the interpretations and applications of all of the terms associated with essential skills and the terms are not all synonymous. Language capability does not necessarily imply literacy skills; spelling and writing ability does not confer numeracy skills; mathematical capability does not ensure employability and so on. It was not possible within this project, to investigate comprehensively each of these skills areas in every case. Nevertheless, in practical terms we found employers were able to talk about their interpretations of these skills and hone in on the particular skills which were of interest or concern in their own context.

Whilst the approach to the employer interviews was, as discussed earlier, grounded and pragmatic; our understandings were informed by the theoretical perspectives we have outlined above.

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