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Department of Education, Science and Training

REVIEW OF LITERATURE

WORKPLACE ENGLISH LANGUAGE AND LITERACY

Report prepared for:
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Executive Summary

Introduction

In a global marketplace based on high value-added goods and services, countries need to foster highly skilled workforces to stay competitive. This means not only training new entrants to the workforce but also upgrading the skills of current workers who may otherwise find themselves disadvantaged. As the International Adult Literacy Surveys have shown, a significant number of people in industrialised countries do not have adequate literacy and numeracy skills to cope in a sophisticated economy. In Australia 6.2 million adults were found to be likely to experience difficulty using everyday printed material (ABS 1999). Many of these people are employed, although they are often those most at risk of losing their jobs because of their inability to read and write adequately, to operate computers and/or to do numerical calculations.

Purpose and methodology

The purpose of this review is to inform an evaluation of the Australian Government's Workplace English Language and Literacy Programme (WELL) being conducted by the Department of Education, Science and Training (DEST). WELL has been a key strategy to address literacy and numeracy workforce needs in the workplace in Australia since 1991.

The project team undertook a comprehensive literature search which was then appraised for its relevance to the four research questions guiding the evaluation. These covered the needs of work-based literacy programmes; their impact; performance measurement; and the extent of literature specifically dealing with WELL. In the course of this work the team conducted a gap analysis designed to assist DEST's second phase of the evaluation. In addition, NCVER offers a concept for a future modelling exercise which could capture the quantum economic impacts of the WELL programme.

Findings

The need for basic literacy skills for employed workers is recognised across the OECD, particularly in other English-speaking economies. A British study (Antill et al 2001 or Bates and Aston 2004?) lists the following benefits from a more literate workforce:

- better team performance
- improved labour-management relations
- increased quality
- improved results in job-specific training/quicker training results
- reduced time per task
- reduced error rate
- better health and safety record
- reduced wastage

Delivery

The literature revealed a consensus on the elements crucial to the development of effective language and literacy training in the workplace:

- quality partnerships, particularly between labour, management and trainers

-
- adequate funding, with almost all programmes receiving public funding and encouragement, and offering free provision to workers
 - flexibility in attitudes, models of training and working conditions
 - qualified trainers and experienced literacy teachers able to embed literacy learning into other skills acquisition
 - effective marketing and sensitive handling of the stigma often associated with poor literacy and numeracy, usually including voluntary participation in courses
 - a long-term commitment to the programme, including career guidance and access to further educational opportunities
 - ongoing evaluation of training

There are some barriers for employers, workers and trainers cited in the literature to starting up workplace literacy programmes. These include:

- lack of awareness of the potential benefits from improved literacy for greater efficiency in the workplace, as well as for the individual and their family
- perceived cost, particularly among small and medium enterprises, and logistical difficulties
- stigma of poor literacy
- mistrust or poor communication between labour and management
- difficulties in brokering relationships between employment organisations and training providers
- insufficient professional development for trainers.

Outcomes

Some of the principal benefits observed from raising the basic skills levels of the workforce include:

- improved communication skills and greater confidence
- better earning capacity and employability
- increased ability to handle training on the job
- better team performance and improved labour-management relations
- increased productivity and quality
- better health and safety record.

More specifically, studies show the Workplace English Language and Literacy Programme (WELL) is regarded as being of great importance in supporting provision for literacy and numeracy in training packages by:

- enabling access to literacy training
- improving communication
- creating a better understanding of the advantages of incorporating communication skills in training
- promoting a training culture

The OECD (2002) has highlighted the importance in times of strong employment of continuing to address the needs of low-skilled workers. This is important to enable economies to compete globally in the post-industrial era and to ensure the adequacy of the labour force to meet the drive for future growth. For the individuals, improved literacy and numeracy will contribute to their prospects of remaining in work and sharing in the benefits of prosperity.

Much of the recent research suggests that successful literacy and numeracy training generates social capital, for example people acquiring confidence within new social networks, as well as improving economic, educational or vocational outcomes. This has implications for the measurement of outcomes.

Measuring outcomes

It was clear that the indicators of outcomes used in the research related to either educational outcomes or other outcomes, such as social and economic benefits. The literature identified two frameworks used in Australia to evaluate these outcomes in work-based literacy and numeracy programmes: the Impact Evaluation Instruments and the National Reporting System. While the Impact Evaluation Instruments have the potential to gather useful data on the economic and social benefits, they have not become part of the WELL reporting system. On the other hand the National Reporting System is used but is perceived as time-consuming and limited to reporting on the learning outcomes of programme participants. For the latter reason, earlier trials and pilots recommended the system be used in conjunction with indicators of social, organisational and economic outcomes.

Impact

While many positive and useful findings on the outcomes of workplace literacy programmes were obtained, and sometimes quantified, the literature search found a lack of rigorous quantitative evidence on the wider impact of work-based literacy and numeracy training both in Australia and internationally. Hence, where there had been measurement of programme performance, this focused mainly on outcomes for the individual learner and the workplace and sometimes on cost-benefit analyses, in particular that devised by Hollenbeck in the United States. There were no comprehensive studies on the impact of work-based literacy programmes to Governments in terms of welfare spending, taxation revenue or health budgets.

Measuring impact

As mentioned, few studies have directly measured the impacts of adult literacy programmes to the family, community and wider society. Several researchers suggest that the returns of adult literacy training to the national economy and/or the government can be indirectly measured through the outcomes that accrue to the individual and the workplace. Hence they suggest the individual and enterprise gains will spill over to the national economy and that these individual and enterprise outcomes are more easily measured than country level impacts.

Conclusion

An analysis of the mentions of the WELL programme in the literature reinforced the high regard held for the programme and the many outcomes that accrue to the individual participants and their workplaces. Most of these findings were derived from case study research and commissioned evaluations within enterprises and industries that implemented WELL funded training. There was only one identified review of the overall WELL programme, that conducted by Baylis in 1995, and a few studies that investigated outcomes to the WELL programme using representative samples.

The gap analysis undertaken as part of this literature review identified a need to undertake further work evaluating specific WELL funded initiatives, as well as measuring the outcomes and impacts of workplace literacy programmes.

Any further analyses of the WELL programme may need to devise an approach, which captures all the lessons learnt from practice and all the outcomes reported by those who actually participated in the programme by canvassing as many industries and enterprise types as possible. Alternatively, and if feasible, an approach that explores the quantum economic impacts of the WELL programme could be undertaken.

Introduction

Background

In 2006 the Department of Education, Science and Training (DEST) will conduct an evaluation of the Workplace English Language and Literacy Programme (WELL). As a first step to inform subsequent stages of the evaluation DEST contracted NCVET to undertake a review of literature.

Purpose

The purpose of this project was to review current and applicable literature from sources in Australia and overseas related to the practice of workplace-based English language and literacy training, including but not limited to literacy training integrated with vocational training and the WELL programme.

A set of research questions (see below) were developed by DEST to guide the evaluation of the WELL programme. These questions were used as the framework for the literature search and review.

It was recognised that a literature review in itself would not be sufficient to adequately answer all of the research questions. As part of this project a gap analysis was undertaken to assist in understanding where research evidence is currently lacking. In addition, a concept proposal for undertaking a modelling exercise to better understand the quantum economic impacts of the WELL Programme is provided.

Research questions

The following research questions were used to guide the literature review.

1. What are the needs for work-based English language, literacy and numeracy training, resources and strategic projects? And:
 - What are the likely consequences of not addressing these needs?
 - What are the problems and challenges to addressing these needs? In particular, what are the problems and challenges in Australia?
 - What initiatives, strategies and programmes are available to address these needs, including the WELL programme within Australia and approaches used in other countries? For individual initiatives, strategies and programmes:
 - What are the advantages and disadvantages?
 - Which (if any) are considered to be the international, best practice approach to addressing these needs?
 - Who has developed, promoted and supported similar initiatives, strategies or programmes? Consider the following groups, but not limited to these groups:
 - Australian Government (including WELL);
 - State and Territory governments;
 - Local governments;
 - Private employers;
 - Non-government organisations; and
 - Groups from other countries.

- To what extent do these programmes overlap with each other? (In particular, to what extent does any other programme overlap with WELL?).
 - The importance of literacy training to be integrated with workplace vocational training.
 - The changing needs of industry for literacy training, including integrated with vocational training.
2. Where work-based literacy and numeracy training, integrated with vocational training, has occurred, what changes, improvements and outcomes can be observed in workplaces? In particular, what is observed in respect of the following:
- Communications (for both the employer and the employee).
 - Productivity including improved efficiency, level of outputs and quality control. Investigate causality between literacy training and workplace outcomes.
 - The incidence, benefits and merits of work-based literacy training over classroom-based modes.
 - Occupational health and safety.
 - Employers, including employer attitudes and practices to include employees in consultation process and provide and support training of employees.
 - Employees, including their levels of workplace satisfaction, morale, confidence and skills, participation in teams and meetings, rates of job attendance and retention, opportunities for promotion, enrolment in further vocational training, ability to undertake further training, and achievement of vocational competencies.
 - Workplace culture.
 - Any other notable changes.
3. How can the performance of work-based literacy and numeracy training programmes be measured? What indicators have been used or proposed? For each of these indicators:
- How widely has the indicator been used?
 - What reporting burden(s) does it impose?
 - How successfully has it been implemented?
 - How does literacy and numeracy training translate to employment?
 - Economic consequences, including quantum impacts to other Government programmes (for all levels of Government), contributions to employment outcomes (such as employability, earning potential, productivity) and other outcomes.
 - What are the impacts for government of improving an individual's literacy and numeracy skills in terms of welfare spending and contribution to the economy? What does this equate to in dollar terms?
 - What are the impacts for individuals of improving their literacy and numeracy skills in terms of employability and salary earning capacity?
 - What is the likely increase in tax take from improving any individual's literacy and numeracy skills?
 - Dollar-values of benefits/costs – including reporting burden.
4. In all of the available literature, where has the WELL programme been mentioned?
- In what contexts?
 - What are the observed changes and improvements that are attributed to WELL projects, including any transfers of knowledge between workplaces and any flow-on benefits?

Research and search methodology

A range of electronic bibliographic databases and key websites were identified for use in the literature search. The bibliographic databases were selected because their scope covered the topic of education/vocational education of which adult literacy/workplace literacy is included. A selection of Australian and international websites focussing predominantly on literacy and numeracy, adult literacy and/or workplace literacy were searched in conjunction with the bibliographic database searches. The search methodology and a listing of websites searched are included later in this section.

The seven key databases identified and searched were:

VOCED (Vocational Education and Training Research Database) <http://www.voced.edu.au>
WELL and NALP <http://www.aris.com.au/search.html>
ERIC (Educational Resources Information Center) <http://www.eric.ed.gov>
AEI (Australian Education Index) CD version
BEI (British Education Index) CD version
NALD (National Adult Literacy Database) <http://www.nald.ca/index.htm>
EdNA Online <http://www.edna.edu.au>

Once the databases and websites for searching had been determined a set of keywords and search terms were identified to assist with the search process. To help with the identification and selection of keywords and search terms used throughout the search exercises, four subject specific thesauri were consulted:

VOCED Thesaurus <http://www.voced.edu.au/thesaurus/index.php>
ERIC Thesaurus <http://www.eric.ed.gov>
British Education Index Thesaurus <http://brs.leeds.ac.uk/~beiwwww/beil.html>
the Canadian Literacy Thesaurus <http://thesaurusalpha.org>

Regional variations in spelling such as program versus programme, the use of plurals and differing usage of terms - the core concepts being essentially the same - had to be taken into consideration.

As an example, the search term *workplace literacy* is listed in both the ERIC and Canadian Literacy thesauri (CLT) with similar definitions:

reading, writing, computation, and communication skills performed in the context of job tasks (ERIC)

knowledge of written and spoken language, math, etc. necessary to perform work specific tasks (CLT)

However, the VOCED and British Education Index thesauri do not use the term workplace literacy in their controlled indexes. Therefore searches undertaken on these databases generally used the term work based learning or workplace learning combined with the terms literacy and/or adult literacy. The definition of work based learning as given in the VOCED thesaurus states:

learning that takes place within the work environment using task/jobs for instruction and practical purposes. It may be structured as a formal session or be an information learning situation. Instructional programmes that deliberately use the workplace as a site for student learning. These are formal structured programmes organised by instructional staff, employers and sometimes other groups to link learning in the workplace to students' formal learning experiences. They have formal instructional plans that directly relate to their career goals.

The concept of workplace literacy can also experience regional differences. An example is the use of the terms embedded learning (*embedded teaching and learning combines the development of literacy, language and numeracy with vocational and other skills. The skills acquired provide learners with the confidence, competence and motivation necessary for them to progress, gain qualifications and to succeed in life and at work*) and *basic skills* in the United Kingdom. In the United States the application of the term *workplace learning* included community based learning with involvement of business, higher education and community organisations.

Additional keywords and search terms were also recommended by the DEST advisors after the initial list was compiled. The base list of search terms used throughout the searching exercise included the following:

adult basic education / adult education / adult literacy / Australian government / basic literacy / basic numeracy / basic skills / benefit cost analysis / best practice / cost benefit analysis / cost effectiveness / economic analysis / economic factor / embedded learning / employability / employees / employer / employers / english / english as a second language / evaluation(s) / federal government / information literacy / industrial accidents / initiative / initiatives / interventions / job security / listening skills / literacy / literacy models / literacy needs / literacy strategies / literacy training / literacies / local government / migrant education / national reporting system / NRS / non english speaking / NESB / non government organisations / NGO / numeracy / occupational health and safety / outcomes / performance indicator / performance indicators / private employer / productivity / program / programs / programme / programmes / program effectiveness / programme effectiveness / reading skill / resources / return on investment / ROI / semi skilled / state government / state governments / strategy / strategies / teamwork / technical education / territories (govt) / territory (govt) / turnover / training needs / training program / training programme / unskilled / vocational education / vocational training / WELL programme / workplace english language and literacy programme / work based learning / worker satisfaction / workforce adhesion / workplace education / workplace learning / workplace literacy / workplace safety / writing skill

The searches focussed on literature both Australian and international in nature that addressed questions one through three, were in English and had been produced in the years since 1991.

Searching of the bibliographic databases was undertaken using combinations of identified search terms with the use of boolean operators AND and OR. Generally a broad search was initiated in the first instance with constant refining as the search progressed.

As an example, the use of broad terms such as *workplace literacy* OR *workplace learning* OR *work based learning* OR *basic skill* combined with more targeted search terms such as *workplace english language and literacy programme* OR *adult literacy* OR *non english speaking* OR *NESB* resulted in a list of references that potentially addressed the questions for the review. Potential references were identified and selected by analysing the content of their titles and/or abstracts in the first instance. If the full text was freely available then a quick scan of the content was undertaken if it was thought this would help. For those references that were on the borderline of being pertinent, they were included in the final comprehensive list of references given to the researchers for their considered evaluation of usefulness to the review questions. Where abstracts or full text online were available this detail was included with the appropriate reference.

Website search methodology

Seven Australian websites and twenty-two international websites were initially searched and potential publications were identified by checking the publication sections of the web sites using the following key words as a guide:

Adult literacy and numeracy (particularly in relation to the workplace)

WELL program/me/s
Workplace English Language and Literacy program/me/s
Strategies/outcomes/initiatives in (workplace)
English/language/literacy program/me/s
Assessment of adult literacy program/me/s
English Language
Literacy and numeracy training
Addressing literacy needs
Economics of adult literacy program/me/s
Basic education
Basic skills
Work based learning
Workplace education
Workplace learning
Workplace literacy
Case studies

Outcomes (communication, productivity, improved efficiency, level of outputs, quality control, occupational health and safety, employers: attitudes and practices, employees: workplace satisfaction, morale, confidence and skills, participation, rates of attendance and retention)

Measurement of WELL (mainly focusing on NRS)

If a search function was available, it was used to search the website and the publication pages using combinations of the above key words.

In most instances either by browsing or using the search function, publications were identified by analysing the content of the titles and/or abstracts of the publications. If it was unclear from the title or abstract that the document was relevant and it was available online the executive summary (if available) and the contents pages were checked for relevant key words or reference to literacy in the workplace.

The title, authors' names and publication details of the documents and articles identified in the web search were recorded and sorted in order of the web site the publications were found on. It was also noted if the document was available for download on the web. Any published abstracts available with the document details were included and if not then a brief synopsis was drawn from the executive summary and/or contents pages of these documents.

A separate record was kept to note other relevant web sites and authors' names identified during the searching exercise and these were followed up once the initial search of the Australian and international web sites was completed.

Where the websites included a site map, this was used to navigate the website to check for reports or publications that were not easily located from the home page. Google's 'site' search function was used, using Google to search specific sites for the key words recorded above.

After searching the publications pages and the web sites broadly, a specific scan for references to the Workplace English Language and Literacy (WELL) program/me in international literature was undertaken. The international sites (and other links found along the way) were searched again for specific references to the (WELL) program/me. The Google site search function was also used, searching specifically for the terms:

WELL
WELL program/me
Workplace English Language and Literacy

Workplace English Language and Literacy/program/me

In this search (Australian) sites ending in **.au** were specifically excluded. Relevant documents were downloaded and searched within (i.e. a document relating to workplace literacy) for reference or mention of the WELL program/me. There were very few references to WELL that were not Australian and most results led back to Australian references or documents.

The full list of Australian and International websites searched is in the appendices.

Keywords that worked

As the topic *workplace English language and literacy* and the research questions asked were quite specific there were no individual keywords that worked better than others. What did work well was the combination of key words within the search strategies. As mentioned previously there are regional variations in not only spelling and the use of plurals but also with the differing usage of terms. Therefore when searching what worked best was the use of broad terms such as *workplace learning*, *work based learning* and *workplace literacy* combined with more specific terms that suited the individual research questions being asked, such as *WELL*, *WELL programme*, *program(me) effectiveness*, *evaluation*, *cost benefit analysis*, *non english speaking*, *NESB* and *literacy models*.

Definitions used in this study

Work based learning (VOCED thesaurus definition)

Learning that takes place within the work environment using task/jobs for instruction and practical purposes. It may be structured as a formal session (see On-the-job training) or be an information learning situation. Instructional programmes that deliberately use the workplace as a site for student learning. These are formal structured programmes organised by instructional staff, employers and sometimes other groups to link learning in the workplace to students' formal learning experiences. They have formal instructional plans that directly relate to their career goals.

Workplace learning (VOCED thesaurus definition)

Process of learning through experience at the workplace both formally and informally and through different forms of working arrangements – teams, one-to-one. Also the creation of a learning environment in the workplace.

Workplace education (VOCED thesaurus definition)

Education which occurs at the workplace.

Workplace literacy (ERIC thesaurus definition)

Reading, writing, computation, and communication skills performed in the context of job tasks.

Embedded learning (UK)

Embedded teaching and learning combines the development of literacy, language and numeracy with vocational and other skills. The skills acquired provide learners with the confidence, competence and motivation necessary for them to progress, gain qualifications and to succeed in life and at work.

Vocational education and training

Post-compulsory education and training, which provides people with occupational or work-related knowledge and skills. Alternative terms used internationally include technical and vocational education and training (TVET), technical and vocational education (TVE), vocational and technical education (VTE), and further education and training (FET). At present in Australia the Department of Education, Science and Training appears to be moving to the term vocational and technical education (VTE). VET and VTE may be used interchangeably in this report and in other contexts.

Provision of adult language, literacy and numeracy training in Australia

In Australia at present the provision of adult literacy, numeracy and English as a second language education primarily falls into the following 5 types:

- 'front-end' (or stand alone) programs which explicitly target language and literacy
- education and training (VET) programs which provide integrated literacy or numeracy training as part of a vocational training package qualification
- workplace based programs, including the Workplace English Language and Literacy program, in which training can either be integrated into specific work-related training or offered as a parallel program
- provision through labour market programs for people who are unemployed via the Language, Literacy and Numeracy Program
- community based programs, that are often informal non-accredited programs delivered in community environments

Australian research and data on the full range of language, literacy and numeracy programs and their outcomes in terms of destination of learners and impacts of current provision is thin. NCVER has undertaken an analysis of literacy and numeracy courses using the vocational education and training provider collection and multi-field classification therein (type 1), to be published mid-2006. In addition, NCVER is undertaking a pilot exercise to examine and quantify the amount of integrated literacy provision within publicly funded vocational training programs (type 2), due for completion by end 2006; and a mapping exercise of non-accredited language, literacy and numeracy provision (type 5), also due for completion by end 2006.

Concept of workplace literacy

The International Adult Literacy Survey (IALS) conducted around the world in the 1990s drew attention to a hidden problem—a paucity of literacy and numeracy skills among high percentages of adults living in advanced economies. In Australia, the Australian Bureau of Statistics found that around 45 per cent of Australian adults had inadequate literacy to cope in a sophisticated economy, meaning that 6.2 million Australian adults were likely to experience difficulty using everyday printed materials. The IALS recognised that there are different types of literacy:

- prose literacy or the ability to understand and use information from texts such as newspapers, magazines and brochures
 - documentary literacy or the ability to locate and use information contained in tables, schedules, charts, graphs and maps
 - quantitative literacy or the ability to perform arithmetic operations using numbers contained in printed texts or documents
- (Australian Bureau of Statistics, *Australians' literacy skills: How do they rate internationally?*, Canberra, 1999)

In tandem with these findings came widespread consideration of the skills required by workers to cope with the rapid changes in the new, increasingly technologically driven, economy. These concentrated not only on information technology (IT) and job-specific skills but also on what are often dubbed 'generic' or, in Australia, 'employability' skills (for further information see analysis to question three).

The combination became known as basic skills in the United Kingdom. In the United States they have been developed into the EFF (Equipped for the Future) standards (see Box 1).

Today there is widespread recognition that literacy cannot be defined in a static way and must be considered as embracing a multiplicity of activities associated with modern life and work.

A new International survey, the Adult Literacy and Lifeskills Survey (ALL) will be conducted in Australia by the ABS in the second half of 2006, with findings to be released late 2007. Initial findings have already been released for several countries in Statistics Canada and OECD (2005). The ALL study builds on the IALS. It measures prose literacy, document literacy, numeracy, and problem solving and indirectly assesses additional skills, such as familiarity with and use of information and communication technologies. The initial findings for Norway, Switzerland, the United States and the Mexican State of Nuevo Leon suggest that overall, there has been little improvement in literacy skills since the findings from the earlier survey were released in the mid 1990s with significant numbers of adults with low skills in all countries surveyed.

“Depending on the country, between one-third and over two-thirds of adults did not attain skill level 3, the level considered by experts as a suitable minimum level for coping with the increasing demands of the emerging knowledge society and information economy” (Statistics Canada & the OECD, 2005, p. 31).

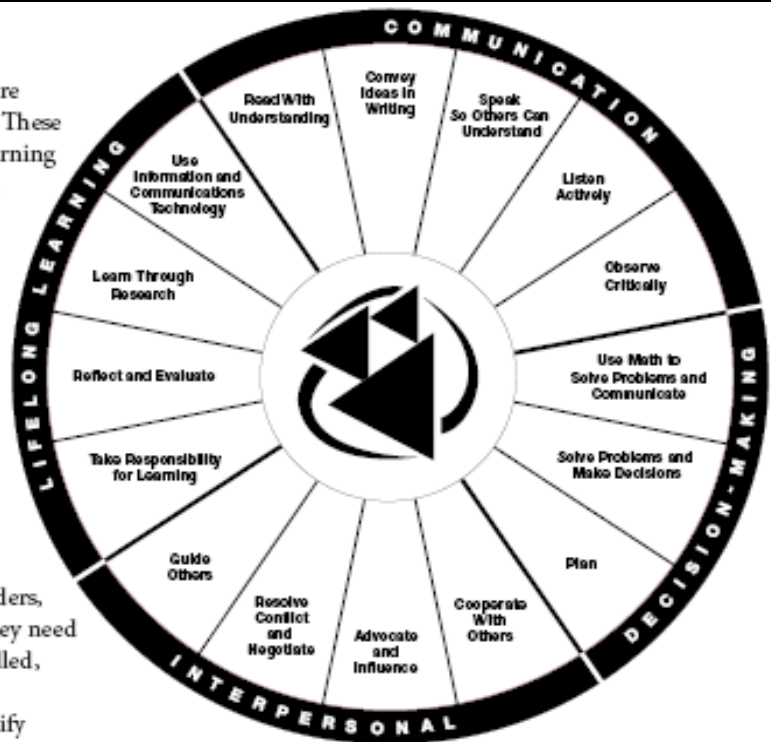
Box 1 US Equipped for the Future (EFF) Standards

What are the *EFF* Standards?

