

At a glance



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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.

Key messages

- Literacy and numeracy skills are shaped by social, cultural and technological developments. Therefore the definition of literacy will change with the times, as will approaches to fostering literacy and numeracy skills.
- The challenge is not confined to those with poor basic skills but extends to all people trying to understand new forms of communication and information as they take on different roles in life and work.
- People with limited literacy can lead very successful lives. They can achieve stable employment, economic self-management and academic success. In doing so, they often have to be particularly determined and able to make clever use of networks and technologies.
- Learning about language, literacy and numeracy is not restricted to conventional educational environments. It can also be integrated into work and community settings. This requires effective collaboration and coordinated approaches.
- Recognising the multiple dimensions of literacy should lead to diverse teaching and learning strategies. This has implications for adult literacy practitioners and indicates a need for more professional development.

United Nations Literacy Decade 2003–2012

Literacy is about more than reading and writing—it is about how we communicate in society. It is about social practices and relationships, about knowledge, language and culture. Literacy—the use of written communication— finds its place in our lives alongside other ways of communicating. Indeed, literacy itself takes many forms ... It comprises other skills needed for an individual's full autonomy and capacity to function effectively in a given society. It can range from reading instructions for fertilizers, or medical prescriptions, knowing which bus to catch, keeping accounts for a small business or operating a computer ... Those who use literacy take it for granted—but those who cannot use it are excluded from much communication in today's world.

(UNESCO 2003)

What is literacy and numeracy?

Globalisation and technological change have resulted in a proliferation of information. This has altered the way we think about literacy and numeracy. The continuous emergence of new ways of communicating also means that literacy and numeracy learning is now lifelong rather than confined to schooling.

Adult language and literacy can no longer be considered as a simple set of skills based in reading and writing printed texts. Rather, it may be viewed as a 'tool for making meaning' (Snyder et al. forthcoming), the use of which is determined by context. For example, as highlighted in box 1, the impact of information and communication technologies on everyday life expands the scope of what we would traditionally call 'literacy'.

Box 1: Information and communication technologies (ICT)

New technologies integrate previously separate modes of communication. Literacy and ICT are enmeshed, to the point that it may be inappropriate to treat them separately. 'Different fields of knowledge and different modes of communication deploy their own internal literacy conventions', which change over time. Literacy conventions associated with ICT tend to change rapidly. 'It is not only difficult but also unhelpful to separate "literacy" from its field of knowledge and to teach it in a program of its own.' (Snyder et al. forthcoming)

Literacy is no longer a singular overarching term. The concept is one of diversity, of 'multiple literacies' learned and employed depending on necessity. Indeed literacy may not be the most appropriate term to embrace all the contemporary sorts of reading, writing and interpreting skills. Snyder et al. (forthcoming) propose that 'communication' could be a better word, and one which avoids the negative connotations sometimes associated with the term literacy.

This contemporary definition of literacy sees learners interpreting their world by developing the reading, writing, speaking and listening capabilities needed to use print and electronic-based texts, as well as oral and visual resources.

Numeracy is not the same as basic arithmetic. It encompasses the abilities to interpret, calculate and communicate mathematical information.

Social and economic purposes of literacy and numeracy

Literacy has many purposes. For individuals it contributes to personal development and provides economic and social benefits. It shapes an individual's capacity to view the world critically, to exert influence in their daily life, and provides a tool for ongoing learning throughout civic, social and economic life.

For society, a literate population contributes to a nation's productivity and competitiveness, builds community capacity to effect and manage change, and assists in maintaining cultural values. As technologies require higher levels of skills and greater adaptability, people now have to keep learning new literacies to remain competitive in the workplace (Wickert & McGuirk forthcoming). A number of the economic benefits associated with improved literacy and numeracy in the workplace are outlined in box 2.

With the economic situation that exists today, there is a general decline in the availability of jobs for workers with low literacy and numeracy skills (Gleeson forthcoming). This group is doubly disadvantaged, as they are also the workers least likely to receive training to upgrade their skills, and are often more reluctant to return to formal learning.

Box 2: Economic benefits of literacy

Improved literacy and numeracy for workplaces is one factor contributing to direct economic benefits of:

- increased output of products and services
- reduced error rate, including returned orders
- reduced waste in production and services
- increased employee retention
- better performance
- improved capacity to use new technology.
- reduced time per task
- better occupational health and safety record
- increased customer retention and satisfaction
- improved quality of work and life
- improved capacity to cope with workplace change

(Balzary 2004, p.2)

Responding to a world of multiple literacies

Lonsdale and McCurry (2004) argue that government policies should reflect the fact that an individual's literacy needs change over time—and according to age, gender, language, and the context in which these literacies are being used. Policy-makers and practitioners need to be able to respond to society's changing needs. This means moving beyond the prevailing idea of literacy as a set of discrete and basic skills—testable, measurable and transferable from one context to another.