The *EFF* Standards focus on the skills that are essential for success in the workplace today. These include teamwork, problem solving, and learning skills as well the traditional communication skills.

What can *EFF* provide the workforce development system?

- *EFF* facilitates universal access. *EFF* Standards address the needs of the broad spectrum of job seekers who are customers of the new workforce investment system. *EFF* helps
 - workers at every level identify the knowledge and skills they need to stay current.
 - workers at every level create career ladders, identifying the knowledge and skills they need to move from entry-level to higher-skilled, higher-paying jobs.
 - workers whose jobs are changing identify the knowledge and skills they need to stay competitive.
 - single parents and those with little work experience learn how to balance the worlds of family and work successfully, so that they can get and keep a job.



EFF Standards for Adult Literacy and Lifelong Learning

EFF Standards for Adult Literacy and Lifelong Learning

Source: <http://www.nifl.gov/lincs/collections/eff> (accessed February 2006).

Research findings

Question one

What are the needs for work-based English language, literacy and numeracy training, resources and strategic projects?

Introduction

The modern workplace demands the ability to use technology, manage change, communicate and work constructively with people. These skills are all underpinned by a plethora of speaking, listening, reading, writing and numeracy practices, without which people will struggle with training and indeed to keep their jobs. These realities have influenced governments across the OECD to look more closely at language, literacy and numeracy (or basic skills) training within the workforce.

'The Australian national context of workplace reform and restructuring towards a more internationally competitive and productive position has had significant consequences for employees. Restructuring has resulted in leaner organisations requiring a different approach to work. Participative workplace practices and multiskilling are two of those differences' (Baylis, 1995, p.10).

In Australia, the Workplace English Language and Literacy (WELL) Programme, created as a result of the 1991 Australian Language and Literacy Policy, has responded to workplace literacy needs. WELL acknowledges the pivotal role played by language, literacy and numeracy (LLN) in maintaining competitive advantage in the globalised economy. The programme funds language and literacy tuition which is integrated into vocational training to enable workers to meet the demands of their current and future employment and training needs. It is co-funded by the Australian Government and employers and supported by State and Territory governments, industry groups and skills councils.

WELL places English language and literacy training firmly within the context of mainstream training and encourages ownership by enterprise through consultative processes—tripartite agreement between employer, union and provider (Baylis, 1995). The evaluations of its performance are, overall, very positive. Difficulties identified over the years include the professional development needs of WELL trainers (Baylis, 1995; Wyse & Berghella, forthcoming); cumbersome administration, which means employers and RTOs are less likely to seek WELL funds (Brewer et al, 2005) and a reporting process which is not capturing outcomes and other descriptive data (McGuirk et al, 2001).

Critical success factors of effective workplace literacy programmes

Australian literature

Australia is acknowledged to be a leader in the field of workplace literacy programmes. Gardner, for example, is impressed by the way the system has developed from an analysis of communication skills and practice in the workplaces of the new economy rather than from the starting point of a deficit of skills. With the emphasis on the increasing knowledge content of many jobs and importance of teamwork in workplace change the system can accommodate a sophisticated framework of skills development (Gardner, 2001).

Studies in Australia have found the following elements to be crucial to the development of effective language and literacy training:

- a culture which amplifies the value of training and learning (Waterhouse et al, 2006, quoting Figgis)
- quality partnerships and consultation with all stakeholders (McGuirk et al, 2001)
- flexibility in attitudes, models of training and working conditions (McGuirk et al, 2001),
- experience in delivering workplace training and familiarity with competency based curriculum and training packages
- qualified trainers and experienced literacy and numeracy teachers (McGuirk et al, 2001)
- coaching and mentoring (Wakefield & Pearson, 1997)
- a long-term investment in training (McGuirk et al, 2001)
- ongoing evaluation of training (Wakefield & Pearson, 1997).

International literature

These elements recur in the international literature. They are, for example, clearly articulated in the Conference Board of Canada research into workforce development (*Turning skills into profit, Success by Design*, Bloom and Lafleur, 1999), as well as in New Zealand and Irish evaluations of workplace literacy programmes (Workbase, 2002; Conboy, 2002).

Critical success factors identified from the international literature are listed below, recognising that what constitutes success may also present challenges for the design and implementation of effective workplace literacy programmes:

- being clear about the goal of the workplace literacy programme
- ensuring continuous and collaborative consultation between labour, management and trainers
- conducting learning needs analysis which matches both worker and workplace needs
- making the programme voluntary and built around regular systems in the workplace
- having one person who is responsible for the programme and drives it, and who ensures managers commit to releasing people
- being prepared to let staff do the classes in company time
- having a skilled literacy tutor able to select the right learning methods for each learner, and who fits into the workplace
- providing career/educational planning services and access to continuing educational opportunities
- making a long-term commitment
- having access to financial assistance for education and training
- marketing and promoting the programme in a way that takes account of the sensitivities around adult literacy
- conducting sound evaluation of programme effectiveness.

Initiatives, strategies and programmes available to address needs

While the literature review did not uncover any specific comparisons of WELL with other programmes, it did reveal a variety of workplace programmes in the Canada, New Zealand, Ireland, the UK and USA.

Table 9 in the appendix provides an indicative list of programmes identified that are similar to WELL in other countries. In summary:

- In Canada, the Essential Skills and Workplace Literacy programme was established in 2003 to enhance the skill levels of Canadians entering, or already in, the workforce.
- In New Zealand, Workbase was established in 1996 to improve English language, literacy and numeracy skills in the workplace. Workbase is a non-profit organisation that works in partnership with businesses, the education sector and the government. It was awarded the UNESCO International Reading Association's Literacy Award in 2001.
- In Ireland, the National Adult Literacy Agency (NALA) promotes workplace literacy programmes within the vocational education sector and in government. An example of a pilot local government programme was the Return to Learning Initiative (Conboy, 2002) which provided workplace literacy courses for the employees of five local authorities during 2000 and 2001.
- In the United Kingdom, there is a great deal of work taking place to tackle what is seen as a deficit in basic skills. The government has been energetic in promoting its basic skills agenda and has devoted very considerable resources to programmes across the country: £190 million for pilots in work-based training from 2003 to 2005 with a further commitment of £65 million in 2005/06 to start a national roll-out of the National Employer Training Programme (Department for Education & Skills, 2006).
- In the United States the emphasis has been on the learner as worker and citizen. This approach reflects widespread interest in cross-sectoral policy development and joined-up approaches. It places particular emphasis on partnership modes of delivery.

Identification of good practice and similarities across programmes

Payne's (2002) review of basic skills in the workplace in the UK constructed a list of good practice which dovetails with observations in other literature:

- working with the overall policy climate
- basic skills incorporated into overall training and development and the use of specific, job-related material in workplace basic skills provision
- flexible delivery
- career guidance as central to the development of workplace basic skills
- access to continuing educational opportunities which are rungs on the career ladder
- commitment of time
- involvement of workers and (where relevant) their trade union representatives in the workplace strategy
- clear, visible support for the programme from senior management
- marketing, with learning champions and outreach as well as sensitivity about the stigma of poor literacy or the absence of 'basic skills'
- provision which is free to the worker/student, and is offered in working time
- evaluation linked to forward planning of ongoing learning opportunities
- the offer of accreditation where this is required.

The four key similarities that can be highlighted between programmes include:

- central government funding support and long term commitment
- partnerships between government, industry, unions and training providers
- embedded learning, or the importance of literacy training to be integrated with workplace vocational training
- professional development of teachers/trainers

Long term commitment

One striking issue has been the longevity of the WELL programme in comparison with similar approaches reviewed in the literature. Despite repeated mention of the importance of long-term commitment, many initiatives overseas appeared to be 'pilots' rather than established programmes still in existence.

Partnerships

Many governments are acknowledging that it is their responsibility to monitor and lead in certain targeted areas of change and to simultaneously provide the conditions for change to emerge from the knowledge available in local communities (Shore, 2003). A Canadian evaluation (Brisbois & Saunders, 2005) of several workplace programmes found that collaboration between governments, employers and educational institutions had been a major key to success:

- Government provided appropriate regulation and has invested in the development of a framework for improving 'essential skills'.
- Educational institutions contributed assessment tools and training customised to fit the needs of employers and the skill gaps of employees; appropriate, sensitive learning environments; learning materials directly related to employees' jobs; and skilled adult educators.
- Employers made significant private investments, including: paid time for training; marketing of upgrading programmes to both senior management and employees; and community capacity building.

Overall, both in Britain and the United States, as well as in other European countries, there is a stronger emphasis on community involvement in basic skills programmes.

Importance of literacy training to be integrated with workplace vocational training

The majority view is that contextualised workplace literacy programs work, with only a few dissenting voices arguing that literacy and numeracy should be taught as stand-alone subjects and that workplace literacy programmes are too narrow. The dissenting point is based on situations where rudimentary reading and writing skills are lacking and, it is argued, separate and specific classes or tutoring are required (Skill New Zealand, 2002).

The 'embedded' approach is shown to 'produce clear, tangible, more immediate results in job performance and job prospects [with] learners ... more likely to see the relevance of developing literacy skills and the value of practicing those skills on a regular basis.

'Embedded' courses, as they are sometimes dubbed in the United Kingdom, have a number of advantages:

- reducing of stigma
- allowing assessment through stealth
- getting to the hard-to-reach groups
- offering 'practical' outcomes
- encouraging the engagement of employers (Bates & Aston, 2004).

In a recent consideration of how to build literacy capabilities in the community, Wickert and McGuirk (2005) concluded that the integration of literacy, numeracy and vocational skills acquisition had been successful in the WELL projects they examined and may offer strategies that

can be translated into community settings. Like others, they stressed the importance of strong partnerships and joined-up approaches to tackling literacy problems.

Ensuring a strong workplace context can also be expected to strengthen the return to the company from the investment. By using learning materials and learning tasks specifically developed for the requirements of the particular workplace learners can identify an immediate “need to know”. This strengthens motivation, particularly given that new skills can be immediately applied in the workplace. This opportunity to practice and reinforce the learning increases the likelihood that learning will be retained and even transferred to other situations. (Skill New Zealand 2002 p.19)

While there are some who argue that a contextualised adult basic skills programme runs the risk of neglecting transferable generic skills, the contemporary emphasis on preparing workers to cope with constantly changing environments can ensure an appropriate balance between generic and specific skills (Jurmo, undated).

A research review into basic skills in the workplace conducted by the Learning and Skills Development Agency in 2002 (Payne, 2002) identified the strengths and weaknesses of an approach that emphasises basic skills as the foundation for further learning and which ignores the literacy or numeracy needs of workers already in positions of responsibility. These are set out in Table 1.

Table 1 UK Basic Skills (p. 7)

Strengths of the ‘basic skills as a basis for further learning’ approach	Weaknesses of the ‘basic skills as a basis for further learning’ approach
Addresses the low level of educational achievement of many adults	May dilute the emphasis on specific basic skills needs in the workplace which affect workers’ abilities to perform their jobs
Tackling basic skills through the workplace may solve problems of time, money and transport which act as barriers to participation in adult learning	Does not lay sufficient emphasis on basic skills needs which may arise at different levels of skill and responsibility within a work organisation
Has built up political support for action on basic skills at both national and international levels	Can lead to an overemphasis on standardised tasks and tests in the workplace
Emphasises that for many people, basic skills may be just the first step in wider involvement in education and training	Because of the absence of large-scale longitudinal studies, evidence for progression routes is weak

An NRDC study (Casey, 2005) suggests there is no one effective way of organising embedded learning, although its case studies do underline the importance of empathy and respect in the teacher/learner relationship. This reinforces the point made in much of the literature of the importance of the LLN teacher learning how literacy is used in the particular job. This requires a close working relationship between vocational and LLN teachers.

In the Australian context, this means trainers have to be experienced in 'reading' training packages and identifying the underpinning literacy and numeracy skills required for certain competencies. All this involves customisation of resources by training staff (Guenther, undated) and a close working relationship between LLN and vocational experts (see professional development section below).

Professional development

Wignall (2003) explains that the built-in approach (i.e. incorporating language, literacy and numeracy (LL&N)) has had success because it positions literacy across all Australian Qualifications Framework (AQF) qualifications and describes the skills required for workplace competence. This, she argues, removes LL&N from the equity-only domain and links the provision of LL&N delivery and support to the issue of quality delivery and assessment for all learners, not just those with low-level skills.

Such an approach does, however, rely on both trained adult educators who specialise in workplace basic skills as well as vocational trainers who know the workplace and the workers to be served by the programme and can shape the content of the programme to ensure its relevance. Involving other internal stakeholders increases the likelihood of their providing other crucial support such as release time for workers and classroom space.

The work environment of WELL practitioners is expected to continue to change in line with industry expectations and the broader vocational education and training (VET) environment. Increasingly, practitioners have responsibilities not only to develop and implement education and learning programmes but also to apply for and acquit funds. How competently they exercise these functions is, to a significant extent, dependent on their existing baseline teacher/training skills and their professional development opportunities.

Further challenges are the greying of the literacy workforce and its casualisation which makes professional development more complicated to deliver. With the ageing of the LLN specialist workforce, Wyse and Berghella (forthcoming) point to the need for strategies to attract new practitioners with appropriate qualifications and the appropriate skills and understanding of the complex work environment in which they will be operating.

Another forthcoming NCVET study, *Current and future professional development needs of the language, literacy and numeracy workforce*, found that only 31.8 percent of paid participants surveyed across New South Wales, Victoria and South Australia were permanent employees. The rest, who were part-time casual and sessional language literacy and numeracy trainers, did not have reasonable access to employer-funded professional development activities. Similarly geographically remote workers suffered poor access to professional development. Redressing this inequity, the researchers argue, is critical to upskilling the language literacy and numeracy workforce.

Problems and challenges with addressing workplace literacy needs

Several studies refer to the stigma associated with poor literacy (although much less so with poor numeracy). This can be a barrier to effective programmes unless treated sensitively. For example, Millar (2001) in her investigation of the role of the WELL Programme in supporting provision for literacy and numeracy in training packages quotes the Executive Officer of the Tasmanian Tourism Industry Training Board:

‘Literacy’ is often conceived of in deficit terms and is associated with social stigma. ITAB officers and RTO trainers avoid using the term ‘literacy’, and find they reach people more effectively by referring to ‘workplace communication’.

Those workers most in need of literacy and numeracy training are often the least able to access training. A stocktake of adult literacy (Shore, 2003) suggests that people with low levels of literacy enrolling in vocational education and training courses are less likely to access workplace training, particularly if they are casual workers, labour hire company employees or ‘portfolio’ workers. The

study does, however, acknowledge that WELL programmes do provide some avenues for such 'transient' workers.

Barriers cited in the literature to starting up a workplace literacy programme include:

- perceived cost (Long, undated), particularly among SMEs (Brisbois & Saunders, 2005; Bates & Aston 2004)
- difficulties organising staff release (Bates & Aston, 2004), particularly in workplaces operating on shifts or on multiple sites, and concerning teaching locations and timing
- literacy needs being hidden by employees
- employers' lack of recognition of the 'basic skills' agenda and/or willingness to take action, with several mentions that business does not see literacy as its responsibility (Bates & Aston, 2004; Balzary, 2004; Waterhouse et al, 2006; Taylor, 2000)
- resistance from line managers who have conflicting operational targets and objectives and/or may themselves have basic skills needs and feel threatened or undermined by other staff pursuing such development (Bates & Aston, 2004)
- mistrust or poor communication between labour and management (Long, undated; Bates & Aston, 2004; Taylor, 2000)
- lack of a learning culture, including the belief that training employees will encourage them to leave for a better job and seeing basic skills as a way of weeding out people for redundancy (Bates & Aston, 2004)
- difficulties in brokering relationships between employment organisations and training providers (Bates & Aston, 2004)
- insufficient professional development for trainers. (Trenerry, 2002). In the Australian literature professional development is seen as an important element in ensuring the success of incorporating LLN into training packages. One recent study (Wyse & Berghella, forthcoming) of the professional development needs of WELL practitioners has identified three subject areas to be incorporated in professional development programmes:
 - **workplace environment** covering topics such as global and local workplace issues, government policy, developments in the VET system, and the impact of new technologies on the workplace
 - **programme management**, covering client management; application and report writing; budgeting; curriculum/resource development
 - **LLN practice**, with topics such as the new literacies and their impact on pedagogy; LLN in training packages; identifying LLN in workplace tasks and practice; developing learning and assessment strategies, tools and programmes; using new technologies as teaching tools; working with content specialists.

It also emerges in the literature that there is less emphasis on numeracy than on literacy, despite the growing need for more sophisticated mathematical skills in the workplace. One UK study suggests this may be because employers see it as the role of schools to produce numerate employees (Payne, 2002). Yet FitzSimons and Mlcek (2005) have shown that the worksite influences both the type of numeracy skills needed as well as how they are deployed and is therefore a suitable place for numeracy training.

Likely consequences of not addressing needs

Global competitiveness reduced

Countries around the world now compete in a global marketplace on the basis of high value-added goods and services. While India and China currently compete on the basis of lower labour costs, with around 20 million graduates in China and 2 million new graduates each year in India, they are fast developing skilled workforces (Department for Education and Skills, 2006).

A globalised job market poses a threat to low-skilled workers in developed countries, including Australia, and puts pressure on governments to maintain protectionist measures, even if these are not in the best interests of the overall economy. Steven Kull, a leading US analyst of public opinion on trade, has suggested that such pressure can be alleviated by public investment in training which helps workers adapt to changes in the economy. In a study published in 2000, for example, 87 per cent of Americans polled agreed with the statement, 'I would favor more free trade, if I was confident that we were making major efforts to educate and retrain Americans to be competitive in the global economy.'

Future growth stifled by an inadequate labour force

An investigation in Massachusetts (Comings et al, 2002) into that state's basic skills deficits and the role of adult basic education argued forcefully that the labour shortages in critical occupations would stifle future growth and erode the state's competitive edge. This meant that confronting the problem of a workforce with insufficient skills (which the study calculated was 35 percent of the state's labour force) could no longer be viewed as an individual's problem but rather as a public problem, with major economic and social consequences. The study went on to call for federal US government leadership in addressing skills gaps.

The arguments for such leadership were articulated by the Progressive Policy Institute (PPI) in Washington in 2000 (in Jarboe, 2000). The PPI sees a role for national government in workplace training, particularly in the area of seeding local initiatives and regional partnerships because of:

- the limited capacity of most firms, but particularly small and medium-sized enterprises (SMEs), to engage in significant and sustained workforce development efforts. As a result, when confronted with a shortage of skilled workers, many firms try to hire workers from other companies.
- the mobility of workers which makes it difficult for individual employers to bear all the burden of training employees. This serves as a disincentive for individual firms to provide training without a concerted effort on the part of the entire industry regionally.
- the lack of partnerships with industry which means many educational institutions continue to train students for old economy jobs with old economy methods and equipment.
- most federal training funds go to displaced and disadvantaged workers, not to incumbent workers.

Reduced labour market flexibility and employment sustainability

In 2002 the OECD pointed out the importance of not neglecting efforts towards upgrading the skills of the incumbents on the labour market during economically good times. It argued that important social and economic benefits could be derived from promoting mobility and employment sustainability through investment in vocational education and training and additional 'soft skills' support. Such support could help new and disadvantaged labour market participants diversify their qualifications and skills, improve their productivity, and move to better jobs. As a result, these workers are in a less vulnerable position when unemployment rises again. Furthermore the high incidence of poverty among working households suggests that policies emphasising job placement must be supplemented by measures that improve employment retention and enhance movement up job ladders. Employers faced with skill shortages and skill gaps also gain from measures to upgrade the skills of their local workforce, particularly where these are based on partnerships and adapted to local business needs.

These issues are also discussed in the Australian context. For example, Gleeson (2005) writes that the evolution of the new economy has resulted in a decline in the number of low skilled jobs available. This has led to an oversupply of people with low skills, resulting in declining wages.

Furthermore, workers with low numeracy and literacy skills will face reduced employment opportunities in the future.

Costs to the overall economy and to the individual

There is widespread comment in the literature about the paucity of material on the actual monetary costs of poor literacy and numeracy. However, the UK government did commission Ernst and Young to look at the impact on the UK economy. It quotes a figure of in excess of £10 billion a year as the cost of not addressing basic skills needs. It was further calculated that the individual worker with poor skills is likely to earn 11 percent less than the average wage (Department for Education and Skills, 2003; Ananiadou, Jenkins & Wolf, 2003)

Poor programme outcomes

At the level of programme delivery, other literature makes it clear that by not implementing programmes properly — with adequate consultation, professional providers and a long-term commitment — there is the risk of arousing the suspicion of workers that basic skills training is preparation for redundancy. Moreover if there are no continuing educational opportunities or adequate career guidance much of the learning imparted recedes.

The changing needs of industry for literacy training

The constancy of change in the workplace has prompted the attention of employers on employability or essential skills such as empathy, effective people skills, interpersonal and communication skills. In literacy circles, where discussion is about the multiplicity of literacies people need to master during the course of a lifetime, these skills are sometimes labelled 'critical literacy' and will increasingly feature in workplace training. (Trenerry, 2002). This suggests a continuing need for workplace language and literacy training to play a role in facilitating reform and providing workers at risk of losing employment with the necessary skills to maintain their positions and prepare for future employment and training needs (Baylis, 1995).

An Australian study warns that gearing literacy training exclusively to the needs of industry and workplaces may limit training to gap training for the immediate workplace context and ignore other literacy needs (Millar & Falk, 2003). This warning is implicit in other discussion about the pitfalls of a narrow deficit approach to basic skills training—that is one which ignores the worker as citizen, parent and potential reader of poetry.

This points to the possible need to ensure that future workplace training does not exclude consideration of external social and family factors (OECD, 2002). Recent research suggests that successful literacy and numeracy delivery should not be seen in terms of purely educational or vocational outcomes but also in terms of the social capital generated. In a study of TAFE students in Queensland, Balatti, et al., (2005) found that such social capital outcomes (e.g. students acquiring new networks in their community) can also have a role in improving the socio-economic impact of course participation (e.g. finding a job). In many cases it is the combination of social (ability to build relationships and networks and to manage conflict) and human capital (improved reading, writing and/or speaking skills) that results in greater socio-economic well-being.

Question two

Where work-based literacy and numeracy training, integrated with vocational training, has occurred, what changes, improvements and outcomes can be observed in workplaces?

Introduction

One of the most widely quoted Australian studies in the field is Pearson's 1996 report on 30 workplaces, *More than Money Can Say, The impact of ESL and literacy training in the Australian workplace*. It found that language and literacy training was considered to have had a positive effect on five aspects of the workplace:

- direct cost savings
- access to and acceptability of further training
- participation in teams and meetings
- promotion and job flexibility
- the value of training (which included issues such as worker morale and confidence to communicate).

Financial returns: the case of St John of Kronstadt Russian Welfare Society, Victoria
Improved English language and literacy (resulting from a 1994 WELL programme) led to better record keeping which, in turn, helped the hostel to receive increased Department of Human Services and Health funding of between \$4,000 and \$5,000 a month, a 25 per cent increase (Pearson et al, 1996, Vol 1, p. 135).

Once employees are engaged, benefits accrue. A National Research and Development Centre (NRDC) for Adult Literacy and Numeracy study suggests that obtaining a vocational qualification (as opposed to an academic one) on an employer-provided course (although not necessarily in the workplace) provides a higher return in wage increases than obtaining a qualification on a non-employer provided course.¹ It goes on to conclude that these wage gains reflect, at least in part, substantive changes in the productivity and value of the employee to the employer. While the precise nature of the training is not spelt out, the researchers point out that general skills (including higher levels of basic skills) are of increasing importance in the workplace, and therefore likely to deliver important productivity advantages to employers in coming years.

The NRDC summary of the literature on the benefits which employers derive from raising the basic skills levels of the workforce lists the following:

- increased ability to handle training on the job
- better team performance
- improved labour-management relations
- increased quality
- improved results in job-specific training/quicker training results
- reduced time per task
- reduced error rate
- better health and safety record
- reduced wastage

¹ Ananiadou draws this conclusion citing Blundell, R., Dearden, L. and C. Meghir (1996)

The Determinants and Effects of Work Related Training in Britain, Institute for Fiscal

Studies: London, who found that men undertaking employer-provided course had a significant wage advantage. This was more pronounced if the training took place off the job and resulted in a higher-level vocational qualification pp68-69.

<http://www.ifs.org.uk/comms/r50.pdf> (accessed March 06)

The NRDC also points out that the quantified evidence of many of these benefits is still quite sparse.

More specifically, studies show that in Australia the role of the Workplace English Language and Literacy programme (WELL) is regarded as being of great importance in supporting provision for literacy and numeracy in training packages. This role is defined in terms of enabling access, improving communication, creating a constructive awareness of communication skills in training, and promoting a training culture which leads to wider and more effective training in the workplace. This in turn had led to achievement of work related credentials, increased confidence and orientation to work, participation at work and career pathways (Baylis, 1995).

Bloom and Lafleur (1999) in a Conference Board of Canada review of U.S. workplace education programmes (WEPs) funded under the National Workplace Literacy Program between 1995 and 1998, show that improving employee skills creates employees who work smarter and better and who cope well with change in the workplace, improves union/management relations, and increases output and profitability. The research involved over 100 interviews with employers, employee, and union representatives from over 40 private and public-sector workplaces representing a cross-section of economic sectors throughout the United States. The interviewees were selected from 45 national workplace education projects funded between 1995 and 1998 by the U.S. Department of Education as part of the National Workplace Literacy Program².

A summary of the views of employers and employees is presented in a table (p.6) which is reproduced on the next page.

² The report's appendix (pp.14-15) lists the employer organisations and unions interviewed.

Skills Gained by Employees Through WEPs

N=55

	<i>Percent of Employers Reporting Skill Gain</i>
Greater willingness and ability to learn for life	85%
Improved ability to listen to understand, learn, and apply information and analysis.	84
Improved understanding and ability to use documents	84
More positive attitude toward change	84
Better ability to build and work in teams	80
Increased understanding of and ability to use numbers by themselves or in charts and tables	76
Improved capacity to think critically and act logically to evaluate situations, solve problems, and make decisions	73
Better ability to communicate using English	67
Improved ability to use computers and other technology, instruments, and tools and information systems effectively.	65
Heightened understanding and willingness to work within the group's culture	65
Stronger understanding of and ability to use prose	53
Employers reporting at least one skill gained	98

Organizational Benefits Gained Through WEPs

N=55

	<i>Percent of Employers Reporting Benefit</i>
Improved employee morale/self-esteem	87%
Increased quality of work	82
Improved capacity to solve problems.	82
Better team performance	82
Improved capacity to cope with change in the workplace	75
Improved capacity to use new technology	73
More employees participating in job-specific training.	73
Higher success rate in promoting employees within the organization	71
Improved effectiveness of supervisors.	69
Increased capacity to handle on-the-job training	67
Improved labor-management relations	65
Increased output of products and services	65
Higher success rate in transferring employees within the organization	60
Improved results in job-specific training	56
Increased profitability.	56
Reduced time per task	56
Quicker results in job-specific training	55
Reduced error rate	53
Better health and safety record	51
Reduced waste in production of products and services.	49
Increased customer retention.	42
Increased employee retention	40
Reduced absenteeism	33
Employers reporting at least one benefit gained	98

A Canadian study quantitatively recorded the data gathered from 53 workplaces participating in a basic skills programme – see Box 2.

Box 2 The Impact of Basic Skills Programmes on Canadian Workplaces (ABC Canada)

This study ventures where few others have—into quantitative recording of the data gathered from a study of 53 workplaces. Within that sample half of workplace basic skills programmes were coordinated by joint labour-management committees, a further 47 per cent were coordinated by the company alone. In 96 per cent of the workplaces surveyed, employees entered the basic skills programmes on a voluntary basis. Over half the programmes were held in a combination of employer and employee time. In 32 per cent of the workplaces, programmes were held on employee time alone and the remaining 17 per cent of programmes were on employer time. The authors note that every effort was made to interview an employer and an employee representative at each workplace.

- 94 per cent of respondents stated that basic skills programmes positively influenced participants' reading, writing and oral communication skills in ways that benefit the workplace.
- Close to 80 per cent of the respondents reported their workplaces had seen increased productivity because of the basic skills programmes.
- 87 per cent of respondents believed basic skills programmes exerted an independent, and positive influence on participants' ability to problem-solve.
- 87 per cent of respondents said that programmes impacted positively on participants' ability to use workplace-based technology.
- Two-thirds of respondents had seen reduced error rates in people's work.
- 85 per cent of respondents had seen increases in the quality of people's work.
- 73 per cent of respondents had seen increases in work effort.
- 82 per cent of respondents linked increased health and safety with their workplace's basic skills programme.
- 100 per cent of respondents agreed that workplace basic skills programmes were a good training investment and would recommend them to other workplaces.
- 97 per cent of respondents reported that basic skills programs increased the confidence level of programme participants.
- 90 per cent of respondents indicated that employees who took basic skills programmes had an increased ability to work independently.
- 85 per cent of respondents reported that basic skills programmes enhanced participants' ability to work within a team-based model.
- Close to 90 per cent of respondents indicated that employees were more promotable as a result of basic skills programmes.
- 63 per cent of respondents reported that basic skills programmes helped workplaces to retain employees over time.
- 93 per cent of respondents reported that basic skills programmes helped to increase employee morale. Programme participants felt better about their workplace, and about the unions that represented them.
- Many respondents stated that basic skills programmes help remove barriers in the workplace based on age, sex, race and language.
- 85 per cent of company and employee representatives concurred that basic skills programmes had improved labour relations in their workplaces.

The importance and benefits of work-based literacy training embedded with vocational learning has been discussed earlier (in response to question one).

Various other improvements and outcomes can be observed in workplaces as a result of a work-based literacy and numeracy programme, particularly across the following areas:

- communications, for both employer and employee
- productivity and efficiency
- occupational health and safety
- workplace satisfaction and workplace culture
- employer attitudes to training

Communications (for both the employer and the employee)

Millar's (2001) investigation of the impact of WELL in Tasmania included an enterprise working with intellectually disabled people. A high proportion of those who were WELL participants went on to participate more regularly, actively and effectively in work and work-related activities, with communication skills seeing the greatest improvements, particularly in regard to speaking skills, such as expressing opinions, making suggestions and dealing appropriately with complaints.

Several reviews of WELL report improved understanding of the complexity of communication among managers and team leaders, particularly in terms of coming to grips with the cultural overlay to some of the workplace communication difficulties. McGuirk et al (2001) concluded from a study at a large packaging company that teachers had a key role in the process of guiding management to explore their own role in communication. In the case of John Holland (Hislop, 1994) an early WELL project resulted in the development of modules which incorporated LLN strategies for team leaders to help them work more effectively with workers across cultures.

Baylis (1995) makes the point that cross fertilisation of knowledge of management and training providers can be a significant contributor to the success of reform process from operator level up. The WELL programme also improved communication practices, by raising awareness of the need for plain English instructions and discussion, as well as making it clear that good communication was the responsibility of all parties at work.

A more recent evaluation of the Transport and Logistics Industry Skills Council, TDT Australia's WELL programme reported participants saying that by facilitating regular interaction, the training had helped managers and supervisors break down the sense of isolation some have felt when they have been promoted from the ranks but lacked the experience and/or education levels of the long-term, senior managers. It has also started to encourage managers to take a 'whole of business' approach to their roles (Brewer et al, 2005).

Productivity and improved efficiency

Pearson et al (1996) asked his respondents for a quantitative estimate of savings. Seventy (70) per cent considered that, on average, their organisation had made perceptible cost savings as a result of language and literacy training at the workplace. The nature of these savings varied by organisation but the most consistently identified was time saved by supervisors and workers when carrying out language or literacy tasks. Another frequently mentioned benefit was more accurate and fuller completion of workplace documentation. These reductions in unproductive labour were estimated on a median range to be between A\$16 to A\$28 per training participant per week.

In another study Wakefield and Pearson (1997) found that across seven workplaces there were nearly \$32,500 savings in wastage (such as money, time, resources and materials) fully attributable to WELL funded training and just over \$18,000 of savings in wastage that were partly

attributable to WELL funded training. There were other changes noted such as greater emphasis on quality.

Bloom & Lafleur (1999) concluded that one of the clearest signs that workplace education programmes (WEP) were having an impact was that employees improved the quality of their work. More than 80 per cent of employers identified such improvements with employees taking more pride and ownership in their jobs. Their improved attitudes made them more responsive to customers; their better listening and language skills allowed them to understand sophisticated instructions. In turn better communications skills bred more confident workers willing to get involved in continuous improvement. In addition the employees who received basic skills training had increased their technological proficiency. The authors do not cite comprehensive figures but state that 'evidence shows that increased profits can be generated in many kinds of workplaces either by solely providing workplace basic skills training or combining training that improves employees' skills with other strategies. Two examples are given:

Chicago-based Juno Lighting, an equipment manufacturing company, where profits increased 15 per cent through a combination of new technology that brought the per-unit cost down and the increased capacity of WEP-trained employees to use the technology effectively

Baker Enterprises, a sheet metal fabrication company in Michigan, where WEP graduates' skills led to reduced overheads and a requirement for fewer supervisors, and contributed to a five per cent sales increase that enhanced the bottom line.
(Bloom & Lafleur, 1999, p. 4)

In the New Zealand case study at Rotaform Plastics (Workbase National Centre for Workplace Literacy & Language, 2002), the chief executive, David Brumby, identified the following benefits from improved literacy:

- greater efficiencies and dramatic growth across the company
- huge impact on overall company performance (with the proviso that this takes time)
- reduction in day-to-day problems, freeing up management to focus on being innovative and expanding the business
- the company's ability to operate at the high-value, more sophisticated end of the market where the greatest opportunities lie.

Occupational health and safety (OH&S)

McGuirk et al (2001) states 'Another clearly demonstrable outcome is the improvement in OH&S with a decrease in the number of workers' compensation claims over the last three to four years. Previously such claims totalled 6 per cent of the budget and are now down to 4.5 per cent ... As well, the severity of the claims has decreased.' This result is echoed in other studies, such as Millar (2001) and Skill New Zealand (2002).

The study in the US (Bloom & Lafleur, 1999) concluded that training gave employees a better grasp of workplace dangers and safety issues and a better understanding of safety processes, and helped them to make fewer errors in following safety instructions. This resulted in fewer accidents, less lost work time due to injuries, reduced workers' compensation payments, and better compliance with Occupational Safety and Health Administration (OSHA) requirements.

Workplace satisfaction and workplace culture

Baylis (1995) points out that increased confidence was highly valued by workplace personnel as it facilitated implementation of workplace reform. In the US survey, retention rates increased for both long-standing employees and new recruits in 40 per cent of workplaces (Bloom & Lafleur, 1999).

McGuirk et al (2001) reports that her study found a more productive, adaptable and 'happy' workforce.

Employer attitudes and practices to include employees in consultation process and provide and support training of employees

Millar (2001) found that WELL projects often initiate enterprises into training activity. They, and their workers, experience an increase in both skills and confidence, which makes them receptive to the idea of further training. A training culture becomes established. People who have been involved with WELL see the programme as having an important role in achieving the benefits of a more highly skilled workforce.

WELL projects at John Holland (Hislop, 1994) and Merck Sharp and Dohme (Mawer, 1994) made possible the rewriting of courses in competency based format and incorporation of LLN competencies. This resulted in materials better suited to the needs of workers in workplaces. There was also a move away from tests to integrated assessment tasks (i.e. on-site tasks reflecting skill development) which saw some workers reclassified at higher levels as a result of more flexible assessment (Mawer, 1994). Overall the projects helped to broaden attitudes to training, seeing it as something that could be less formal and take place outside the classroom.

The *Turning Skills into Profit* study found that after WEP training, employees were more likely to see the value of investing time and energy in learning and in understanding their co-workers and supervisors so that they can cooperate more effectively in teams. Sometimes the course content was less important than the experience: the act of attending a class and meeting colleagues in itself improves an employee's ability to work in a team; in other words there was an increase in social capital. Mixing employees and managers in classroom training sessions could lead to improved team performance later in the workplace. This in turn could improve labour-management relations as employees gained the confidence to speak more often and more clearly to their managers and supervisors (Bloom M & Lafleur, 1999).

Mawer (1994), found a greater commitment at Merck to training but also changing recruiting practices to get in different skills.

Question three

How can the performance of work-based literacy and numeracy training programmes be measured? What indicators have been used or proposed?

Introduction

The research, in particular Beder in the United States (1999), suggests that the performance of adult literacy programmes can be measured by their outcomes and their impacts. While the outcomes are the changes that occur to the workplaces and employees involved in the programmes, Beder suggests that the impacts are wider as they include the changes that occur in the family, community and larger society as a consequence of participation. Most of this section focuses on measuring outcomes, as less is known about how to measure the wider impacts to the family, community and society.

First, the indicators proposed or used in research on the outcomes of literacy and numeracy programmes are examined. Where possible, the findings on the economic outcomes are discussed, as this was a key component of the research question. Second, the methodologies that suggest how indicators can be implemented to measure programme performance are summarised.

What outcome indicators have been used or proposed?

This report has already described a variety of outcomes to the workplace and the employee associated with workplace literacy programmes (see Question 2 findings). The types of indicators used to measure outcomes as mentioned in this research and on research that more specifically investigates how workplace literacy programmes can be measured suggest there are two types of outcome indicators: those that measure the educational outcomes and those that measure other outcomes, such as economic and social benefits. Examples of these types of indicators as used in the research are listed and subsequently described in more detail over the following pages.

- Educational outcomes
 - Change in literacy and numeracy skills of programme participants
 - reading competency
 - writing competency
 - oral communication competency
 - learning strategies competency
 - numeracy competency
- Other outcomes: Economic and social outcomes
 - Productivity and efficiency gains to the workplace
 - better individual and team performance
 - improved labour-management relations
 - increased quality
 - increased output
 - improved capacity to use new technology and cope with workplace change
 - improved results in job-specific training or quicker training results
 - reduced time per task
 - reduced error rates, including returned orders
 - better health and safety record
 - reduced wastage in production and services
 - increased customer retention and satisfaction
 - increased employee retention

- Earnings of employee and profitability of workplace
 - company profits versus training (with or without subsidy); increased wages
 - employees' wages
- Inefficient labour markets
 - high staff turnover
 - the poaching of good and/or trained staff by other employers (as this creates a disincentive for employers to commit to training)
- Improved training culture
 - improved access to training
 - improved participation in subsequent training
 - improved commitment to training by employers
 - improved recognition of different learning needs
- Personal and interpersonal factors
 - improved confidence
 - improved morale
 - improved ability to participate in teams and meetings
 - improved communication skills
 - improved quality of work and life

The examples of 'educational outcomes' in the above list were derived from the indicators of competency as measured by the National Reporting System³. Most of the examples of 'other outcomes' were derived from the indicators measured by Pearson et al (1996)⁴ and Bloom and Lafleur (1999)⁵ in their surveys of employers and employees. The examples of 'other outcomes' were also derived from a summary by Balzary (2004, in Foster & Beddie, 2005) of the economic benefits reported in various studies.

Indicators that measure educational outcomes

Sticht (1999) indicates that in the United States in the early to mid 1990s, the government recognised a need for better national standards and indicators for accountability in federally funded adult literacy programmes. Sticht indicates that this will be the focus of government programmes in the United States in the first decade of 2000. He subsequently provides an overview of some of the tests currently used to assess the educational outcomes in English as a second language and adult basic education programmes. Other than this discussion in the context of adult literacy programmes that are not necessarily work-based, the present literature search did not find any information on national systems that report the educational outcomes of workplace literacy and numeracy programmes in other countries.

Meanwhile, in Australia, the National Reporting system is the key framework capable of reporting the educational outcomes in workplace literacy programmes. The employability skills framework also has the potential to guide the investigation of potential educational indicators in this field. Both these frameworks are described.

The National Reporting System

The National Reporting System provides a framework of literacy and numeracy learning indicators that is used to report the outcomes of English language, literacy and numeracy programmes in Australia. Perkins (2005) describes the key features of the system in Box 3.

³ See pages 28 to 29 of this report for further details of the National Reporting System.

⁴ See pages 31 to 32 of this report for further details on the surveys used by Pearson et al. (1996).

⁵ See page 65 of this report for further details on the methodology used by Bloom and Lafleur (1999).

Box 3 Key features of the National Reporting System

The National Reporting System incorporates indicators of competence in five modes: reading, writing, oral communication, learning strategies and numeracy.

An individual's performance in each mode is measured across five levels, taking into account factors such as task and text complexity, numeracy complexity, familiarity of context, learning strategies used and the nature of support provided.

Different aspects of communication are also recognized through six aspects of communication: procedural, technical, personal, cooperative, systems and public.

Source: Perkins (2005).

The National Reporting System (NRS) is only intended to directly report on the learning outcomes of programme participants. Therefore it can not be used to assess social and economic benefits. For these reasons, earlier trials and pilots recommended the system be used to in conjunction with indicators of other outcomes.

How widely and successfully used?

Over the past eight years, the National Reporting System has been used to report on two Commonwealth-funded programmes — the WELL programme and the Language, Literacy and Numeracy programme (LLNP). Perkins (2005) found no evidence that any Australian states and territories had formally adopted the National Reporting System as a reporting tool in their own programmes and she found little support for adopting the National Reporting System as a national reporting system. This was largely due to concerns that the National Reporting system would duplicate the reporting requirements already in place.

In their report of the project to pilot the National Reporting System, McKenna et al (1997) found that the system provided a valid framework for reporting outcomes in a range of contexts, sectors and learners. They went on to recommend that it be used in conjunction with other performance indicators to report on the WELL programme. However, this study and other research conducted at a similar time by Baylis (1995); Littlewood and Platt (1998); and Wakefield and Pearson (1997) reported criticism of the system. The criticism reflected reporting burdens of time and professional development due to the complexity of the system. To address the reporting burdens, Wakefield and Pearson (1997) recommended compensation to WELL training providers at the minimum of 10 hours per submission.

Another key issue identified in earlier research was that the instrument does not capture other outcomes. Hence, some participants might not change in skill level but may report other benefits. This led to recommendations that the system be used in conjunction with indicators of other outcomes. More recently the same concerns were noted in an analysis of adult literacy and numeracy practices in Australia (Cipollone & McGuirk, 2001) and analyses of WELL programmes in Tasmania (Millar, 2001) and in TDT Australia (Brewer et al, 2005).

Most recently, in 2005, Perkins also reported criticism from some practitioners involved in the WELL programme, as the National Reporting System is only required to be used to report outcomes at the end of the programme and at an aggregate level for all those who participated in the training. This did not allow them to track the progress of each individual. On the other hand, there appeared to be greater support for the system from practitioners involved in the Language, Literacy and Numeracy (LLNP) programme where outcomes are reported at the individual level and both before and after training. The LLNP practitioners were able to report that the National Reporting System had improved their ability to work with learners while practitioners in the WELL programme reported little returns from using the system.

Table 2 compares the uses of National Reporting System between the WELL programme and the LLNP.

Table 2 The uses of the National reporting system in LLNP and WELL

	LLNP	WELL
Programme focus	To assist those with low levels of language, literacy and/or numeracy	To improve workplace language, literacy and numeracy
Target group	Unemployed people at NRS levels 1 - 2	Employees at NRS levels 1 - 3
NRS purposes	Pre-training: Assessment to determine eligibility for programme and allocation of hours. Post-training: To indicate progress	
Focus	Individual	Snapshot of all participants in the programme (no individual progress mapped)
Assessment	Across all thirteen indicators	Only the indicators and aspects relevant to training focus
NRS determination	Area of lowest performance reported pre-training	Area of highest performance reported post-training
Funding body expectations	Participants will move up a level	Participants may stay within a level but will develop specific skills within current context and potential to transfer these to other contexts
Validation	Formal documentation submitted for validation; written feedback Interactive moderation process—provider participation once a year	Electronic reports of highest level achieved
NRS professional development	Introductory courses held regularly in some states Internal mentoring Moderation meetings	Responsibility of provider Internal mentoring Industry Training Councils and professional bodies may be included in professional development programme

Source: Derived from Perkins (2005); WELL Guidelines 2005-2006 and LLNP Guidelines 2005-2006

The Employability Skills Framework

Waterhouse et al. (forthcoming) note that literacy, numeracy and language have been reframed into a broad range of skills described as employability skills. These include, but are not limited to, communication skills, foundation skills, appreciation of context and culture and the ability to independently solve problems.

The Australian Council of Commerce and Industry (ACCI) and the Business Council of Australia (BCA) developed a framework of employability skills, which was funded and published by the Department of Education, Science and Training (2002). Underpinning the Employability Skills Framework is the concept of literacy and numeracy as essential skills supporting many, if not all, of the Employability Skills. Government documents also support the importance of English language, literacy and numeracy as “crucial underpinnings to learning to learn and generic skills and essential skills for the Australian population” (Department of Education, Science & Training, 2005). Work on essential skills is still developing in Australia as part of the review of the National Reporting System (Perkins, McLean & Wyse, forthcoming).

The Employability Skills Framework of skills and attributes could be used to guide future research on the types of indicators that could be used to measure educational outcomes from workplace literacy training. It is noted that this framework also includes indicators that overlap with what we have described as ‘other outcomes’. The skills in the framework include:

- Communication
- Teamwork
- Problem solving
- Self management

- Planning and organising
- Technology
- Learning
- Initiative & enterprise
- Personal attributes

How widely and successfully used?

Although not cited as a framework of indicators currently used in evaluation and research on workplace literacy training, this and other similar frameworks of employability skills have been used extensively to guide other research.

Indicators that measure other outcomes

Many of the studies mentioned under question two used indicators that measured the social and economic outcomes from participating in work-based literacy and numeracy programmes. Within this section the impact evaluation instruments and a cost-benefit approach are examined as frameworks that have been proposed to measure these 'other' benefits in the literacy and numeracy field. Finally studies examining the outcomes of work-based literacy training, such as those described under question two, are reviewed to show the variety of indicators that have been used and the associated findings.

Impact evaluation instruments

In Australia, Pearson et al (1996) identified five key performance indicators that can be used to evaluate the social and economic outcomes from literacy and numeracy training in the workplace. These indicators were identified through interviews with key workplace personnel in 30 workplaces. Pearson et al. subsequently designed five instruments to measure the five key performance indicators. The instruments are now known as the impact evaluation instruments and are described in Table 3.

Table 3 Impact evaluation instruments

<i>Instrument</i>	<i>Description</i>
Direct cost-savings	This instrument focuses on the nature and degree of savings in the workplace which can be linked to the outcomes of the programme. The instrument also includes requests for estimations of specific savings that occurred in amount of time and/or money per day or week.
Access to and acceptability of further training	This instrument collects statistical information about subsequent training enrolments, training achievements and training success rates of programme participants. The instrument also collects information on programme participants' ability to identify and apply for further training and the changes that have occurred from participation in further training.
Participation in teams and meetings	This instrument extracts information on the perceived improvement in various aspects of team and meeting participation. The instrument also requests the value of specific gains from team suggestions that have occurred after the training programme.
Promotion and job flexibility	The promotion component of the instrument collects statistics on the incidence of applications for internal promotions from programme participants after the completion of the programme. The promotion component also collects information on changes to the value that the workplace places on internal promotions. The job flexibility component of the instrument focuses on the estimation of improvements in the flexibility of workers to undertake workplace tasks that have a literacy component.
The value of training survey ¹	This instrument focuses on the personal and interpersonal gains of programme participants from the training. Such gains include improvements to participants' morale, confidence to communicate and attitude to training.

Note: 1. Known as 'personal and interpersonal factors' in later research.
Source: Derived from Pearson et al (1996).

Each impact evaluation instrument involves several surveys to be completed by either programme participants, supervisors, managers or other workplace personnel. The instruments are implemented in a quasi-experimental research design whereby data is collected before and after training to assess improvements and changes resulting from the programme. Most instruments involve self reporting from participants and ratings and estimates from supervisors and managers. Although mostly qualitative in nature, Pearson et al (1996) were able to quantify the findings to report on the social and economic benefits of workplace literacy and numeracy programmes.

How widely and successfully used?

After developing the instruments, Pearson et al (1996) administered them to 500 participants from Australian workplaces that were involved in WELL or the Food Industry Language and Literacy Initiative Programme (FILLIP). The sample covered five states and 13 industries. The statistics derived from the instruments provided evidence of the degree of improvement at the workplace and individual level and is one of few known attempts to quantify the value of work-based literacy and numeracy training. The main difficulty encountered in the administration of the instruments was that not all workplaces collected the information required for some instruments. It was also reported that the value of training survey was the only instrument with responses from all workplaces. The response rates for the four other instruments ranged from 33 per cent to 66 per cent.

Wakefield and Pearson (1997) subsequently trialed the instruments in six states on 50 participants from 20 workplaces involved in WELL programmes. Each workplace was asked to trial at least one of the five instruments. Similarly to Pearson et al (1996), the researchers report that the personal and interpersonal factors instrument (previously known as the value of training survey) had the highest number of responses.

Through analyses of pre-training and post-training views of the instruments and overall ratings of the instruments, the researchers suggest that the instruments were successfully implemented and considered of value and relevance. The main reporting burden identified related to the time taken to coordinate people and ensure that all information is gathered. Their recommendations for improvement of the instrument were related to simplification and shortening of the instruments. On the proviso that these modifications were made, Wakefield and Pearson (1997) recommended that the WELL programme adopt the instruments as part of the WELL reporting mechanism. Despite such recommendations, the present literature search did not identify the actual use of the impact evaluation instruments in other research on work-based literacy and numeracy programmes.

Findings on the economic outcomes, such as improved productivity and dollar values of benefits, savings and costs

Pearson et al (1996) and Wakefield and Pearson (1997) used the impact evaluation instruments to estimate benefits and savings to workplaces that were attributed to work-based literacy and numeracy training.

In summary, Pearson et al. (1996) reported that:

- 70 per cent of respondents linked work-based literacy and numeracy training to direct cost savings. Most frequently these savings related to time savings.
- On average, savings on unproductive labour per week ranged from \$9 to \$77 per training participant per week (see Table 4 for details on the workplaces and their corresponding estimates of savings and benefits).

In summary, Wakefield and Pearson (1997) reported that:

- Of the seven worksites that used the direct cost savings instrument, a total of \$32 000 savings in reduction in wastage was directly attributed to the work-based training. A further

\$18 000 was attributed in part to the work-based training (see Table 5 for details on the workplaces and their corresponding estimates of savings and benefits).

- Two worksites were able to use the participation in teams and meetings instrument to estimate cost savings of almost \$25 000.
- Total savings of \$87 822 were directly attributed to work-based training across ten of the worksites that provided cost-savings estimates. A further \$54 303 were partly attributed to the training. These total figures were derived from summing all estimates of cost savings reported from worksites using all instruments except the personal and interpersonal factors survey.

Table 4 Details of the estimated benefits and savings in seven workplaces in Pearson et al. (1996)

<i>Workplace details</i>		<i>Workplace literacy and numeracy training</i>		<i>Estimates of cost savings or dollar benefits</i>	
<i>Workplace profile</i>	<i>Key influences</i>	<i>The Participants</i>	<i>The programme</i>	<i>Nature of saving or benefit</i>	<i>Estimated amount of savings or benefit</i>
- Private sector - Large size (220 employees) - Manufacturing (pharmaceuticals) industry - Metropolitan area, NSW	- Workforce restructuring - new manufacturing processes - quality assurance	- 19 participants - Mostly NESB - Mostly female	- 100 plus hours - Undertaken in 1993	- Positions no longer needed - 10 jobs saved - Productivity savings due to improved understanding of written orders - Productivity savings due to accurate calculation and entering of quantities	- Salary savings of \$40 000 per annum - Avoided \$250 000 in redundancy payments - Savings of 4-5 hours per day or \$300 per week in unproductive labour - Savings of 12 hours per day or \$800 per week in unproductive labour
- Private sector - Medium size (72 employees) - Health and community services industry - Metropolitan area, Vic.	- Loss of government funding - Introduction of teams - Multi-skilling	- 11 participants - Mostly NESB - Mostly female	- 41 to 80 hours - Undertaken in 1994	- Increased funding obtained - Productivity savings due to reduced translating	- Over \$50 000 per annum - Savings of at least 2 hours of a manger's time per week
- Private sector - Large size (114 employees) - Manufacturing (printing) industry - Metropolitan area, WA	- Workforce restructuring - Introduction of teams - Introduction of technology	- 32 participants - Equal mix ESB and NESB - Mostly male	- 40 to 80 hours - Conducted in 1995	- Productivity savings due to one worker's improved vocabulary and ability to decipher handwriting	- increased productivity by 2% on one machine
- Private sector - Large size (545 employees) - Construction industry - Metropolitan area, NSW	- Need for industry wide approach to training - Award restructuring and multi-skilling - Safety	- 20 participants - Equal mix ESB and NESB - Mostly male	- 40 or less hours - Conducted from 1993 to 1995	- Cost / benefits analysis of the training - Recovered costs on a crane due to use of new technology enabling accurate record keeping - Productivity savings due to improved writing skills and efficiency of document completion - Recovered costs on forklift work due to accurate computer record keeping.	- Benefit of \$4.75 million derived from cost benefit analysis that ran from May 1993 to 1994 - \$60 000 in recovered costs - Savings of \$64 500 in unproductive labour - \$10 000 in recovered costs
- Private sector - Small size (26 employees) - Manufacturing (food) industry - Metropolitan area, SA	- Seeking quality accreditation - Introduction of work team structure	- 5 participants - Mostly NESB - Mostly female	- 66 hours - Undertaken from 1994 to 1995	- Productivity savings due to improved understanding of verbal instructions	- Savings of 3 worker hours per week or \$4 900 per annum in unproductive labour
- Private sector - Large size (116 employees) - Manufacturing industry	- Workforce restructuring - Introduction of TQM system	- 20 participants - Mostly NESB - Mostly male	- 80 to 100 hours - Undertaken in 1995	- Reduced downtime due to improved work processes - Reduced maintenance costs	- \$82 080 per annum saved - \$10 067 per annum

Workplace details		Workplace literacy and numeracy training		Estimates of cost savings or dollar benefits	
<i>Workplace profile</i>	<i>Key influences</i>	<i>The Participants</i>	<i>The programme</i>	<i>Nature of saving or benefit</i>	<i>Estimated amount of savings or benefit</i>
- Metropolitan area, Vic.	- Expansion of processes				saved
- Private sector	- Quality assurance systems	- 20 participants	- 41 to 80 hours	- Productivity savings due to improvement in several skills (for example, communication skills)	- \$21 700 saved per annum in unproductive labour
- Large size (550 employees)	- Introduction of committees and work teams	- Mostly ESB	- Undertaken in 1994	- Less materials wastage that results from putting incorrect quantities of flour into bags	- \$4 660 per annum reduction in floor giveaways
- Manufacturing (food) industry		- Mostly male			
- Metropolitan and non-metropolitan, 5 states					

Source: Pearson et al (1996)

Table 5 Estimation of savings from the reduction of wastage in seven workplaces in Wakefield and Pearson (1997)

<i>Workplace details^(a)</i> Location	<i>WELL programme participant details</i>		<i>Annual wastage reduction</i>	
	Number of trainees in WELL programme	Number of trainees covered by the direct cost savings instrument	Solely attributed to the WELL programme	Partly attributed to the WELL programme
New South Wales	20	20	\$7 084	\$4 312
New South Wales	22	6	\$4 356	(b)
New South Wales	7	7	\$9 146	\$2904
Victoria	11	4	(b)	\$689
South Australia	12	11	\$8 580	\$8 580
Western Australia	1	1	(b)	\$1 711
Western Australia	6	4	\$3 300	(b)
Total	79	53	\$32 468	\$18 197

Note: (a) The only other information reported about the workplaces was that they represented industries of building supplies, cement manufacturing, food, light manufacturing, local government, mining and retail.
(b) Not reported by the workplace.

Source: Wakefield and Pearson (1997).

Findings on the outcomes to individuals in terms of employability and salary earning capacity

Using the promotion and job flexibility instrument, Pearson et al (1996) found that literacy and numeracy training is associated with the willingness to apply for promotion. Other than this finding, no further evidence of improved salary earning potential was derived from the impact evaluation instruments.

The instruments do not directly measure an employee's ability to maintain employment status after the work-based literacy and numeracy training programme.

Costs benefit analyses framework

In the United States, Hollenbeck (1996) derived a framework for analysing the costs and benefits of work-based literacy programmes (see Table 6). The framework includes four groups that may benefit from improved skills in the workplace. These are the **employees** who receive the training, the **employer**, the rest of the **society** and the **education sector**.

Hollenbeck's framework proposes the measurement of eight indicators. These are:

- Training costs
- Productivity
- Wages
- Non-wage compensation
- Worker turnover
- Safer workplace
- Taxes
- Self-esteem

The methodology involves entering a plus for any positive benefit, such as an increased benefit or a decreased cost, and a minus for any negative effect, such as a cost or a reduced benefit.

Table 6 A framework for assessing the economic costs and benefits of workplace literacy and numeracy training

Benefit or cost	Perspective				
	Workers	Employers	Rest of society	Education/training establishment	All
1. Training costs	0/-	-	0/-	+	-
2. (Higher) Productivity	0	+	+	0	+
3. (Higher) Wages	+	-	0	0	0
4. Non-wage compensation	+	-	+	0	0/+
5. (Less) Worker turnover	+	+/-	+	0	+
6. Safer workplace	+	+	+	0	+
7. (Higher) Taxes	-	0/-	+	0/+	0
8. (Improved) Self esteem	+	0	0/+	0	+
Net Benefits	+	-/+	+	+	+/-

Source: Hollenbeck (1996)

For some indicators the sign of the costs and benefits (zero, positive or negative) may vary depending on the programme and the workplace. For example, in Table 6, the costs of training to workers and the rest of the society is entered as a zero or a negative value. However, the costs of training will only be negative for these groups if the workers or the government, rather than only the employer, has paid for some or all of the training.

Hollenbeck (1996) suggests entering the costs and benefits proportionally in a common unit such as dollar values and using a net present value method (discounting future benefits and costs to their present value). This approach allows the costs and benefits to be summed to determine the total net benefits or costs. In monetising the benefits and costs, Hollenbeck indicates this can occur before training through prediction or after training through estimation or measurement. Hollenbeck also suggests that analysts can weight the various components of the costs and benefits differently. However no further information or examples on how to weight the components differently is supplied. The rate of return on investment is finally calculated by dividing the total net benefits or costs by the total investment cost.

How widely and successfully used?

There has been no report on how widely or successfully Hollenbeck's framework has been used to measure the performance of work-based literacy programmes. Hartley & Horne (forthcoming), suggest that there have been few Australian studies that adopt any form of costs and benefits analyses in the literacy and numeracy field. This finding is mirrored in international research.

“There is little rigorous evidence for the benefits of adult literacy training and almost no accompanying evidence on the costs of this training” (Johnston, 2004, p. i).

Hartley and Horne (forthcoming), Johnston (2004) and Blundell et al. (1999) warn that measuring the costs and benefits of improving literacy and numeracy is not an easy task, which perhaps reflects the lack of research using this approach. In particular, they highlight the need to control the impact of other variables and consider all costs that accrue such as the cost of foregone labour to participate in training. However, Hartley and Horne (forthcoming) also add that it is not always possible to value costs and benefits in monetary terms in the education and training field, as many of the outcomes do not have a direct monetary value attached to them.

One case cited in Pearson et al. (1996) does compare the costs of training to the dollar value in benefits (see the fourth case study in Table 4). However minimal details on the methodology of this analysis were reported. A study by Krueger and Rouse (1998) is one of the few published studies to compare the costs and benefits of work-based literacy and numeracy training and provide details on how this was achieved. Their methodology considers the depreciation of the value of training each year. The findings are discussed later in the chapter.

Comparison of frameworks

Table 7 provides a summary of the identified frameworks of indicators.

Table 7 Comparison of frameworks

	National reporting system	Employability skills framework	Impact evaluation instruments	Cost-benefit analysis
Indicators	Educational outcomes	Educational and social outcomes	Other outcomes: Social and economic	Other outcomes: Social and economic
How widely used as a reporting tool	Main use is in two programmes.	Not widely used as a reporting tool	Not widely (at least in the literature identified)	Not widely used
Reporting burdens	Moderate to heavy reporting burdens of time, finances and professional development.	Not reported as not used as a reporting tool.	At least a moderate amount of time is needed as each impact evaluation instrument comprises of several surveys and time is required to coordinate the collection of information.	Not reported. However other research implies that expertise is involved in any cost benefit analyses. Time burden could be described as moderate to heavy, depending on the level and depth of analysis.
How successfully implemented	In general, successful when combined with other indicators. In WELL programme there are reservations about the effectiveness of the implementation methods.	Is accepted in the wider field of generic skills	Successful in trials and research but not known in other contexts	Not easily implemented

A review of outcomes indicators used the research: A study by Krueger and Rouse

In the United States in 1998, Krueger and Rouse (1998) conducted a study that was described by Johnston (2004) and Ananiadou, Jenkins and Wolf (2003) as the most the most rigorous quantitative evaluation of a workplace literacy programme. The researchers examined the impact in a manufacturing company and a service company by comparing programme participants (sample size = 355) with non-participants (sample size = 526). The indicators they used were:

- Hourly wage
- Promotion
- Staff turn-over
- Absenteeism
- Performance awards received by employees
- Productivity

The only criticism of the methodology cited was Johnson's (2004) comment on the use of a short follow-up period and the researchers' own caution that the findings are not necessarily applicable to other programmes as they were based on one training programme within two workplaces.

Findings on the economic outcomes, such as improved productivity and dollar values of benefits, savings and costs

Krueger and Rouse (1998) indirectly assessed productivity outcomes by asking programme participants their perceptions of productivity gains. In the service company, perceived productivity was higher for programme participants.

In an analysis of the effects of work-based literacy and numeracy training on absenteeism, Krueger and Rouse (1998) find some effect. However, they caution that the effect is small and is likely to decrease with time.

As previously suggested, Krueger and Rouse (1998) undertook a cost-benefit analysis for the training in the two companies. They estimated that for the manufacturing company, the benefits of the training programme outweighed the costs of the training programme in terms of increased productivity. They suggest that without government subsidies, the benefits would not have outweighed the costs as the government covered approximately half of the training costs.

There was no evidence that participation in the programme made workers more or less likely to leave the workplace after training (Krueger and Rouse, 1998).

Findings on the outcomes to individuals in terms of employability and salary earning capacity

The findings on wage growth were inconsistent. There was no significant impact on wage growth between programme participants compared to non-participants in the services company. There was evidence that programme participants at the manufacturing company had a small positive effect on wage growth. They were also seven per cent more likely to apply and gain a promotion.

A review of outcomes indicators used in the research: Other research

As suggested within question two findings, there is a body of literature on the outcomes of work-based literacy and numeracy programmes, which have not been specifically discussed so far in this section. The literature includes:

- Several Australian evaluations of WELL funded training programmes within specific enterprises
- International published evaluations of specific work-based literacy and numeracy programmes
- Australian and international case studies
- International studies that examine the economic outcomes to work-based literacy and numeracy programmes

Table 8 provides a summary of the outcomes indicators and findings used within some of these reports to show the variety of findings and possible outcomes indicators that can be used within the different methodological approaches. It is not a comprehensive summary of all the research.

Table 8 A summary of the social and other benefits cited in published research and programme evaluations by type of indicator

Reference	Method	Indicators				
		Productivity and efficiency gains to workplace	Earnings of employee and profits to workplace	Inefficient labour markets	Training culture	Personal and interpersonal factors
ABC Canada	Canadian survey (quantified the responses)	<ul style="list-style-type: none"> - Productivity gains - Ability to use new technology - Reduced error - Increased quality - Increased work effort - Improved OH&S 				<ul style="list-style-type: none"> - Improved confidence - Greater initiative - Improved communication
Miller (2001)	Australian case studies				<ul style="list-style-type: none"> - Wider access to training 	<ul style="list-style-type: none"> - Improved meeting participation - Improved team spirit - Improved communication - Enhanced equity in workplace
Bloom et al. (1997, in Ananiadou, Jenkins & Wolf, 2003)	Canadian survey	<ul style="list-style-type: none"> - Improved labour management relations - Better team performance - Increased quality - Reduced error - Improved OH&S - Reduced wastage 		<ul style="list-style-type: none"> - Increased ability to handle training on the job 	<ul style="list-style-type: none"> - Quicker training results 	
Hislop (1994)	Australian evaluation				<ul style="list-style-type: none"> - Change in attitude to training - Change in workplace culture to training - developed a training plan 	<ul style="list-style-type: none"> - Improved communication - increase in confidence
Hollenbeck (1994, in Hollenbeck 1996)	Quantitative analysis using a household survey in the United States		<ul style="list-style-type: none"> - Employee earnings 			

How can the performance of work-based literacy and numeracy programmes be measured?

In this section, the methodology on how researchers and programme evaluators can implement the indicators is summarised. The identified literature on this topic could be categorised as:

- Literature on how to evaluate work-based literacy and numeracy programmes
- Studies on the outcomes and impacts of work-based literacy and numeracy programmes.

These findings are discussed separately.

Learnings from the literature on best practice approaches to evaluate work-based literacy and numeracy programmes

In Australia and internationally, the literature on the evaluation methods of workplace literacy programmes have identified the following elements as important to the evaluation process:

- The criteria for evaluating the programme should be linked to the programme goals and be considered in the design of the programme (Sticht, 1999; Pearson et al., 1996)
- The evaluation should include a clear identification of the intended outcome measure or performance indicator (Pearson et al., 1996)
- The methodology should include a mix of quantitative (such as literacy tests and assessment tools) and qualitative (such as workplace observations and interviews) data collection methods (Wakefield, 1997; Payne, 2002; Burt & Saccomano, 1996; Hartley & Horne, forthcoming)
- On the other hand, Sticht (1999) suggests that the reliance on subjective data be limited when governments are evaluating the effectiveness of a programme.
- Sticht (1999) recommends ratings of programme participants and non-participants from supervisors and managers who are unaware of which employees have been involved in training. This strategy should reduce any reporting biases, such as the tendency to overestimate effects.
- The methodology should include the measurement of indicators before and after training (Sticht, 1999; Pearson, 1996, Ananiadou, Jenkins & Wolf, 2003; Johnston, 2004)
- The measurement of outcomes should occur for all participants who participated in the programme, not just those who completed the programme (Johnston, 2004)
- Nationally standardised tests should ideally be used, where possible, to allow for comparability with other programmes (Sticht, 1999)
- Longitudinal data should ideally be used, where possible, to test the effects over time (Ananiadou, Jenkins & Wolf, 2003; Payne, 2002; Johnston, 2004; Hartley & Horne, forthcoming).

Learnings from the methods used in studies investigating the outcomes and impacts of work-based literacy and numeracy programmes

The present literature search found that there is a lack of good quality studies on the outcomes and impact of workplace literacy training, particularly in Australia but also internationally. This reflects previous suggestions that few studies have been able to quantify qualitative findings and that many studies were based on descriptive case-studies and evaluations within enterprises and industries. These descriptive case studies and evaluations do provide useful insights but lack the ability to generalise findings to the population.

This conclusion is consistent with three international reviews of the literature by Johnston (2004), Ananiadou, Jenkins and Wolf (2003), and Payne (2002). These researchers indicate a need for:

- good quality studies on the impact and outcomes of work-based literacy and numeracy programmes to provide direct evidence of impact and outcomes

- the development of an overall framework for which research can be carried out, findings collated and disseminated
- a systematic approach to capture the lessons learnt from practice, which have been described in case study research and published workplace literacy and numeracy programme evaluations

Johnston (2004) suggests that studies on the outcomes and impacts of literacy programmes should ideally involve random assignment of people to either a treatment group (those receiving the training) or a control group (those not receiving the training). This experimental design would provide direct evidence of the outcomes and impacts of workplace literacy programmes. Although experimental designs involving random allocation are preferred, they are not always practical. An alternative method is to construct a comparison group of people who are as similar as possible to the treatment group, such as people who were eligible for the programme but did not start. This method can be affected by selection bias as people who choose or are selected to participate in training may differ in a way that affects the outcome or impact measure (Johnston; 2004; Rahmani et al, 2002).

An alternative approach recommended by Ananiadou, Jenkins and Wolf (2003) and Sticht (1999) to provide direct evidence of the outcomes and impacts of work-based literacy and numeracy programmes is a quasi-experimental design whereby indicators are measured for the same firm(s) before training and at least once after training to assess improvements over time. Pearson et al (1996) also suggest measurement during training.

Another method is to conduct a multiple regression analysis with a performance indicator (for example productivity) as the dependent variable, a measure of training as the independent variable and control variables such as education, occupation and industry. Ananiadou, Jenkins and Wolf (2003) indicate that this method is more commonly used but less ideal as the results may be influenced by unobserved variables and direct causal relationships cannot be determined. Furthermore, Johnston (2004) finds a reduced effect on the economic return to individuals from literacy and numeracy training when education is included as a control variable. This suggests that literacy and numeracy has a direct and indirect effect on returns to training and may necessitate a complex model to identify indirect and interaction effects between literacy and numeracy skills and variables such as educational attainment and innate ability.

Finally, many important findings and useful insights have been made from studies that use qualitative data, particularly those that involve surveys of large and representative samples. One of the most commonly cited studies of this type is the Australian study by Pearson et al (1996) where the researchers collected data from programme participants, supervisors and managers on several key performance indicators, as described earlier. As already mentioned Pearson et al note the difficulties of measuring the impact of training on the workplace. Nevertheless, their project was able to identify and quantify direct costs savings accruing from language and literacy inclusive training in several of the workplaces participating in the study (see pp. 22-23 and pp.30-33).

In conclusion, the research methods and findings summarised within this section were largely derived from research that measured the outcomes of workplace literacy training to the individual and to the enterprise. We have not described how the wider impacts to the national economy and/or the government can be directly measured, as this was not measured in the research on workplace literacy and numeracy programmes. Specifically, there was a lack of research that directly measured the impact to governments in terms of:

- Welfare spend
- Contribution to the economy
- Tax take
- Other portfolios, such as health

Blundell et al. (1999) and Johnston (2004) indicate that even in the wider fields of literacy training and training in general, there is a lack of empirical research that directly examines the returns to the national economy. They identify a country level regression approach that compares the level of, or growth in the level of, output of goods and services per country (gross domestic product) amongst countries with different levels of literacy. Coulombe, Tremblay and Marchand (2004) are one of few researchers to adopt such an approach. They use literacy scores obtained from the International Adult Literacy Survey and estimate that countries with literacy scores one per cent higher than the average will, on average, result in 2.5 per cent higher gross domestic product and 1.5 per cent higher labour productivity than other countries. Although these findings are useful to guide policy, they are wider than the scope of this literature review on workplace literacy training. Johnston (2004) also warns of the potential influence on the results of other factors that correlate with literacy scores and that this methodology does not indicate what level of education and/or literacy training should be implemented to improve economic performance.

Due to the suggested short-comings of cross country level regression analyses, Johnston (2004) suggests that studies that examine the economic returns to the individual and the employer provide greater insight to the impact of literacy training on the National economy. Pearson et al (1996), Gemmell (1997, in Blundell et al, 1999) and Redding (1996, in Blundell et al., 1999) also suggest that the wider impacts of literacy training to the national economy and/or the government can be indirectly measured through measuring the outcomes that accrue to the individual (for example ability to maintain employment) and the enterprise (for example productivity). Hence, these researchers suggest the individual and enterprise gains will spill over to the national economy⁶ and Johnston suggests these individual and enterprise effects are more easily measured than country level effects.

⁶ Various economic theories are used to explain the spill-over effects, such as 'the new growth' theory, which suggests that the effects from education and training can lead to a continuous and self-sustaining growth in outputs. See Blundell et al. (1999) for further information.

Question four

In all of the available literature, where has the WELL programme been mentioned?

The literature search found around 40 mentions of the WELL programme (see Table 10 in the appendix). This included mentions in:

- Articles
- Australian research reports
- An international research report
- Evaluation reports
- Case studies published in research reports and brochures
- A training plan

This literature mentioned the programme in varying contexts (see Box 4).

Box 4 Summary of the contexts of WELL mentions

In summary, the literature included the mention of the WELL programme within the following contexts:

- Describes the WELL programme as an adult literacy programme within Australia (9 reports)
 - A general mention of existence (4 reports)
 - A mention that it is effective or highly regarded (2 reports)
 - A description of the level of participation (3 reports)
 - A detailed description, such as the role of the programme (3 reports)
- Describes, in a case study, or evaluates WELL funded training within a specific workplace or industry (22 reports)
- Evaluates or studies the outcomes of the WELL programme (3 reports)
- Specifies that an enterprise plans to use WELL funded training (1 report)
- Describes or evaluates the evaluation methods or reporting tools used within the WELL programme (6 reports)

Note: The sum of the number of reports in brackets is greater than 40 as some reports mentioned the WELL programme within more than one context.

Several reports mentioned the WELL programme as a workplace literacy and numeracy programme in Australia. Some of these reports went on to mention that the programme is regarded, in Australia and overseas, as highly effective.

“[the WELL programme] is held in high regard and is seen overseas as an effective workplace-based model of literacy delivery” (Castleton, 2002, p. 1).

Other reports provided more thorough descriptions of the programme and several reported benefits from those involved in the programme. The benefits reported from participation in the WELL programme are covered in the analysis of question two. To build on this, for example, Misko (unpublished, 2006) provides a description of the features of the programme and indicates that 18 143 Australians were involved in the WELL programme from August 2004 to May 2005. Shore (2003) provides a profile of WELL contracts in South Australia and indicates a steady increase. Millar (2001) describes the WELL programme in Tasmania and suggests that it is of considerable importance with many benefits from the programme accruing to the involved workplaces and employees.

Observed improvements and changes in WELL participants were also reported in several case studies and commissioned evaluations of WELL funded training; one review of the WELL programme; and two studies on the reporting mechanisms within WELL⁷. These improvements and changes coincide with the benefits reported from workplace literacy programmes in general (see analysis against question two). They include:

- Improved morale and confidence of employees
- Improved skills (oral, written and computer)
- Improved capacity to multi-skill
- Improved team work
- Improved productivity
- Improved attitudes and workplace culture towards training
- The development of a training plan
- Cultural awareness
- Improved occupational health and safety awareness
- Direct cost savings

Gains were not limited to low level positions with managers and supervisors also reporting benefits from participation in WELL themselves. For example, Keating (2002) indicates that at a large transport company in Western Australia, managers and supervisors who participated in the programme reported gains of networking opportunities and familiarity with assessment.

While the gains for individuals and workplaces involved in the programme were clear, there were only a few mentions of the flow-on benefits of the WELL programme to the family, community and the wider society. Wickert and McGuirk (2005) suggest there were benefits to the wider community noted in their case study of a WELL project involving volunteer firefighters in Queensland and Victoria. For example, they suggest that a key outcome of the project was a high level of commitment from WELL providers and strengthening of relationships between the organisation's regional staff.

Despite minimal reporting of flow-on effects, Pearson et al (1996) suggest that the benefits reported from participants involved in WELL funded training automatically flow-on to benefit other facets of participants' lives as well as the Australian economy.

“What the case studies also serve to underline is the enormous benefit that necessarily accrues to the nation as a by-product of the development of individuals' skills to communicate and train. When an individual becomes able to access further training, or to take on different roles, or to participate more fully in the life of the workplace, there is an obvious corollary that not just the workplace and the economy but also the individual in general, have benefited” (Pearson et al, 1996, p. 122).

⁷ For examples, see Linda Wyse & Associates (2001); Hislop (1994); Brewer, Collins and Wyse (2001); Baylis (1995); and Wakefield and Pearson (1997).

Gap analysis

Comparable programmes

The literature review did not uncover programmes in Australia similar to WELL operating at the State and Territory level or in the community, although in Brewer et al.'s evaluation of the TDT WELL programme, it is suggested that the South Australian Workforce Development Fund may have a better approach to the application process. This fund would merit examination (see <http://www.employment.sa.gov.au/employ/>) as would discussions with adult literacy policy makers and practitioners in the States to see whether there are in fact programmes with which WELL can be compared.

At the international level, there are no specific comparisons made but, as is reported in chapter one, WELL shares best practice features with other workplace literacy programmes in the United States, United Kingdom, Canada, Ireland and New Zealand.

It would be advantageous to approach some of those companies who received WELL funding to see how their literacy programmes fared once the subsidy ceased. Those who might be approached include: John Holland and the CFMEU, as well as BHP Billiton. In the case of the latter, it would be interesting to know whether the experience with WELL in Australia informed their approach to literacy programmes elsewhere, for example at Ekati Diamond Mine, referred to in Chapter One. (<http://www.conferenceboard.ca/boardwiseii/Document.asp?DID=669>).

Measuring outcomes

The literature search did not uncover the reporting systems and indicators used overseas to report on government funded workplace literacy programmes. This was despite Sticht (1999) indicating that investigating indicators for accountability will be the focus of federally funded adult literacy programmes in the United States in the first decade of 2000. Much of the information attained on the indicators used to measure outcomes related to the National Reporting System and the Impact Evaluation Instruments that were developed in Australia.

While dollar values of the outcomes of workplace literacy programmes have been estimated, there has been little attempt to compare these to the costs of the programmes. Baylis (1995) provides figures of funding levels for the WELL programme in the early 1990s and Shore (2003) more recently uses the WELL information management system to present a profile of the number of contracts granted in South Australia. However, these analyses do not capture employer contributions to training costs and do not compare the costs to the dollar value of the benefits obtained.

It has also become very clear from the literature review that much work remains to be done in measuring the economic benefits of workplace literacy programmes. There seems to have been a willingness to accept that improved literacy will bring good results for individuals, the community and business, and actions have been taken accordingly. However, Grant Johnston, NZ Treasury, notes that there have been very few rigorous studies into the impact of literacy programmes. There is some evidence that these have a positive effect on earnings and the other benefits literacy can bring but little evidence about the benefits of literacy training per se. See also Ananiadou, Jenkins and Wolf (2003). *The benefits to employers of raising basic skills levels: a review of the literature*, who point out there is far more evidence about training in general than basic skills training. Where there is evidence about the effects for individuals of basic skills acquisition it is almost entirely

concerned with learning and skills acquisition which took place outside the workplace. This work could, however, provide a basis for more specific study of workplace literacy programmes.

A recurring theme in the literature is the diversity of benefits improved literacy can offer—for individuals and their families; the workplace; the community; and the economy. This suggests that in assessing the impacts of workplace programmes, it would be useful to go beyond quantitative measurement to consider broader social capital gains. Balatti, Black and Falk, in a forthcoming study of students in TAFE, have started to take this social capital perspective. It would be useful to apply their learning to people studying literacy in the workplace. This might be done within the framework of the Australian Bureau of Statistics work on social capital.

Measuring impact

While there is some evidence on the outcomes of workplace literacy programmes, there appears to be a lack of research on the wider impacts of workplace literacy programmes. In particular no research was uncovered on the benefits of improving literacy and numeracy levels for the government in terms of welfare spending; implications for health budgets; or increased tax revenue.



Measuring the outcomes and impact of the WELL programme


A key finding of the literature search was that there were only a few reports and one review that reported on the outcomes to the overall WELL programme. Most of the findings on outcomes, while useful, were at the industry and enterprise level and therefore often did not involve representative samples.

Appendices


Summative data and tables

Table 9 Indicative list of programmes similar to WELL in other countries

Country	Programme	Year	Case Study	National Government Investment	Provincial (State) or Local Government Investment	Employer Investment	References
Canada 	<p>Essential Skills and Workplace Literacy (ESWL) http://www15.hrdc-drhc.gc.ca</p> <p>Goal: to enhance the skill levels of Canadians entering—or already in—the workforce. Activities: increasing awareness and understanding of essential skills needed for work, learning and life and to help people evolve with their jobs and adapt to workplace change; supporting the development of tools and applications; building on existing research; working with other Government of Canada programmes.</p> <p>ESWL builds on the Essential Skills Research Project (ESRP) and the Test of Workplace Essential Skills (TOWES). The essential skills profiles that emerged from the ESRP are now used extensively by industry and educational partners to set training standards appropriate to particular occupations. TOWES is a test of the three essential skills (reading text, document use and numeracy) based on the IALS using test materials that are authentic workplace materials.</p>	Began April 2003	Cases from 2 diamond mines in Yellowknife, Northwest Territories, (Diavik and BHP Billiton BHPB) working largely at Aboriginal people in the communities and workforce; from 2 oil companies (Syncrude and Suncor) in Alberta; and the trucking sector.	Federal government funding for development of essential skills tools	BHPB case: provincial government provided part of the funding for salary of adult educator	BHPB annual budget of \$C 450,000 for 3 adult educators; computer resources; learning materials; mine site flights.	Brisbois & Saunders, 2005
New Zealand 	<p>Workbase: national workforce literacy organisation. It functions with both government and private funding. Its work is centred on developing and promoting workplace literacy initiatives, as well as advising government and facilitating best practice literacy delivery within the education and training sector. Workbase provides: innovative solutions to low workforce literacy; access to quality learning and training materials; research; and professional development for training providers to improve the literacy skills of the New Zealand workforce. (In addition to Workbase's activities, literacy provision</p>	Up until 1990, most adult literacy provision community based. In 1990s, pilot literacy projects in Auckland workplaces began.	Rotaform Plastics Ltd: voluntary scheme: literacy skills assessed and people grouped according to their literacy levels. Tuition for one hour a week with the literacy tutor plus homework. All staff were studying				Workbase: Voices from Management. See also Voices from the Workplace and numerous individual case studies http://www.workbase.org.nz

Country	Programme	Year	Case Study	National Government Investment	Provincial (State) or Local Government Investment	Employer Investment	References
	is provided by small commercial companies, educational trusts and some other educational organisations.)	Evolved into Workbase.	towards a National Certificate in Plastics. The literacy course was based on Rotaform's work procedures.				
Republic of Ireland 	The National Adult Literacy Agency (NALA) plays a critical role in advocacy, liaison with government agencies and professional and resource development. It promotes workplace literacy programmes within the vocational education sector and in government. (Receives some EU funds)	Est. 1980. Since 1985 funded by Dept of Education and Science to run a national office	See also under local government in chapter one Skills 4 Work	Department of Education and Science (Ireland) (Receives some EU funds) (Receives some EU funds)	Local government (also the employer) contribution		http://www.nala.ie
	2005 Dept of Enterprise Trade and Employment set up a Workplace Basic Education Fund (WBEF) with a budget of €2m. Aim: to develop initiatives to provide opportunities for employees to improve their literacy and numeracy skills.			(Receives some EU funds)			http://www.fas.ie/pdf_files/Guidelines_for_WBE_fund.pdf
	The <i>Return to Learning Initiative</i> (Conboy, 2002) was a pilot project conducted by the Local Authority National Partnership Advisory Group (LANPAG) and the National Adult Literacy Agency. The major finding from the evaluation of this project was that providing literacy training in the workplace was a valid endeavour but one which required a high level of support and commitment as well as an emphasis on creating a safe and supportive milieu for the participants (who were 'outside' workers) both in the classroom and the workplace.	Covered 120 participants in five programmes from January to August 2001.		100% funded by Irish Government The total budget for the project was IR£108,000 (€137,132), funded 50 percent from LANPAG and 50 percent			

Country	Programme	Year	Case Study	National Government Investment	Provincial (State) or Local Government Investment	Employer Investment	References
	<p>regional centres for union learning; support union representatives on public learning and skills bodies; enable workers to develop their skills and qualifications in progressive steps, from basic skills to Foundation Degrees and beyond, supported by the new integrated information and guidance service for adults; sponsor research and its dissemination.</p>	<p>Between 2001 and 2003</p>					
	<p>The UK Basic Skills Agency ran a National Support Project for Local Government This was a partnership between the Basic Skills Agency, the Improvement and Development Agency (I&DeA) and Thurrock Borough Council. The project's aims were to raise awareness within local government about basic skills issues and to assist local authorities develop and implement basic skills strategies.</p> <p>See www.basic-skills.co.uk for many further examples, e.g. workplace training in the army.</p>						
			<p>One UK case in Wales Advocate Worker for Learning Scheme at Shotton steelworks</p> <p>Steel Partnership Training Ltd (STP), the training arm of the Iron and Steel Trade Confederation initially trained six 'advocate workers' who in turn facilitated opportunities for employees to improve their basic</p>	<p>The scheme received support from the National Assembly of Wales, as part of its promotion of lifelong learning.</p>		<p>Owner of the plant, Corus, a silent partner, providing facilities and finance and letting the union drive the project. Involvement of Corus & the management at Shotton, vital but so was low profile as employees in the steel industry can be suspicious of corporate</p>	<p>Wallis, Emma, Work-based project overcomes basic skills stigma Adults Learning, NIACE (October 2002, Vol 14 No2, pp27-28)</p>

Country	Programme	Year	Case Study	National Government Investment	Provincial (State) or Local Government Investment	Employer Investment	References
			skills, using the vehicle of an IT skills course. Free classes timed to suit shifts, open to both employees, including sub-contractors, and their families. Inclusion of sub-contractors, less able to access workplace training, was a particular innovation. Participants in the computer courses were new learners.			training initiatives. Corus also recognised people would be nervous declaring to their employer that they had skills deficits .	
United States of America 	National Institute for Literacy has led a collaborative, nationwide effort to develop adult learning standards to guide instruction and assessment and to improve the quality and results of adult literacy programmes. This has resulted in 16 Equipped for the Future standards used to define the knowledge and skills adults to carry out their roles as parents, citizens and workers in the twenty-first century. Framework is increasingly used to guide content of instruction or as a curriculum framework.	Since 1993					http://www.ed.gov/pubs/Biennial/413.html

Country	Programme	Year	Case Study	National Government Investment	Provincial (State) or Local Government Investment	Employer Investment	References
	<p>National Workplace Literacy Program (NWLP), funded demonstration projects, whose curricula had to focus on skills employees needed for their jobs. Process: job tasks defined by the employer; literacy audit by basic skills specialist to clarify the basic skills required by that job. Curriculum focused on the skills identified as necessary through this assessment process. This could be a curriculum that taught carpenters how to make precise measurements, bank tellers the customer service skills they needed to explain new financial services to customers, or production workers how to interpret the statistics issued by computerised equipment. More than half the new projects funded offered release time for literacy training. Nearly two-thirds of the projects had an ESL component.</p>	1988-1994	<p>\$130 million initiative of the US Department of Education</p> <p>Grants made primarily to public organisations, incl. community colleges, colleges and universities; State and local education agencies; and community-based organisations.</p> <p>Each project involved one or more business or labour partners.</p>	Approach adopted by several state-level workplace education initiatives as their standard			
	<p>The US Chamber of Commerce (through its affiliate, the Centre for Workforce Preparation) has prepared a call to action toolkit entitled <i>A Chamber Guide to Improving Literacy: High Skills, Bottom-Line Results</i>. The kit involves:</p> <p>fact sheets outlining the dimension of the problems, examples of literacy and numeracy skills in the workforce, organisation benefits of the programmes (bottom line issues), proposed action a company case studies</p> <p>resources for companies including contact lists of organisations; presentation materials for workforce meetings; tools for measuring an employee's and company's skill needs; and calculations on gains, outputs and benefits.</p>						<p>http://www.uschamber.com/NR/rdonlyres/ejagoi7efvlfmdi7um56jycchbtzxp6k23oal5wthf2f7orryicyaeawvzz22hsjmqhlsbn2uki2k/RResource12.pdf</p>

Country	Programme	Year	Case Study	National Government Investment	Provincial (State) or Local Government Investment	Employer Investment	References
	<p>Workplace Education Programmes develop basic skills. They may target workplace basic skills exclusively (e.g., the ability to read and apply documents, the ability to use numbers, English as a Second Language), or may incorporate technical and job-specific training within a broader training framework. WEPs typically involve up to 25 organisations, including private and public-sector employers, governments, education institutions and unions. They are often customized and delivered by professional educators from community colleges and other public education institutions, or private trainers, to meet specific workplace needs.</p>	1995–1998	<p>Funded by the U.S. Department of Education as part of the National Workplace Literacy Program.</p>				<p>http://www.conferenceboard.ca/education/reports/pdfs/Skills_Profits.pdf The report's appendix (pp.14-15) lists the employer organisations and unions interviewed.</p>

Table 10 **Mentions of the WELL programme**

<i>Author</i>	<i>Context</i>	<i>Observed changes attributed to WELL</i>
Baylis (1995)	A post implementation review of the WELL programme	A considerably majority considered the WELL programme to have had an impact on enterprises. Identified areas of improvement include achievement of work credentials, increased confidence and orientation to work, participation at work and career pathways
Brewer, Collins and Wyse (2000)	The report evaluates the merit and usefulness of the TDT Australia WELL programme	For those that have been involved with WELL, a variety of success stories were reported. Examples of positive outcomes are improved computer literacy, multi-skilling, written communication skills, esteem and productivity
Castleton (2002)	Article that mentions the effectiveness and high regard internationally for the WELL programme	Not discussed
Cipollone and McGuirk (2001)	Gathered data from a number of nationally funded adult literacy and numeracy programmes including the WELL programme	Not discussed
Construction Training Australia (1995)	Strategy and plan of communication training within a WELL programme. The plan consists of performance indicators linked to four key objectives	Not discussed
Del Grosso (2000)	Describes how training funded through the WELL programme will support the TNT industry and address issues regarding language literacy and numeracy to assist enterprises with the implementation of the Transport and Distribution Training Package	Not discussed
DEST (forthcoming)	Mentioned as a programme designed to improve the skills of those entering the job market	Not discussed
Dept of Education, Training and Youth Affairs (2001)	A case study of a company that has implemented WELL funded training	Cultural awareness; improved communication and a positive attitude towards training
Fitzpatrick (2000)	Describes a workplace communication project that was funded by WELL (concluded 1990)	Cultural shift in industry attitudes about literacy and numeracy issues.
Guenther (undated)	Case study research examining literacy and numeracy provision in regional Australia	Not reported but mentioned that in most of the case studies, funding and curriculum for literacy and numeracy provision was tied to vocational outcomes— Guenther suggested that funding for literacy and numeracy provided through WELL or LANT falls into this category.
Hislop (1994)	An evaluation of a WELL funded programme in the building and construction industry	Improved communication; change in attitude and workplace culture towards training; the development of a training plan; improved literacy and numeracy skills; and increase in employee confidence

Author	Context	Observed changes attributed to WELL
Keating (2002)	An article that describes how training packages, skills recognition and literacy and numeracy are powerful tools in the development of a workplace training culture at TNT, a large transport company at Kwinana in Western Australia	Networking opportunity that has allowed regular interaction with other managers and supervisors. Improved familiarity with assessment among managers
Linda Wyse & Associates (2001)	Nine separately published case studies of companies that have implemented WELL funded training	Outcomes such as increased participation in team and safety meetings; greater independence, responsibility and confidence of workers; improved attitudes to training and literacy; improved productivity and efficiency; and greater awareness of occupational health and safety
O'Neill and Gish (2001)	A report that mentions the WELL programme as an initiative to address literacy needs in the workplace	Not discussed
Manufacturing learning Victoria (2003)	Manufacturing Learning Victoria have produced a kit detailing case studies of WELL projects in industries in the manufacturing sector in Victoria	A range of outcomes are described
Mawer (1994)	An evaluation of a WELL funded project in a pharmaceuticals manufacturing company. Performance indicators were used to measure the objectives	A variety of outcomes such as a change in attitude and access to training; a reduction in communication barriers; increased confidence and trust of employees; increased employee involvement and teamwork
McGuirk, Boothroyd & Highet (2001)	Compares two case studies to determine if workplaces that have a history of WELL funding were more likely to experience successful outcomes in the implementation of training packages than workplaces with such history	Improved understanding of the complexity of communication among managers and team leaders. Improvement in OH&S with a decrease in the number of workers' compensation claims. A more productive, adaptable and happy workforce
McKenna & Fitzpatrick (2004)	P. 35, Mentioned as one of the programmes in Australia that is evaluated	Not discussed
McKenna et al. (1997)	Considers the National Reporting system as a reporting tool in the WELL programme	Not discussed
Miller (2001)	Investigates the role of the WELL programme in Tasmania and suggests the WELL program is of great importance	Main outcomes identified were: enhances equity in the workplace, makes people aware of the possibilities of training, and improves communication skills
Misko (unpublished, 2006)	Included in a description of the Commonwealth Government literacy and numeracy programmes. Indicates that between August 2004 and May 2005, there were 18 143 participants in the WELL programme	Not discussed
Pearson et al. (1996)	Investigates a quantitative assessment of the impact of literacy and numeracy training in the workplace (all workplaces in the study had at some time received either WELL or FILLIP funding).	Reports positive outcomes associated with direct cost savings; access to and acceptability of further training; job promotion and flexibility; and personal and interpersonal factors.
	In the same report, findings from case studies are reported (all workplaces in the study had at some time received either WELL or FILLIP funding)	A mixture of evidence that suggests a link between the training and workplace gains. The benefits include improvements in productivity, saved labour costs, saved jobs, improved workforce flexibility, improved worker participation in teams and improved outcomes of other workplace training
Perkins (2005)	Investigates the use of the national reporting system in the WELL programme	Not discussed

Author	Context	Observed changes attributed to WELL
Shore (2003)	Examined WELL provision in South Australia. Notes that the WELL management information system provides a profile of contracts granted in South Australia. Overall, there appears to have been a steady increase in the number of WELL contracts granted to South Australia in the last four funding periods.	Not discussed
Smith and Sushamas (2000)	WELL programme was implemented in the maritime industry to address unsafe practices. WELL programme is recommended to others.	Not discussed except that has allowed students to complete a certificate.
Tomoana and Heinrich (2004) (International reference)	An international report that mentioned WELL as an Australian work-based literacy programme	Not discussed
Wakefield (1992)	This project looks specifically at the evaluation of National WELL projects, with particular focus on WELL projects within the Australian Light Manufacturing Industry Advisory Board industries	Not discussed
Wakefield and Pearson (1997)	This report is a trial conducted in 1997 of the new reporting mechanisms of the WELL programme	Improvement in team member participation, savings in wastage, improvement in personal and interpersonal factors (for example, morale, attitude to training, and confidence to communicate).
Wallace and Murray (1997)	Case studies of the workplace language and literacy in action project. Some of the case studies reported using WELL funded training	Personal development of employees, the value of effective communication; the importance of learning; and the awareness of different needs of learners
Wickert & McGuirk (2005)	Examined four workplace projects, by asking state co-ordinators to nominate two exemplary WELL projects. The report noted that innovation is easier to encourage when there are funding incentives and people understand and relate to the objectives and outcomes, such as in the WELL programme	Some of the outcomes reported by the workplaces and providers were participation in subsequent training (which in one case study had an impact on safety); increased confidence in participating in training; the building of trust; the willingness of WELL providers to be flexible and to match training to the needs of the organisations; and a high degree of commitment from WELL providers

Note: In chapter four, the case studies by Linda Wyse & Associates (2001) were counted as nine separate case studies.

Websites searched

Australian websites searched

ALNARC – Adult Literacy and Numeracy Australian Research Consortium

<http://www.staff.vu.edu.au/alnarc/>

AMEP Research Centre

<http://www.necitr.mq.edu.au/amep/index.html>

Australian Bureau of Statistics

<http://www.abs.gov.au>

Australian Council for Adult Literacy

<http://www.acal.edu.au/>

LiteracyNet

<http://www.dest.gov.au/literacynet/default.htm>

National Centre for English Language Teaching & Research

<http://www.nceltr.mq.edu.au>

National Reporting System (NRS) Online

<http://www.nrs.dest.gov.au/>

Workplace English Language and Literacy Programme

http://www.dest.gov.au/sectors/training_skills/programmes_funding/programme_categories/special_needs_disadvantage/well/

International websites searched:

Basic Skills Agency

<http://www.basic-skills.co.uk>

Business New Zealand

<http://www.businessnz.org.nz/>

Campaign for Learning (interested in workplace learning)

<http://www.campaign-for-learning.org.uk/>

Canadian Education Association

<http://www.cea-ace.ca>

Embedded Learning Portal – UK Dept for Education and Skills

<http://www.dfes.gov.uk/readwriteplus/embeddedlearning/index.cfm>

Employment & Training Administration – US Dept of Labor

<http://www.doleta.gov/>

Literacy Information and Communication System (LINCS) Policy and Legislation

<http://www.nifl.gov/lincs/collections/policy/policy.html>

Movement for Canadian Literacy

<http://www.literacy.ca/>

National Adult Literacy Agency

<http://www.nala.ie/>

National Center for Education Statistics

<http://nces.ed.gov/>

National Center for the Study of Adult Learning and Literacy

<http://www.ncsall.net/>

National Education Research Forum

<http://www.nerf-uk.org/>

National Institute for Adult and Community Education

<http://www.niace.org.uk/Research/BasicSkills/Default.htm>

National Institute for Literacy (NIFL)

<http://www.nifl.gov>

National Literacy Program (Canada)

http://www.hrsdc.gc.ca/en/gateways/nav/top_nav/program/nls.shtml

National Research and Development Centre for Adult Literacy and Numeracy

<http://www.nrdc.org.uk/>

New Zealand Literacy Portal

<http://www.nzliteracyportal.org.nz>

OECD

<http://www.oecd.org>

Statistics Canada

<http://www.statcan.ca/start.html>

UNESCO literacy portal

http://portal.unesco.org/education/en/ev.php-URL_ID=40338&URL_DO=DO_TOPIC&URL_SECTION=201.html

United Nations Literacy Decade 2003 – 2012

http://portal.unesco.org/education/en/ev.php-URL_ID=5000&URL_DO=DO_TOPIC&URL_SECTION=201.html

Workbase – supporting workforce literacy

<http://www.workbase.org.nz/>

Worktrain

<http://www.worktrain.gov.uk>

Additional websites searched:

Australian Government: Productivity Commission

www.pc.gov.au

Briefing Paper: literacy and the Canadian workforce

<http://www.literacy.ca/public/brief/cover.htm>

Centre for Workforce Preparation

<http://www.uschamber.com/CWP/default.htm>

Department of Labor, Employment and Training Administration, Draft White Paper: Workforce Investment Act of 1998 Implementation

<http://wdr.doleta.gov/readroom/FedReg/notices/98030228.pdf>

Literacies: researching practice, practicing research

<http://www.literacyjournal.ca/>

National Center on Adult Literacy (NCAL)

http://www.literacyonline.org/ncal_currentR&D.html

National Governor's Association: Center for Best Practices

<http://www.nga.org/portal/site/nga/menuitem.50aeae5ff70b817ae8ebb856a11010a0/>

National Workforce Assistance Collaborative

<http://www.ed.psu.edu/nwac/docs.html#Literacy>

NZ Centre for Vocational Education Research

www.nzcver.org.nz

Resources Special Collection: a service of the National Institute for Literacy

<http://eff.cls.utk.edu/resources/>

Resources Special Collection: a service of the National Institute for Literacy – EFF Policy and Legislation

http://eff.cls.utk.edu/resources/policy_leg.htm

What Works Clearinghouse

<http://www.w-w-c.org/topic4.html>

Workforce Investment Act

<http://www.nifl.gov/lincs/collections/policy/wia.html>

WorkSite: PaeMahi

<http://www.worksite.govt.nz>

Adult literacy and numeracy journals

Adult basic education: an interdisciplinary journal for adult literacy educators

(<http://www.coabe.org/index.cfm?fuseaction=journal>)

Australian educational researcher (<http://www.aare.edu.au/aer/contents.htm>)

Australian journal of adult learning (<http://www.ala.asn.au/>)

Australian language and literacy matters (<http://www.caepress.edu.au/journal/journal01.html>)

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- Australian TAFE Teacher (<http://www.aeufederal.org.au/Publications/TATT/TATTissues.html>)
- British educational research journal (<http://www.tandf.co.uk/journals/carfax/01411926.html>)
- Canadian journal for the study of adult education
(http://www.oise.utoronto.ca/CASAE/cjsae/CJSAE-RCEEA_Guidelines_UBC1.html) – submission information only online)
- Convergence (<http://www.icae.org.uy/eng/pub.html>)
- Educational researcher (<http://www.jstor.org/journals/0013189X.html>)
- Electronic journal of literacy through science
(http://www2.sjsu.edu/elementaryed/ejltts/current_issue/index.html)
- ESL Magazine (<http://www.eslmaq.com/>)
- Exploring adult literacy (<http://literacy.kent.edu/cra/>)
- Fine Print (<http://fineprint.valbec.org.au/archive/>)
- Focus on basics (<http://www.ncsall.net/?id=31>)
- Internet TESL journal (<http://iteslj.org/>)
- Journal of adolescent & adult literacy (<http://www.reading.org/publications/journals/jaal/index.html>)
- Journal of educational research (<http://www.heldref.org/jer.php>)
- Language & literacy: a Canadian educational e-journal (<http://www.langandlit.ualberta.ca/>)
- Language learning & technology (<http://llt.msu.edu/>)
- Literacies: research practice, practising research (<http://www.literacyjournal.ca/>)
- Literacy and numeracy studies: an international journal in the education and training of adults
(<http://www.education.uts.edu.au/lms/>)
- Literacy link (<http://www.acal.edu.au/newsletter.shtml>)
- Literacy today (<http://www.literacytrust.org.uk/pubs/literacytoday.html>)
- New horizons in adult education (<http://education.fiu.edu/newhorizons/>)
- Quest (<http://www.ala.asn.au/pubs/ALAn/newsletter.html>)
- Research and practice in adult literacy (RaPAL) journal
(<http://www.literacy.lancs.ac.uk/rapal/cissue.htm>)
- Studies in the education of adults (<http://www.niace.org.uk/publications/Periodicals/Studies.htm>)
- TESOLANZ journal (<http://www.tesolanz.org.nz/Journal.htm>)

Annotated bibliography

The annotated bibliography has been divided into two sections:

- literature significant to this study
- other literature of relevance.

Literature significant to this study

Ananiadou, K, Jenkins, A, Wolf, A, 2003, *Research review: The benefits to employers of raising workforce basic skill levels: a review of the literature*. London, United Kingdom: National Research and Development Centre for Adult Literacy and Numeracy (NRDC), 54 p.

This report presents the key findings, and implications for employers, of research relating to the effects of basic skills training in the workplace, and the potential benefits to employers of encouraging higher basic skills levels among their workforce. An extensive search of primary and secondary sources revealed that the amount of robust research directly relevant to this issue is very limited. For this reason, the review also covers the benefits to individuals of improving basic skills and examines the literature on the benefits of training for employers, and employees, more generally. The authors aimed to provide a theoretical framework of benefits within which the evidence could be placed and to identify gaps in the evidence. Benefits to be considered in the review, subject to the availability of evidence, included increased profits, productivity, sales, turnover, growth and other direct benefits, as well as improved workforce flexibility, product quality, customer service and ability to adopt new initiatives. Sound evidence suggests that poor literacy and numeracy skills negatively affect the earnings and employment prospects of individuals. Labour market studies indicate that very few jobs can be performed properly without basic skills, and that skills requirements, particularly numeracy requirements, will increase further in the future. It is recommended that research be undertaken in the form of large-scale quantitative analyses of literacy/numeracy training on representative datasets to assess its costs and benefits, and case studies investigating the effects of basic skills training at particular workplaces in depth. It is also recommended that data be collected, especially from the UK, on rates of return to training of any kind or data on training costs. This document may be available on the National Research and Development Centre (NRDC) web site at:

http://www.nrdc.org.uk/uploads/documents/doc_2792.pdf (accessed February 2006).

Antill, M, Cutter, J, Brass, J, Mortimore, C, Rodger, J, Shaw, N, York Consulting, 2001, *An evaluation of the Union Learning Fund in year 3, (Research report; no. 282), 81, 30 p, Nottingham, UK: Department for Education and Skills. (DfES).*

The Union Learning Fund (ULF), announced in 'The learning age' was set up to promote innovative activity by trade unions to support the creation of a learning society. This report sets out the quantitative and qualitative findings of a national evaluation of the UFL in its third year of operation. The structure of the report is as follows: the first section provides the background of the project, the evaluation objectives and outlines the methodology; section two sets out the project profiles; section three examines the performance of the projects undertaken in the third year, compares them to that of projects in years one and two, and reports on the total achievement over the three years; section four outlines the barriers faced by projects in the implementation of activities; section five provides details on the profile of learners involved in the UFL projects; section six reviews the basic skills projects and their performance; section seven reports on other activities generated by the ULF; section eight seeks to draw conclusions about the performance of ULF projects in achieving the overall objectives of the fund; section nine provides feedback from employers who participated in the ULF; section 10 draws together the good practice identified by unions and from the research underpinning the development of union capacity to deliver lifelong learning; and the final

section sets out recommendations for the future of the fund. Also included are five annexes: Year 3 ULF projects by union; ULF funding by union; Additional learning activity generated by the ULF; ULF project performance data years 1-3; Union density by government office region. This document may be found at:

<http://www.dfes.gov.uk/research/data/uploadfiles/RR282.doc> (accessed February 2006).

Bates, P & Aston, J, 2004, *Overcoming barriers to adult basic skills in Sussex Institute for Employment Studies (U.K.)*. Coventry, United Kingdom: Learning and Skills Council, 80 p. [Extracts from this publication may be reproduced for non-commercial educational or training purposes on condition that the source is acknowledged and the findings are not misrepresented].

The objectives of this research were to: uncover the barriers to adult basic skills learning; explore the extent to which these barriers can be overcome; and highlight elements of good practice that may improve the participation of adults in basic skills learning. Barriers to learning included: a tendency for people to over-estimate their literacy and numeracy abilities or not see the relevance of improving their basic skills; issues of stigma and negative school experiences; lack of time or resources to undertake learning; and lack of awareness among employers about basic skills and their workplace relevance. The contents are: Background and overview of research; Understanding basic skills; Motivations for learning; Dispositional barriers to learning; Practical and resource related barriers; Provider related barriers; Barriers to workplace learning; Addressing the barriers; References. This document may be found on the LSC web site at:

<http://www.lsc.gov.uk/NR/rdonlyres/eqwlp57i35s7wifa3ubijwdlh6vqx2o6rfqzcczhrveswu2lw37mq6bj6zqf2qc5yqs22zw5qpiuha/sussexlscbasicskills.pdf> (accessed February 2006).

Baylis, P, 1995, *Post implementation review of Australian Language and Literacy Policy (ALLP) for the Workplace English Language and Literacy (WELL) Programme*, Canberra: Department of Employment, Education and Training (DEET), 66 p.

This review provides an overview of the impact of the WELL programme. The conclusions are based on information derived from a desk audit of a representative sample of 10 per cent of projects funded over the three years of the operation of the WELL programme, a comprehensive phone survey of 70 representative project personnel and face-to face consultations with 50 personnel. The findings of the review are that the programme is meeting its objectives and as a result has considerably developed the field of workplace English language and literacy training nationally.

Beder, H, 1999, *The outcomes and impact of adult literacy education in the United States*, Cambridge: National Centre for the Study of Adult Learning and Literacy.

This study investigated the outcomes and impacts of adult literacy education through a qualitative assessment of the outcomes and impacts research conducted. The goals of the study were to make reasoned references about the effectiveness of adult literacy education in the United States; to identify common conceptual, design, and methodological problem inherent in the outcome studies conducted; to raise and discuss issues for policy; and to make recommendations for the design and conduct of future outcomes studies. It is noted that while the focus is on the wider field of adult literacy, there are four case studies specifically on workplace literacy programmes.

Bloom, M, & Lafleur, B, 1999, *Turning skills into profit: Economic benefits of workplace education programs*, 15 p., Canada: The Conference Board of Canada.

To overcome the widening gap between current skill levels and those needed to maintain competitiveness, companies are finding that workplace education programmes are leading to a host of improvements: 98 percent of employers report at least one employee skill and one economic benefit gained from these programmes. This report was prepared pursuant to a

contract with the Office of Vocational and Adult Education, U.S. Department of Education. More than 100 interviews were conducted with employers, employees, and union representatives from over 40 private and public-sector workplaces representing a cross-section of economic sectors throughout the United States. The interviewees were selected from 45 national workplace education projects funded between 1995–1998 by the U.S. Department of Education as part of the National Workplace Literacy Program. This document may be found on the Conference Board of Canada web site at: http://www.conferenceboard.ca/education/reports/pdfs/Skills_Profits.pdf (accessed February 2006).

Blundell, R, Dearden, L, Meghir, C & Sianesi, B, 1999, 'Human capital investment: The returns from education and training to the individual, the firm and the economy', *Fiscal studies*, vol.20, no.1, pp. 1-23.

This paper provides a non-technical review of the evidence on the returns to education and training for the individual, the firm and the economy at large. It begins by reviewing the empirical work that has attempted to estimate the true causal effect of education and training on individual earnings, focusing on the recent literature that has attempted to control for potential biases in the estimated returns to education and training. It then moves on to review the literature that has looked at the returns from human capital investments to employers. Lack of suitable data and methodological difficulties have resulted in a paucity of studies that have carried out sound empirical work on this issue. In the final part of the review, we look at the work that has tried to assess the contribution of human capital to national economic growth at the macroeconomic level. This work has generally involved using either a 'growth accounting' theoretical framework or 'new growth' theories. Although the empirical macroeconomic evidence that accompanies this work does not generally allow one to distinguish between the two approaches, there is a substantial body of evidence on the contribution of education to economic growth.

Brewer, K, Collins, N, Wyse, L, 2005, *Future directions: An evaluation of the TDT Australia Workplace English Language and Literacy Programme*. Australia: Transport and Logistics Industry Skills Council (TDT Australia).

This report evaluates the merit and usefulness of the TDT Australia Workplace English Language and Literacy Programme [WELL] over the last four years. In particular, the evaluation focused on: inroads and impacts the TDT Australia WELL programme has made to date; an environmental scan in the light of IT and access and equity strategies; provision of recommendations for future directions of WELL in the transport and logistics industry. To do this, telephone interviews were conducted with companies in the transport and logistics industry that had received WELL funding; companies that had not received WELL funding; Trainers and Registered Training Organisation who both had and had not worked with WELL programmes; State Industry Training Advisory Boards [ITABs]; a selection of regulators in the industry. This report may be found at: <http://www.tdtaustralia.com/files/documents/1125876846Future%20Directions%20-%20WELL.pdf> (accessed February 2006).

Burt, M & Saccomano, M, 1996, *Evaluating Workplace ESL Instructional Programs, United States: ERIC Digests* (online portal to education articles) <http://www.ericdigests.org>.

As the United States continued its shift from a manufacturing- to a service-based economy in the late 1980s and early 1990s, researchers reported that changes in employment patterns would require workers to have better communication skills and to be both literate and proficient in English (McGroarty & Scott, 1993). Not surprisingly, there was a rise in the number of workplace education programmes for both native and non-native speakers of English. The U.S. Department of Education's National Workplace Literacy Program (NWLP), which funded demonstration workplace projects offering instruction in basic skills, literacy, and English as a Second Language (ESL), fueled this increase by funding more than 300

projects between 1988 and 1994. Forty-nine percent of these projects included at least some ESL instruction. With this increase in workplace instructional programmes, a need has arisen for procedures to evaluate programme effectiveness. Evaluations of ESL workplace programmes seek to determine if the attention given to improving basic skills and English language proficiency has made a change in the participant and in the workplace. They also identify practices associated with programme effectiveness so that successes can be replicated (Alamprese, 1994). This digest examines evaluation measures and activities used in workplace programmes, and discusses issues associated with the evaluation of workplace ESL programmes. This document may be found at: <http://www.ericdigests.org/1996-2/workplace.html> (accessed February 2006).

Casey, H, 2005, *Embedded teaching and learning of adult literacy, numeracy and ESOL Seven case studies of embedded provision*, Research Summary 24, London: National Research and Development Centre for Adult Literacy and Numeracy.

This research uses ethnographic case study methodology, which should not be confused with other kinds of case studies, such as those used as exemplars of good practice. Ethnographic case study methodology involves looking at one set of activities in a very detailed and concrete way so that new insights and ways of looking at the problem are revealed. The aim is to stimulate creative thinking and disturb general assumptions.

Cipollone, J & McGuirk, J, 2001, *Adult literacy and numeracy practices 2001: A national snapshot*, Canberra: Department of Education Training and Youth Affairs (DETYA)

This study of national adult literacy and numeracy practice and provision was undertaken by TAFE NSW Access Division from April 2001 to October 2001, with funding from the Department of Education Training and Youth Affairs (DETYA). The aim of the project is to provide a snapshot of national adult literacy and numeracy provision showing the range and diversity of current practice and provision and an analysis of current best practice. The project gathered data from: a) selected samples of nationally funded adult literacy and numeracy programmes, including Workplace English Language and Literacy (WELL) and Literacy and Numeracy Training (LANT), b) major accredited programmes in general education and adult literacy and numeracy stand alone courses, c) providers offering literacy and numeracy support for vocational programmes, including Training Packages, d) teachers/trainers teaching in the above programmes. This document may be found on the LiteracyNet web site at: http://www.dest.gov.au/archive/ty/litnet/docs/litnum_2001.pdf (accessed February, 2006).

Conboy, P, 2002, *The return to learning initiative evaluation report and implementation guidelines*, Dublin: National Adult Literacy Agency.

The Return to Learning Initiative was developed and piloted during the period 2000-2001. The goal of the Initiative was to provide workplace literacy courses for the employees of five Local Authorities. The Local Authorities in question were Mayo, Meath, Offaly, Tipperary South Riding and South Dublin. The Return to Learning Initiative was developed jointly by LANPAG, the Local Authority National Partnership Advisory Group and NALA, the National Adult Literacy Agency. It was implemented in collaboration with the VECS, the Vocational Education Committees in the five Local Authority areas. The Initiative was co-funded by the Department of Education and Science and LANPAG. This document may be found on the National Adult Literacy Agency website at: http://www.nala.ie/download/pdf/report_return_to_learn.pdf (accessed February 2006).

Construction Training Australia 1995, *Building and construction industry: communication strategy*, Carlton: Construction Training Australia.

As workplace changes continue to occur in the building and construction industry, so too do the communication requirements of the workforce change. This strategy details how communication training can be integrated with technical and other forms of training, enabling

employees to develop their skills and contribute to the continuous improvement of their workplace. The primary aims of the strategy are to make training more relevant and more widely accessible to the industry's workforce, and to make sure that workers have opportunities to develop their communication skills for the benefit of both themselves and the industry. In the first part of this report, the main objectives of the strategy are outlined, as well as the specific initiatives and actions which will see each objective achieved. The second part of the report sets out the performance indicators for these initiatives.

Hartley, R & Horne, J, forthcoming, Social and economic benefits and costs of adult literacy in Australia: Towards a better understanding, Adelaide: NCVER.

This was an exploratory study involving a literature search and consultations with researchers experienced in longitudinal studies and cost-benefit analyses, as well as with experts in health and financial literacy. Reflecting the content of the literature, the report does not explore in any detail the benefits and costs of numeracy as a concept independent of literacy. Nevertheless, it is recognised that numeracy is an important area, and that further research is required in relation to costs and benefits. The overall purpose of the research is to work towards obtaining more reliable and useful estimates of the economic and social costs of poor adult literacy and numeracy, and the benefits of improving such skills in Australia.

Hislop, J, 1994, Evaluation of WELL at John Holland Construction and Engineering, NSW: TAFE NSW.

The report documents the findings of an evaluation of the WELL funded language and literacy project carried out by TAFE NSW at John Holland Construction and Engineering. The evaluation was conducted in 1994 by an external evaluator.

Hollenbeck, K, 1996, A framework for assessing the economic benefits and costs of workplace literacy training, paper presented at the Workplace Learning: The strategic Advantage, Milwaukee, Wisconsin.

The purpose of this paper is to present a cost-benefit framework for analysing workplace training; to present some empirical evidence from earlier studies about the payoff to individuals and firms; and to provide policy recommendations, <http://www.upjohn.org/publications/wp/96-42.pdf> (accessed February 2006).

Johnston, G, 2004, Adult literacy and economic growth: New Zealand Treasury Working Paper 04/24, Wellington, New Zealand: The Treasury.

Developed countries, including New Zealand, used to consider their populations wholly literate, in the sense that almost all adults could read and write. Contemporary definitions expand the concept of literacy to include wider cognitive skills, and extend it across the whole population: people are more or less literate depending on how well they understand and use printed information to solve everyday problems at home and at work. Using this wider definition, the International Adult Literacy Survey [IALS] found that developed countries contain a considerable number of people who have poor literacy skills. This paper looks at whether an increase in the basic literacy skills of adults would have a positive effect on the New Zealand economy. It finds good evidence for the benefits of literacy: studies consistently find that adults with better literacy skills are more likely to be employed, and to earn more, than those with poorer literacy skills, even when taking account of other factors which affect work performance. There is little rigorous evidence, however, for the benefits of adult literacy training and almost no accompanying information on the costs of this training. While there is a good case for an increased focus on adult literacy, and on workplace literacy in particular, these findings suggest a cautious approach to expanding publicly-funded adult literacy programmes. There is a clear need for more and better New Zealand-based research, for piloting innovative literacy programmes and for undertaking good-quality evaluations. A

modest increase in literacy training may not materially affect economic performance. It may, however, be a worthwhile investment, but only good-quality research and evaluation will tell us this. (Published abstract reprinted by permission of the copyright owner). This document may be found on the New Zealand Treasury web site at:
<http://www.treasury.govt.nz/workingpapers/2004/twp04-24.pdf> (accessed February 2006).

Krueger, A, & Rouse, C, 1998, 'The effect of workplace education on earnings, turnover, and job performance', *Journal of Labour Economics* Vol. 16, No. 1, pp. 61-94.

This article examines the impact of a workplace education programme at two companies (one in the manufacturing sector, the other in the service sector). We examine a broad range of outcome variables, including earnings turnover, performance awards, job attendance, and subjective performance measures. We estimate a small, positive impact of the programme on earnings at the manufacturing company but an insignificant impact at the service company. Trainees were equally as likely to exit the company as non-trainees. We also found that the training had a positive association with the incidence of job bids, upgrades, performance awards, and job attendance.

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: CABLEX: New Confidence And Motivation In The Workforce.

Motivation for Training: Brightwater's motivation to apply for and implement WELL-funded training for its staff was a combination of several parallel concerns and aspirations: - The introduction of the quality-driven accreditation process, which was introduced throughout the Aged Care industry, highlighted the need for a high level of communication skills among staff - A change in Federal legislation that introduced the Resident Classification Scale (RCS) which regulates the allocation of funding - The redevelopment of all of Brightwater facilities away from traditional, institution-style buildings to more homelike, supportive environments - The introduction of extensive documentation into the job functions of carers where previously it had been almost paper-free - A significant non-English speaking background section of the workforce - Skills recognition for staff who pre-existed the organisational requirement that carers hold a Certificate III in Community Services (Aged Care/Disability Work). This case study summary may be found on the DEST web site at:
http://www.dest.gov.au/NR/rdonlyres/064A477A-461A-4D58-AE64-19BF65604E14/5151/BW_Cablex.pdf (accessed February, 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: CFMEU: Gains For The Employee – Gains For The Employer.

Motivation for Training: The CFMEU began WELL training eight years ago. Due to the breadth and quantity of CFMEU's WELL - funded programmes over the years, motivations for training have been diverse. There are, however, several recurring and central motivations for embarking on WELL training: - The inherent dangers involved in the construction industry and the need for a requisite level of English language and literacy to support thorough understanding of occupational health and safety (OHS) practices, processes and requirements. Broadening employees horizons, through increased language, literacy and numeracy skills, both in terms of employment and personal goals - Increasing the number of participants to succeed in vocational training through addressing the language, literacy and numeracy needs that can often hinder success - Delivering more substantial and holistic training courses to reach as broad a target group as possible. This case study summary may be found on the DEST web site at: http://www.dest.gov.au/NR/rdonlyres/FE5A5102-ED93-4DF7-A0BB-A07F974BABDC/5152/BW_CFMEU.pdf (accessed February 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: DARLEY Refractories: Small Business – Big Success Motivation for Training:

The motivation to embark on WELL training at Darley was a combination of the following key factors: - To improve efficiency in workplace operations through improved communication skills and understanding of workplace documentation a) to develop computer literacy skills b) to increase productivity as a result of improved efficiency c) to attain certification for completed units of competency from the Manufactured Mineral Products Training Package, c) encouragement from Manufacturing Learning Victoria (MLV), the relevant Industry Training Board, d) financial support from the WELL programme made training in such a small workplace viable. This case study summary may be found on the DEST web site at: http://www.dest.gov.au/NR/rdonlyres/94ED728C-DC50-44AD-A4C1-B4574C8F9870/5154/BW_Darley.pdf (accessed Feb 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: DARTBROOK COAL: Language, Literacy And Communication A Shared Responsibility Across The Enterprise.

Motivation for Training: The decision to embark on WELL training was underpinned by the belief that *“Improving communication equals safety and productivity”* (Glen Thomas, training advisor, Dartbrook Coal). Specific motivators were: - to develop communication and literacy skills to enable the workforce to understand and comply with government safety regulations; to support contractors through the company’s recruitment process by developing requisite literacy skills; the need to develop computer literacy skills to support workers using computers in their jobs; to improve report writing, particularly shift reports; and to provide language, literacy and numeracy support, where required, for workers undertaking the Certificate II in Coal Operations. This case study summary may be found on the DEST web site at: http://www.dest.gov.au/NR/rdonlyres/159F0B7A-FA16-4528-A1B2-0628A70E80D2/5155/BW_Dartbrook.pdf (accessed February 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: DULMISION: Increased Productivity and Quality Conformance.

Motivation for Training: Dulmision has always had a stable workforce with the majority of employees having been with the company for many years. Whilst recognising the skill and knowledge held by workers, the company was aware that in order to increase and promote the market edge held by the company, training would be required. WELL training was the most appropriate solution to needs at both company and individual levels. This case study summary may be found on the DEST web site at: http://www.dest.gov.au/NR/rdonlyres/390EDF55-42A6-4B2A-AC8D-121C785D01CD/5156/BW_Dulmision.pdf (accessed February 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: GOODWILL: Industries Communication Support For Supported Employees.

Motivation For Training: When GWI began its WELL-funded training, management was responding to a number of central motivators: - To ensure employee comfort and acceptance of the introduction of new, often more complex and demanding machinery - To train employees to cope with the new demands of job function expansion from process workers to process controllers - To improve English language and literacy skills in order to develop stronger communicative and analytical skills amongst the supported employees - To equip supervisors with the language, literacy and communication skills to recognise, assess and respond appropriately to the range of employee needs on the workshop floor - A strong sense of duty of care to maintain a safe and pleasant work environment. This case study summary may be found on the DEST web site at: http://www.dest.gov.au/NR/rdonlyres/26FAE5B5-7520-467C-BEDF-2E8C828427E8/5157/BW_Goodwill.pdf (accessed February 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: HUNTER: Corporate Catering Much More Than Regulatory Compliance

Motivation for Training: Hunter Corporate Catering initiated WELL training for its food-handling staff for a variety of reasons. Its primary motivations were: the stringent state and impending national regulations that impose compulsory quality assurance and safe food handling standards and procedures upon workplaces and individual employees; implementing a formalised training regime in order that quality could be assured in delivering to the needs of customers and meeting government obligations; standardisation of processes and procedures, tied in with ISO and hazard and critical control point (HACCP) accreditation; and developing underpinning English language, literacy, numeracy and communication competency to facilitate employees' understanding and application of the above. This case study summary may be found on the DEST web site at:

http://www.dest.gov.au/NR/rdonlyres/34A6DA80-DC04-4C12-8688-DCC3FE50E93B/5158/BW_Hunter.pdf (accessed February 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: QR: Improving Business Performance.

Motivation for Training: QR was initially motivated to take on WELL training when a new competency based work system was introduced for employees in the Infrastructure Services Group. It was recognised that employees would require a number of support services to adjust to changing work practices. WELL - funded training was introduced in response to the need for literacy/numeracy support that would underpin: QR's track workers' acquisition of the mandatory competencies prior to working trackside; completion by track workers of the increased documentation required to ensure safe work and quality outcomes such as workplace safety forms, shunt yard release forms and risk analysis forms; and safe work practices and improved productivity QR recognises that acquisition of vocational competencies is aided and facilitated through basic language, literacy and numeracy skills.

This case study summary may be found on the DEST web site at:

http://www.dest.gov.au/NR/rdonlyres/A07BC923-3641-49F5-A926-5033F3B6619E/5159/BW_QR.pdf (accessed February 2006).

Linda Wyse & Associates, 2001, Workplace English Language and Literacy: TCFUA: Grouping Together to Learn.

Motivation for Training: Even though outworkers work from home with only minimal contact with an employer, the development of English communication skills is a high priority for the outworkers who attend the TCFUA WELL training courses. The TCFUA and outworkers are motivated by similar goals: to improve language, literacy and communication for better work practices and everyday life; to use communication to empower outworkers in their dealings with employers; to increase understanding and observance of occupational health and safety (OHS); and to increase understanding of outworkers' legal rights and obligations. This case study summary may be found on the DEST web site at:

http://www.dest.gov.au/NR/rdonlyres/137ED056-70E5-4AB3-9F81-307FB6DDD723/5160/BW_TCFUA.pdf (accessed February 2006).

Long, E, 1997, *The impact of basic skills programs on Canadian workplaces: Results of a national study for ABC Canada Literacy Foundation, Ontario, Canada: ABC Canada Literacy Foundation*, http://www.nald.ca/fulltext/abc/impbas/english/impbas_e.pdf

Canadian promoters of workplace basic skills programmes are commonly asked for evidence about the impact of programmes on the workplace. Even with mounting information on the need for a more literate workforce, programme promotion has become more difficult.

Companies are increasingly focused on bottom-line considerations: "What," they ask, "is the payback for us?" Though there is a substantial body of literature about workplace literacy, virtually none is Canadian, and very little is in a form that would be useful for promoting

programmes to sceptical workplaces. ABC CANADA hopes that the current study will provide information for effective, peer-based promotional strategies that will be useful in a broad range of contexts. This report is based on the results of telephone interviews with 86 individuals from 53 workplaces across Canada. The study includes a diverse range of workplace types and sizes from both large and small communities. Every attempt was made to interview an employer and an employee representative from each workplace. Ninety-three percent of the eligible workplaces contacted were able to participate. Respondents were asked to describe the motivations of their workplaces for starting basic skills programmes; the ways in which their workplaces organize the programmes; and the impact of the programmes on their workplaces. Based on this study of 53 workplaces, it can be stated without reservation, that basic skills programmes are having a dramatically positive impact on workplaces in Canada. Regardless of their position - whether company owners, human resources people, labour representatives, or participants themselves - the word is the same: workplace basic skills programmes work. Representatives from all levels, and from all types of workplaces concur that basic skills education influences not only soft, "warm fuzzy" factors such as confidence levels, but also hard, bottom-line factors as well.

Manufacturing Learning Victoria, 2003, *WELL Workplace English Language and Literacy. Effective communication in the manufacturing industry: case studies (Kit of 10 brochures)*

Manufacturing Learning Victoria has created this handy kit detailing case studies of WELL programmes in industries in the manufacturing sector in Victoria. The kit comes with an introductory section on the need for WELL programmes and how to "get into" WELL training. Nine case studies follow from a range of industries. The case studies explain why the training was needed, who the training was aimed at, what competencies from particular training packages were targeted, when the training was done, how it was done and lastly, what the outcomes were. These brochures are available from: Supplier Manufacturing Learning Victoria, 1378A Toorak Road, PO Box 400, Burwood Vic 3125, Ph: 9889 0233, Fax: 9809 4733, Email: help@mlvic.com www.mlvic.com ARIS for loan.

Mawer, G, 1994, *Language, literacy and numeracy at Merck Sharp and Dohme (Australia) Pty Ltd: evaluation report of an integrated approach. Blacktown, NSW: Foundation Studies Training Division, Western Sydney Institute of TAFE, 20 p.*

This report is an independent evaluation of a WELL-funded workplace education programme in the pharmaceuticals manufacturing company, MSD, in Western Sydney. The programme's objectives were to: contribute to the planning of training at MSD with respect to language, literacy and numeracy, communication and cross-cultural issues; contribute to delivery of training at MSD with respect to language, literacy and numeracy, communication and cross-cultural issues; contribute to MSD workplace culture and communication strategies; liaise with industry and other practitioners to promote and disseminate information from the project.

McGuirk, J, Boothroyd, L, Hight, K, 2001, *Key elements in successful training: a comparative study of two workplaces. Sydney, Australia: NSW Adult Literacy and Numeracy Australian Research Consortium. (ALNARC), 38 p.*

This report presents outcomes from research conducted by the NSW Centre of the Adult Literacy and Numeracy Australian Research Consortium (ALNARC) during 2000 into the factors considered important to the successful implementation of training packages. The project considered the history of previous training programmes, e.g. Workplace English Language and Literacy (WELL) funded programmes, the transition to training packages, the models of training used, and the costs involved. Two case study sites were examined to test the hypothesis that workplaces with a history of WELL funding were more likely to experience successful outcomes in the implementation of training packages than workplaces without such a history. In the first case study, 'Partnership, flexibility and experience: key elements in successful training', Jenny McGuirk investigates a workplace with an extended

history of training, particularly the WELL programme. The findings suggest that successful workplace training and the effective implementation of training packages require quality partnerships between the registered training organisation and the workplace. Successful integration of literacy and numeracy into workplace training and training packages requires qualified trainers with experience in literacy and numeracy training. The second case study, 'Issues arising in first time delivery of a WELL training program' by Loo Boothroyd and Kristine Hight identified a number of concerns including communication difficulties, language and literacy teachers' knowledge of training packages, establishing relationships between teachers and workers, advocacy for the training programme in the workplace, and obvious, quantifiable training outcomes for management. A comparison of the factors contributing to successful training outcomes in the two case studies emphasises the positive relationship between long term use of WELL programmes and later successful implementation of training packages. A key factor in success appears to be long term investment in training.

McKenna, R, Cumming, J, Fitzpatrick, L, McKenna, A, Haughton, H, 1997, *More than a reporting system: Report of the project to pilot the National Reporting System*, Melbourne: DETYA.

The National Reporting System (NRS) is intended to 'provide a national common language to act as a reference point for providers, facilitate student pathways, and contribute to national information systems for accountability and planning purposes'. It is also seen as having a role in 'incorporating language, literacy and numeracy into vocational curriculum and industry standards'. This project, commissioned by the Australian National Training Authority (ANTA), explores issues relating to the uses of the NRS. The project was undertaken in three phases: phase one - pilot questionnaire; phase two - pilot interviews; phase three - end user interviews. The findings suggest that the NRS provides a valid framework for reporting adult language, literacy and numeracy outcomes across a range of sectors, contexts and learners. This project report outlines the policy context, the project methodology, and the findings. It also includes recommendations relating to the uses of the NRS and its resources.

Millar, P, 2001, *Concepts of literacy: the role of WELL*. University of Tasmania. Faculty of Education. Centre for Research and Learning in Regional Australia. (CRLRA), Adult Literacy and Numeracy Australian Research Consortium (ALNARC), Melbourne: Language Australia, vii, 42 p.

This project was undertaken in Tasmania by the Adult Literacy and Numeracy Australian Research Consortium (ALNARC) to investigate the WELL (Workplace English Language and Literacy) programme in its provision of literacy and numeracy in training. The project investigates the role of the WELL Programme, administered by the Commonwealth Department of Education, Training and Youth Affairs (DETYA), in supporting provision for literacy and numeracy in training packages. The study involves investigating underlying assumptions about resources and delivery and the extent to which Industry Training Advisory Bodies (ITABs) and Registered Training Organisations (RTOs) are reliant on WELL funding to address literacy and numeracy needs. The findings of the investigation contribute to the development of a framework for ongoing evaluation of the role of the WELL Programme and of literacy and numeracy components in national training packages. The findings also add to an understanding of the communications aspects of working life, of the work itself, and communications needs of individuals and groups of workers. This document may be found on the Centre for Research and Learning in Regional Australia web site at: <http://www.crlra.utas.edu.au/files/discussion/reports/PR00-14.pdf> (accessed February 2006).

Millar, P, & Falk, I, 2003, 'Addressing the literacy and numeracy needs of workers through training packages: a case study in delivery', in *Making a world of difference?: Innovation, internationalisation, new technologies and VET: Proceedings of the 5th annual conference of the Australian VET Research Association (AVETRA) 2002*, ed. F. Ferrier and C. Down, Australia: AVETRA.

In the new Australian economy, it is widely recognised that literacy and numeracy are vital underpinning skills for effective and efficient training. Workers wanting to improve their skills and qualifications may require literacy and numeracy support, and this applies not just to basic skills but also to complex tasks with their associated embedded complex literacy and numeracy skills. This paper presents a study of delivery of integrated literacy and numeracy in a training package. The paper considers the question: To what extent is the delivery of integrated literacy and numeracy in training packages addressing the literacy and numeracy needs of workers? Three further research questions were developed for the project: (1) What might be a holistic structure and process for good practice in delivery of integrated literacy and numeracy in training packages? (2) How are 'literacy and numeracy' understood in the design and implementation of the Workplace Learning Services (WLS) model? (3) To what extent does this model address the multiliteracy practices needs of trainees in the workplace? The project adopted a case study approach, employing qualitative analytic procedures. The study found that training packages specify outcomes in terms of endorsed competencies and standards, they do not specify educational methods or the multiple ways the goals may be reached. The impact of integrated literacy and numeracy in training packages is determined in large part by the ways educators use them. This document may be found on the AVETRA web site at: http://www.aveutra.org.au/abstracts_and_papers_2002/millar-falk.pdf (accessed February 2006).

O'Neill, S, & Gish, A, 2001, *Apprentices' and trainees' English language and literacy skills in workplace learning and performance*. Adelaide: NCVER.

The authors suggest that because of changes in the workplace in terms of use of computers, technology and media, along with changes in the nature of work, today's apprentices and trainees may be facing new challenges in terms of English language and literacy (ELL) skills in the workplace. This research project set out to investigate the way employers and their apprentices and trainees perceive the way these employees' ELL skills impact on their learning and performance in the workplace in the current context of New Apprenticeships. The research was conducted in three main stages: literature review; consultation and survey development; and survey administration and site visits. The data is presented and analysed and findings and recommendations are given. Areas for improvement and further research are identified. Descriptors: Apprentice; Apprenticeship; Trainee; Traineeship; English; Language; Literacy; Vocational education; Workplace learning; Technological change; Skill development; Occupational change; Computer literacy; Educational policy; Training policy; Case study; Literature survey; Work performance; New Apprenticeships. This report may be found on the NCVER web site at: <http://www.ncver.edu.au/research/proj/nr9017.pdf> (accessed February 2006).

Payne, J, 2002, *Basic skills in the workplace: A research review*, London, UK: Learning and Skills Development Agency.

This report identifies recent English-language research on basic skills in the workplace. It attempts to record and analyse what has been written about the subject and to provide an overview of the field. It seeks to provide information that will: inform policy regarding the expansion of workplace basic skills as part of the government's basic skills strategy, and practice by established and new providers.

Pearson, G, Bean, R, Duffy, J, Manidis, M, Wolkenberg, T, & Wyse, L, 1996, *More than money can say: The impact of ESL and literacy training in the Australian workplace*. Canberra, Australia: Department of Education, Employment, Training and Youth Affairs, 2 v.

This 1995-1996 research project makes a quantitative assessment of the impact of language and literacy training on the workplace. Since 1990 there has been awareness that one in ten Australians have some form of literacy difficulty. It is also clear that workers must continuously upgrade their language and literacy skills to keep pace with the requirements of their workplace. Most training evaluation has focused on results achieved within the training room. Workplace outcomes have been assessed anecdotally or qualitatively. Representatives of all stakeholder groups in thirteen industries across five states participated in this research project. The researchers developed instruments to measure outcomes in key areas identified by the interviewees. They were: direct cost savings; access to and acceptability of further training; participation in teams and meetings; promotion and job flexibility; and the value of training.

Perkins, K, 2005, *Reframe, rename, revitalise: Future directions for the language, literacy and numeracy National Reporting System*, 59 p., Adelaide: NCVER.

The National Reporting System (NRS) was developed to report the outcomes of English language, literacy and numeracy provision in Australia's vocational education and training and adult and community education sectors, and in labour market programmes. Since its introduction, however, the NRS has been used as more than a reporting tool. It has also been used for setting standards and for curricular and assessment purposes. This publication, based on a literature review and interviews, examines the strengths and weaknesses of the NRS and identifies options for more in-depth exploration and development in a full review of the NRS. This scoping study finds that there is considerable support for the NRS, but that it needs to be updated. The key messages to emerge from the study are that: the NRS for adult English language, literacy and numeracy has influenced the content and emphasis of literacy and numeracy curricula nationally, and played a role in the literacy and numeracy aspects of training packages; those interviewed for this study all agreed it was time for the NRS to be reviewed; and it was felt that a review would provide an opportunity to streamline the conceptual framework, develop a set of user-friendly support materials, revise the rules for reporting within Commonwealth programmes, consider how best to provide adequate and ongoing professional development, with an opportunity to build national ownership of outcomes, and further explore ideas for broader applications. This report and supporting documentation may be found on the NCVER web site at: <http://www.ncver.edu.au/publications/1579.html> (accessed February 2006).

Shore, S, 2003, *Adult literacy and numeracy : A stocktake of adult literacy in South Australia : Selected aspects*, (South Australian Skills for the Future Inquiry: Working Paper 7), Adelaide, South Australia: Centre for Studies in Literacy Policy and Learning Cultures, University of South Australia.

Employers are increasingly identifying language, literacy and numeracy skills amongst the employability skills they seek in the workforce. A high skill / high wage economy is predicated on a high level of these basic skills in addition to technical and other employability skills and personal attributes. Anecdotally it is reported that low literacy, numeracy and self-esteem are barriers to successful employment for some South Australians, and particularly in the Southern and Northern metropolitan areas of Adelaide. The development of high-level technical skills is also predicated on relatively high levels of general education and literacy and numeracy. The Skills Inquiry is taking an evidence based approach to the development of strategies to address the literacy and numeracy skills issues identified through its early consultation with key informants. The purpose of this working paper is to provide a statistical and research basis from which to consider possible strategies to improve literacy and numeracy skills levels in South Australia. The paper elaborates on selected aspects of data

from the International Adult Literacy Survey (IALS), setting this against a backdrop of other data relevant to the issue of adult literacy skills in South Australia. The author briefly explores some issues associated with literacy and training and the juxtapositioning of literacy provision in the community sector. The paper closes with the suggestion that the data available from this varied research base points overwhelmingly to the need for a matrix approach to integrating literacy into education, training and citizenship. This document can be found on the SA Skills Inquiry website at:

http://www.saskillsinquiry.sa.gov.au/files/links/Adult_Literacy_Numeracy.doc (accessed February 2006).

Sticht, T G, 1999, *Testing and accountability in adult literacy education: Focus on workplace literacy resources for program design, assessment, testing, & evaluation, Canada: Applied Behavioral & Cognitive Sciences Inc,*
<http://www.nald.ca/fulltext/sticht/testing/testing.pdf> (accessed February 2006).

This report provides information on the design and evaluation of workplace literacy programmes to improve workforce readiness, and an overview of concepts about the nature, uses and abuses of standardized tests in programme evaluation and accountability. This is not a "how to do it" guidebook. Rather, it discusses concepts and issues and provides bibliographic resources for those readers who want to learn more about how to design, develop, and evaluate literacy programmes in the workplace and other contexts.

Tomoana, J, & Heinrich, J, 2004, *Demand-side factors in adult foundation learning programmes: A review of international literature (43p).* Completed for the Department of Labour June 2004, Te Haeata Education and Training, Wellington, New Zealand.

This paper reviews international literature that has examined the demand-side barriers to the provision and take-up of adult foundation learning programmes. It focuses on factors that affect the facilitation and provision by employers of such programmes as well as the demand amongst adult learners for foundation-level learning, together with government policies and initiatives designed to address these factors. This document is available at:
<http://www.dol.govt.nz/PDFs/AdultFoundationLearning.pdf> (accessed February 2006).

Torgerson, C, Brooks, G, Porthouse, J, Burton, M, Robinson, A, Wright, K, & Watt, I, 2004, *Adult literacy and numeracy interventions and outcomes: a review of controlled trials – Research review,* London: National Research and Development Centre for Adult Literacy and Numeracy.

The reviews contained in this report are linked reviews undertaken by the National Research and Development Centre for Adult Literacy and Numeracy. They comprised: an expert review (consisted of a review of the research by Brooks et al. and updates from more recent research reviews, including from the systematic reviews in this study); a scoping review (Systematic review methods were used throughout, in order to limit bias. Studies were systematically searched for and located. They were then screened for inclusion in the scoping review using pre-established inclusion and exclusion criteria.
www.nrdc.org.uk/uploads/documents/doc_2850.pdf (accessed February 2006).

Tuijnman, A C, Kirsh, I S, & Wagner, D A, 1997, *Adult basic skills: Innovations in measurement and policy analysis,* Cresskill, N.J.: Hampton Press, xxiv, 360 p.

(Literacy: research, policy and practice) Most of the chapters of this book were originally presented at a roundtable held at the University of Pennsylvania in January 1994, which was jointly organised by the National Center on Adult Literacy (NCAL) and the Center for Educational Research and Innovation (CERI) of the Organisation for Economic Co-operation and Development (OECD). This book is an attempt to measure adult literacy so that the information can be used to direct and evaluate policy. The new assessment methodology is described, reviewed and criticised and the policy implications are identified. The book

comprises the following chapters: 1. Adult basic skills: policy issues and a research agenda / David Stern and Albert Tuijnman; 2. The contribution of literacy to the wealth of individuals and nations / Sue E. Berryman; 3. Self-assessed skill needs and job performance / Peter Cappelli and Nikolai Rogovsky; 4. Adult literacy assessment in comparative contexts / Daniel A. Wagner; 5. Abilities and competencies in adulthood: lifespan perspectives on workplace skills / Jacqui Smith and Michael Marsiske; 6. Measuring adult basic skills: a literature review / Stan Jones; 7. European traditions in literacy research and measurement / Max van der Kamp; 8. Proxy measurement of adult basic skills: lessons from Canada / T. Scott Murray; 9. Using large-scale assessment results to identify and evaluate generalizable indicators of literacy / Irwin S. Kirsch and Ann Jungeblut; 10. The role of incentives in literacy survey research / Leyla Mohadjer, Martha Berlin, Sue Rieger, Joseph Waksberg, Don Rock, Kentaro Yamamoto, Irwin S. Kirsch and Andrew Kolstad; 11. Information trade-offs in large-scale assessments / Andrew Kolstad; 12. Using large-scale assessments to set educational policy: an agenda-analytic approach / Peter Mosenthal; 13. Literacy assessment in the service of literacy policy / Richard L. Venezky.

Wakefield, L & Pearson, G, 1997, *Report on the trial of the new WELL program reporting mechanism*, Geelong, Victoria: Gordon Institute of TAFE, 120 p.

In mid-1996 the Workplace English Language and Literacy (WELL) Programme began a process to develop a new reporting mechanism which would provide greater accountability. Performance indicators were required to generate the data and information which could be used to account for the funding distributed to workplaces under the WELL Programme and to provide feedback on the benefits that the expense of these funds had engendered. Five key performance indicators were identified and the applicability of using the National Reporting System (NRS) was considered. A draft reporting mechanism using both the NRS and the key performance indicators was developed and from February to May 1997 a trial of this draft reporting mechanism was conducted. This report presents the findings of that trial in which more than 50 workplace and training provider respondents across 6 States in 20 workplaces representing 11 industries have taken part.

Wallace, S, & Murray, J, 1997, *Workplace language and literacy in action: Case studies one*, Melbourne, Australia: Australian National Training Authority.

Workplace Language and Literacy (WL&L) in Action was a national staff development initiative auspiced through the, now defunct, National Staff Development Committee. WL&L in Action was motivated by the need to assist the implementation of integrated English language and literacy programmes within the National Vocational Education and Training system. It responded to the need to increase the English language, literacy and numeracy skills of workers within Vocational Education and Training programmes. WL&L in Action sponsored 25 action learning groups in the period 1995-1997 and has developed from these projects this series of case studies. The case studies in this publication describe a range of projects throughout Australia and provide examples of good practice in addressing workplace language and literacy issues. They include: 'That blessed CBW!' prepared by Frankie Forsyth; 'Our customers are not willing ones!' - Clare O'Kelly; 'Communication at Bridgestone' - Caroline Dillon; 'Job rotation and multiskilling at Cadbury Schweppes' - Tom Nehrmann; 'Workplace communication at Glenray' - Josephine Murray, Doreen Conroy and Janelle Kemp; 'Patient care at Royal Perth Hospital' - Steve Dean; 'Learning is forward thinking' - Sharon Wiles and Josephine Murray; 'Laundry language' - Jack Cunningham and Josephine Murray.

Wickert, R & McGuirk, J, 2005, *Integrating literacies: using partnerships to build literacy capabilities in communities*, 48 p., Adelaide: NCVER.

It has long been accepted that adult literacy is best taught and learned in authentic contexts using materials which relate to real-life needs. An important implication of this 'situated learning' is that opportunities for learning are everywhere, not just in colleges or designated

learning centres. This understanding was crucial to the development of early workplace learning programmes, and underpins Australia's significant success in integrating literacy and numeracy with wider vocational skills development. The purpose of this study was to undertake an initial exploration of the potential for extending opportunities for integrated or embedded adult literacy learning beyond the education and training sector. The methodology included an analysis of related social policy and adult literacy literature and websites, an exploration of community projects that seemed to have taken up this potential and an analysis of characteristics deemed to contribute to successful workplace integrated literacy initiatives. The study was intended to act as a preliminary investigation of these issues by exploring: (1) how literacy approaches are being, or might be achieved in cross-portfolio relationships with agencies for whom education and training is not core business; and (2) how approaches to building literacy skills might be further developed through partnerships and joined-up or whole-of-government approaches. The study seeks to identify examples of successful integration of literacy learning in community and workplace settings. The methodology combined research of the literature and the internet with interviews of coordinators in cross-sectoral community projects and successful integrated workplace literacy projects. This was complemented by a think tank assisted by the Australian Council for Adult Literacy (ACAL), and overseas information on the subject. The review of workplace literacy programmes confirmed the success of initiatives in Australia in integrating literacy, numeracy and vocational skills acquisition through 'built-in' rather than 'bolted-on' methodologies. Some findings are drawn from a comprehensive analysis and critique of recent relevant literature, backed up by an analysis of data from a range of programmes and practices outside and beyond traditional literacy programmes offered in institutional settings. Also confirmed is the importance of valuing and embedding a range of literacies into workplace and community practice, rather than teaching literacy in 'programmes' in isolation from other learning. This report and supporting documentation may be found on the NCVET web site at: <http://www.ncver.edu.au/publications/1607.html> (accessed December 2005).

Workbase National Centre for Workplace Literacy & Language, 2002, *Voices from Management*, 30 p., Auckland, New Zealand: The National Centre for Workplace Literacy & Language.

Four New Zealand businesses are showing positive returns on their investment in workplace training programmes. The businesses, which have placed emphasis on literacy programmes, include three manufacturers - Rotaform Plastics, Jenkin Timber and Formway Furniture - and Sanford, the fishing company. The results of the workplace training programmes are described in this new case study publication. This document may be found on the Workbase web site at: <http://www.workbase.org.nz/Document> (accessed February 2006).

Other literature of relevance

Bloom, M R, & Campbell, A, 2002, *Success by design, Canada: The Conference Board of Canada.*

This study looks at successful practices in joint labor/management workplace education programmes in the United States. The report highlights the benefits of these collaborative training programmes and explains how and why they are successful. The report can be accessed at:

<http://www.conferenceboard.ca/boardwiseii/temp/BoardWise2NKAMJFKAHGLMFELNCGLIAFAP200632194959/380-02Rpt.pdf> .

Brisbois, R, & Saunders, R, 2005, *Skills Upgrading Initiatives in Canada: Regional Case Studies, Preliminary Report.* Ottawa: Canadian Policy Research Networks (CPRN).

Preliminary report prepared by Canadian Policy Research Networks Inc for the OECD as part of the Study on Skills Upgrading for the Low-qualified led by the LEED Directing Committee of the OECD. This document may be found on the CPRN website at:

<http://www.cprn.org/en/doc.cfm?doc=1163> (accessed March 2006).

Coulombe, S, Tremblay, J, & Marchand, S 2004, *Literacy scores, human capital and growth across fourteen OECD countries,* Ottawa: Statistics Canada.

The central result of this paper is that direct measures of human capital based on literacy scores outperform measures based on years of schooling in growth regressions. The results indicate that, overall, human capital indicators based on literacy scores have a positive and significant effect on the transitory growth path, and on the long-run levels of the GDP per capita and labour productivity.

Castleton, G, 2002, 'Where to from here?—adult literacy beyond 2002', *Literacy Link*, vol. 22, no.5pp.1-2.

In this article, the ACAL president, Geraldine Castleton, describes some of the gains made for adult literacy over the past decade and suggests ways to move forward to ensure that adult literacy is on the Government's agenda.

<http://www.acal.edu.au/publications/newsletters/LL2002/LL.OCT2002.pdf>

Comings, J; Sum, A; Uvin, J, 2000, *New Skills for a new economy: Adult education's key role in sustaining economic growth and expanding opportunity,* Boston, Massachusetts: The Massachusetts Institute for a New Commonwealth.

Investigation into the state of Massachusetts' basic skills deficits and role of adult basic education using comprehensive quantitative analysis of student outcomes. This document may be found on the Massachusetts Institute website at:

http://www.massinc.org/index.php?id=247&pub_id=1308 (accessed March 2006).

Del Grosso, C, 2000, 'A whole industry approach to training: WELL and the transport and distribution industry', *Literacy Link*, June 2000.

An article that describes how enterprises, RTOs, ITABs and others within the Transport and Distribution Industry are embracing the recognition of skills, qualifications and structure for training provided by the Training Package.

Department of Education Science and Training, unpublished paper, *The language, literacy and numeracy programme,* Canberra: Department of Education, Science and Training.

A paper that describes the international and Australian context of adult literacy provision.

Department of Education, Training and Youth Affairs (DETYA), 2001, WELL Bright water care group: Training across the board for outcomes across the board, Canberra: DETYA

Describes the implementation of WELL project within Brightwater Care Group, a not for profit organisation that cares for the aged and people with disabilities. The focus is on the motivation for undertaking WELL training, the challenges (and solutions) in terms of implementing an effective WELL project and the outcomes of the WELL project.

Fitzpatrick L, 2000, 'The workplace communication project', *Literacy Link*, vol.19, no.1, pp.14-15.

The background, key aspects, outcomes and implementation of the Workplace Communication project which focussed on integrating language, literacy and numeracy into industry standards.

Fitzsimons, G, & Mlcek, S, 2005, *Learning numeracy on the job: a case study of chemical handling and spraying*. Adelaide: NCVER.

This research investigates the job-related numeracy requirements in the chemical spraying and handling operations of the horticulture, local government, outdoor recreation and warehousing industries. Findings from this study indicate that the worksite influences both the type of numeracy skills needed as well as how they are deployed. Numeracy in the workplace differs from formal, rule-based abstract mathematics taught in school and requires training that is relevant to the specific applications of the skill. Implications for the future practice of teaching numeracy on the job are offered and highlight the need to consciously develop critical thinking, learning-to-learn, planning and problem-solving skills in workers. See also the Campaign for Learning's scoping study on workplace numeracy, March 2005 <http://www.campaign-for-learning.org.uk/pdf/Projectreports/FinalNumeracyScopingStudyReportMarch2005.pdf>

Foster, S, & Beddie, F, 2005, *Adult literacy and numeracy: At a glance*, Adelaide: NCVER.

This publication explores adult literacy and numeracy. In particular, it draws on major insights from research conducted during 2003 and 2004 for the Adult Literacy National Project funded by the Australian Government through the Department of Education, Science and Training.

Gardner, S, 2001, *Adult literacy in the 21st Century: How programmes relate to policies in Adults Learning*, Vol 12, No 10, pp. 21-26.

Brief comparison between public policy approaches to development of literacy in Australia, USA, UK.

Gleeson, L, 2005, *Economic returns to education and training for adults with low numeracy skills*, Adelaide: NCVER.

The first analysis examines the returns to education using the Longitudinal Survey of Australian Youth. The second analysis examines the returns to training using the National Longitudinal Survey of Youth 1979 (United States data).

Jarboe, K P, 2000, *Community Workforce Partnerships*, Policy Report, September 28. Washington: Progressive Policy Institute,

Community Workforce Partnerships (CWPs) would catalyze a holistic approach to a community's employment needs; giving workers access to training, education, and other critical support services; and helping the firms where they work modernize to meet the demands of the New Economy. This document can be found at: http://www.ppionline.org/ppi_ci.cfm?knlgAreaID=107&subsecID=175&contentID=2319 (accessed March 2006).

Keating, V, 2002, 'Integrating WELL with vocational training in the transport industry', *Literacy Link*, vol. 22, no.5, pp.1-2.

In this article, the author describes how Training Packages, skills recognition and literacy/numeracy are powerful tools in the development of a workplace training culture at a large transport company in Western Australia.

<http://www.acal.edu.au/publications/newsletters/LL2002/LL.OCT2002.pdf>

Kull, S, 2000, 'Promote Trade and Help Workers Adapt', *Blueprint: Ideas for a New Century*, Vol 7, Summer 2000, Washington, United States: Democratic Leadership Council Washington.

Kull S, 2000, *Americans on Globalization: A Study of US Public Attitudes*, Washington, DC: Program on International Policy attitudes.

Misko, J, unpublished, *Improving training and assessment for adults with low basic skills through formative assessment*, Adelaide: NCVET.

This report provides a snapshot of how Australia goes about addressing the training and assessment needs of adults with low basic skills. Key challenges for adult basic education are identified, national and state and territory government language, literacy and numeracy initiatives (including government-funded training programs and projects) are reported on, and an account of the nature of vocational and community-based training provision, and assessment policies and processes is provided. Formative assessment and innovative teaching practices, and materials and resources designed to provide assessment guidance are identified.

Rahmani, Z, Crosier, T & Pollack, S, 2002, *Evaluating the impact of the literacy and numeracy training programme for job seekers*, Canberra, Australia: Research, Analysis and Evaluation Group, Department of Education, Science and Training.

The overall aim of the LANT evaluation was to estimate the extent to which training improves clients' literacy and numeracy skills and participation in the labour market as compared to those who were eligible for training but did not participate. The evaluation examined the outcomes of the programme in terms of: the extent of eligible job seekers' participation in LANT and their attrition rate; improvement in literacy and numeracy competencies; employment outcomes; income support status; and subsequent education/training participation. These findings indicate the need for making a cautious assessment of LANT's effectiveness in building literacy and numeracy skills. There was some evidence from the survey data that LANT had made improvements to the lives of participants. For example, the majority of survey respondents who participated in LANT perceived that the training had helped them to improve their reading, writing and maths skills. There was also evidence from the survey that clients who perceived an improvement in their literacy and numeracy skills were more likely to gain employment. However, the extent to which clients' actual skill improvement was related to their employment outcomes could not be ascertained as only a small proportion of clients underwent final skill assessment. The variation in clients' levels of literacy and numeracy, attitudes towards training and capacities to learn, suggests the need for a more flexible approach to programme delivery to approximate clients' needs more closely. The present length of training – up to 12 months – could be a deterrent to some clients, especially those in younger age groups, and might contribute to the high attrition rate. Improving deficient literacy and numeracy skills might require the individual to undertake a concerted effort over a considerable period of time. There is evidence from studies in the U.S. that the effects of basic education and training increase over time, with better

employment rates and increased earnings for those who receive training compared to those who do not. A long-term focus is suggested in order to examine the true impact of the LANT programme on participants' employment prospects. This document is available from the DEST website <http://www.dest.gov.au/ty/publications/lant%20web.pdf> (accessed February 2006).

Smith, R, & Sushames, L, 2000, *The development of an industry specific workbook for the Workplace English Language and Literacy (WELL) Programme*, in 'Lens on literacy : an international conference for the Australian Council for Adult Literacy'. Perth, Western Australia : Australian Council for Adult Literacy, 2000 4 p.

Abstract: Workbook 3 is one in a series of four workbooks in the WELL Programme, developed for the introduction of specific English language, literacy and numeracy skills required for the successful completion of the Coxswain's Certificate. This paper introduces some background into why such a resource was needed in the maritime industry, and outlines the trialling of the workbook as well as ongoing development. It concludes that the workbooks have successfully met industry demand by bridging the gap in competencies and thus enabling fishermen, who were previously disadvantaged, to successfully complete their training. This document may be found at: <http://pandora.nla.gov.au/nph-arch/2000/Z2000-Dec-21/http://cleo.murdoch.edu.au/confs/acal/procs/smith.html> (accessed, February 2006).

Statistics Canada & OECD, 2005, *Learning a living: First results of the adult literacy and life skills survey*, Ottawa and Paris: Statistics Canada and OECD.

The first report from the Adult Literacy and Life Skills Survey (ALL), presents new evidence on the nature and magnitude of the literacy gaps faced by Organisation for Economic Cooperation and Development (OECD) countries and how these gaps have evolved over the past decade.

Taylor, M, 2000, *Partners in the transfer of learning: A qualitative study of workplace literacy programs*, Adult Education Research Conference, 41st, 2000, Vancouver, Canada.

This study investigated the common types of transfer strategies used by the key stakeholders in 11 Canadian workplace education programmes. Results indicated that the Role Time Model was a useful classification system: to understand the dimensions of a transfer partnership; to document the transfer of learning strategies and to identify the barriers influencing the transfer of learning. A copy of this conference paper may be found on the Vancouver, BC: University of British Columbia, Department of Educational Studies conference website at: <http://www.edst.edu.ubc.ca/aerc/2000/ab2000.htm>

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Project design for an economic evaluation of the WELL program

This note outlines the main issues to be considered in formulating a project design for an economic evaluation of the WELL program. It begins by examining the general principles of what constitutes a sound economic evaluation, and then applying these to determine a project specification.

Evaluation

There are different kinds of evaluations. Two broad kinds can be distinguished. The first, sometimes referred to as 'process evaluation' involves an examination of the administration of a program. It attempts to answer questions such as:

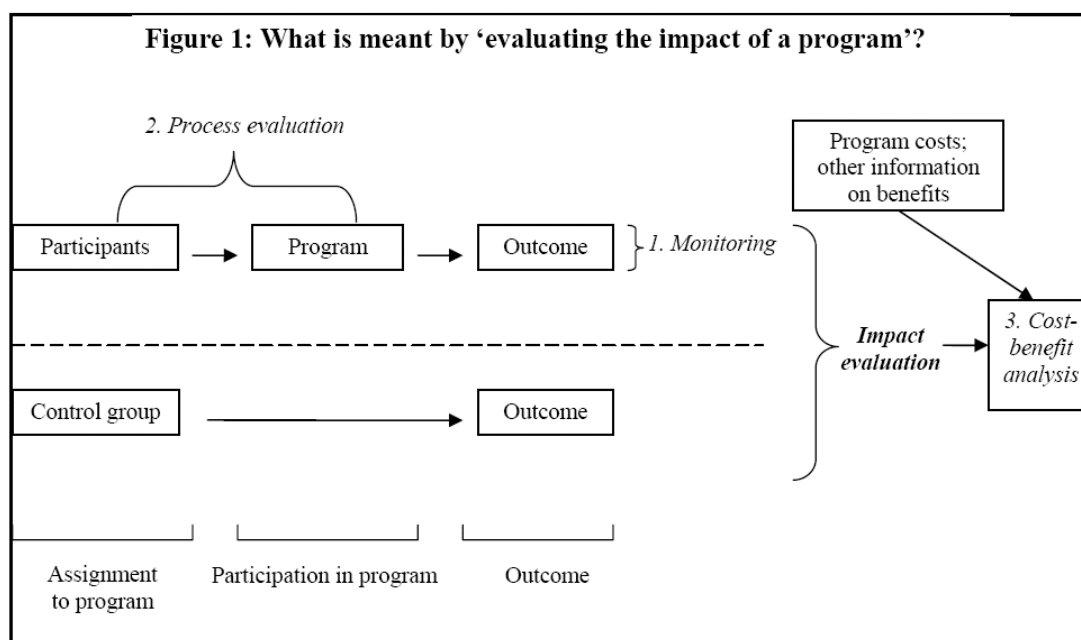
- was the program implemented as planned?
- were the criteria for selecting program participants or awarding funds well-defined and properly administered?
- what was the take-up of the program, and did it meet its target for participant numbers including that for sub-groups?
- what was the attrition rate of the program?
- were program funds properly allocated and accounted for?

These are all important questions to be asked in relation to program evaluation, but they are not an evaluation of the *consequences* of a program, which is the second type of evaluation. This is an exercise which sets out to measure a program's *impact*. It is important to recognise that impact is not the same as outcome. Outcomes can be monitored over time, but on their own they do not enable a judgement to be made about whether the program is meeting its objectives. For example, from the WELL program we might be interested in the level of earnings of those being trained and the effect that training has on firm productivity. The first of these is an outcome measure, the second is an impact measure.

The remainder of this note focuses on this second type of evaluation. Before going on to examine that in some detail one other general point needs to be made. An evaluation of the impact of a program is not the same as a cost-benefit analysis. The findings would obviously feed into a cost-benefit analysis, but of its own an evaluation of the impact of a program involves no consideration of the program costs. It is simply about measuring how a program alters the behaviour of participants and non-participants and leads to measurable change.

Related to this, for most evaluations there is a trade-off between the robustness of an evaluation and the generality of its findings. The more tightly defined the evaluation question, the more precise will be the estimate of the impact, but that comes at the price of whether these estimates would hold at different points in time or in different locations. As Ryan (2003: 148) puts it, "an evaluation study, however definitive, lays only a single brick in the evaluation wall."

A useful schema, developed by Borland, Tseng and Wilkins (2005), which shows the distinction between monitoring, process evaluation, cost-benefit analysis and impact evaluations is shown below.



Source: Borland, Tseng and Wilkins (2005)

The basic evaluation problem

The basic evaluation problem is that the impact of a program can never be directly observed. Programs have an impact on participants, and also on non-participants. The latter can be subdivided into those who were eligible to be a program participant but nonetheless did not enter the program, and those who were not eligible.

For participants we may know something of them and their circumstances prior to participation, and post-participation. What we do not observe, however, is the counter-factual, i.e. what their circumstances would have been had they *not* participated in the program. One way of inferring what the counter-factual might have been is to examine the circumstances of non-participants, who in this sense form a “control group”. The difference between the circumstances of participants and non-participants is a measure of the impact of a program.

However, as many economists have pointed out, there remains a fundamental problem with this approach. The differences observed between participants and non-participants may be due to selection into the program and have nothing at all to do with taking part in the program itself. For example, the administrators of a labour market program may (especially if the payments are based on performance) choose those people who are the most likely to succeed in getting a job following the program. This is a practice known as “cream skimming” (Cobb-Clark and Crossley 2003), and would clearly give a distorted view of the true impact of a program.

It is possible to take account of this “selection bias” so long as the information that was used to decide who would and would not participate in the program from the eligible pool is known, and the data on these characteristics is captured for both participants and the control group. The salient information on the characteristics of participants is almost never fully known or captured, and economists have shown that these “unobservable”, once statistically taken into account, can significantly alter the findings of an impact evaluation (Heckman, Lalonde and Smith 1999).

To overcome all of these problems, economists attempt to design evaluations which replicate as far as possible the method of scientific experiments, and are hence known as quasi-experimental methods. A good example is trying to measure the effect of education on earnings while

adequately taking into account the separate effect of natural ability on earnings. The quasi-experimental approach here has been to conduct studies on sets of twins. Pure experiments are normally eschewed. Besides the fact that pure experiments can be costly to devise and difficult to administer to the standard of purity required, there is a fundamental moral problem that an eligible person is denied access to a program that may be to their benefit on a random basis (i.e. so as to create a proper control group).

Evaluating the WELL program

It should be clear from the foregoing discussion that evaluation studies need to be very carefully designed and conducted if they are to yield true (or “unbiased”) estimates of the impact of a program.

That also makes it a costly endeavour. In the United Kingdom, Her Majesty’s Treasury produces a guide for civil servants on appraisal and evaluation, known colloquially as “The Green Book”. It states that all programs “should be subject to comprehensive but proportionate assessment” (2003: 1). Proportionate is not defined but there is a general rule of thumb that around 1 per cent of program funds should be devoted to program evaluation. The WELL program currently costs of the order of \$14 million per annum. This implies an annual evaluation budget of around \$140,000.

On p.41 of the report we identify from the literature a set of best practice methods to be used in evaluating workplace literacy programs. Most of these are informed by the general principles discussed in the preceding section and deal with second-order measurement issues that are needed to ensure the soundness of the evaluation (e.g. collecting before and after data, from both participants and non-participants).

An important question to resolve is what is to be evaluated. Our report has examined the literature, which is scant, on the impact of raising workforce literacy levels through programs delivered in the workplace. There is, as we have demonstrated, a larger body of research and evaluation on the effect of raising literacy levels in the general population, and of the effect of general skills training in the workplace. A project design to specifically evaluate the impact of the WELL program will be quite different to an econometric study that attempts to measure the economic benefit of raising adult literacy at large.

Our assumption is that the Department is interested in an evaluation study specifically on the impact of the WELL program. This is on the grounds that it cannot confidently be inferred that any economic benefit of raising adult literacy at large will necessarily accrue through the delivery of the WELL program.

The most useful impact evaluation study cited in our literature review is that by Krueger and Rose (1998), a study based on just two sites. In our view, it is better to intensively study fewer sites than to thinly study many sites. It is also important to carefully select sites for study so that they cover a diverse spread of projects – diversity in the type of projects and type of business is more important than geographic diversity. This combination of a limited but diverse number of sites will give both rigour and a sense of variability. This can then be used to extrapolate the impact for the program as a whole (using a number of different scenarios), so long as the assumptions that are embedded in any extrapolation are made explicit.

The Krueger and Rose study covers the impact on both individual program participants (e.g. wages, promotion opportunities) and on the workplace (e.g. staff turnover, absenteeism, productivity), as per the Hollenbeck (1996) framework, and this too is another important element in designing an evaluation.

A good application of the quasi-experimental method discussed above would be to investigate the impact of the WELL program in some large multiple-establishment organisations, where workforce

characteristics are broadly similar across the different establishments within the organisation. The impact could be measured for this organisation by imposing limits that the project be confined to a sub-set of the establishments.

We would finally recommend that participation in an evaluation study be made a condition of the awarding of projects under the program.

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