At a national forum (Ithaca Group 2004) on adult language, literacy and numeracy in September 2004, professionals identified the following ideas which need to be incorporated into a framework for responding to the complexity of contemporary literacy:

- a focus on individual needs
- a recognition of multiple literacies
- the constantly evolving nature of literacy and numeracy
- the role of literacy and numeracy in developing human and social capital.

Literacy and numeracy affects everyone—it is not just an access and equity issue.

While formal learning is important, this framework requires initiatives that extend beyond it to embrace informal learning in communities, families, workplaces and everyday life (see box 3). It also highlights the need for a collaborative approach between government, practitioners, business, communities and academics to make language, literacy and numeracy generic skills which are linked to other government strategies.

Box 3: Informal learning in the community

To harness this potential requires community capacity building in local government, in local institutions such as museums and libraries, among community service providers (e.g. government agencies, health services) and in local business outlets (the bank, the post office and the club). It means re-thinking the idea of learning as something that takes place exclusively in a classroom and of the teacher as someone who hails from the education sector. Sons and daughters, doctors and nurses, football coaches and work colleagues can also be the trigger for much of the learning our community needs. But to become as effective as possible as mentors, tutors or champions of literacy, they need to build up their skills in teaching literacy, in advocacy and in the art of persuading the reluctant learner to become involved. Furthermore, they need to be able to identify the most appropriate entry point for that learner—which may not be a conventional literacy class. (Beddie 2004, p.5)

Contexts for learning

Just as the range of literacies is expanding, so are the contexts for learning. These have been influenced by new technologies, which have introduced the possibility of more flexible learning approaches and environments. The increasing household use of computers and the internet are evidence of greater sophistication in technologies at home. It is 'likely that blurring of the boundaries between work, education, training and the domestic sphere will continue to accelerate' (Gleeson forthcoming).

Workplaces

The workplace is increasingly significant as a site for learning. It can provide an environment for highly relevant training which combines practical and reflective approaches. Here, the teacher/trainer is less an instructor and more a facilitator; whose role is to devise problem-based learning strategies and encourage mentoring and peer tutoring.

Integrating literacy learning with technical training

Adult language, literacy and numeracy provision can be integrated into workplace training for technical skills. This is shown by Hayes et al. (2004) who looked at the potential of fire and emergency services to develop fire-fighting skills along with the literacy and communication requirements of working in teams (see box 4). Such learning contributes not only to the emergency service but also to the social capital of the surrounding community. In fact, Hayes et al. suggest that the integration of literacy into technical training is a better way of enhancing skills in regional areas than offering language, literacy and numeracy as a stand-alone package.

This potential to learn new skills extends beyond volunteers with low literacy skills to those in leadership positions who require development in areas such as using a computer, networking, team and communication skills (Hayes et al. 2004). Offering highly relevant training to fill gaps in skills sets is also more likely to attract older learners, who may be reluctant to return to traditional forms of classroom learning and who are able to draw on their experience to gain new competencies.

Box 4: Fire and emergency services

It was clear that volunteers felt that some sort of training was required so that people could learn how to perform their public safety role ... most volunteers preferred much more 'hands-on' training (86%) and believed this was the best way for volunteers to be taught and to learn: 'You get a group of blokes and sit there for four hours just doing paperwork: now those blokes have lost interest straight away pretty well. But if you got them outside, and you've got flame and you want to put water on it—because that's what they want to do, is put the fire out—and do your training, you'll win them every time. As long as they're doing something manually and hands-on ...' (Volunteer, Victoria) (Hayes et al. 2004, p.47)

Improving numeracy

The workplace also affords opportunities for workers to develop and use numeracy skills. Ensuring that people have the appropriate level of numeracy is particularly important in jobs that involve a risk to public safety and the environment. FitzSimons and Mlcek (forthcoming) considered the numeracy skills required in one such occupation—chemical spraying—and found that here formal off-the-job training, supplemented by on-the-job training, was needed (see box 5).

Box 5: Numeracy skills in chemical spraying

The numeracy aspects of the tasks of preparing, applying and handling chemicals require that a complex set of variables—much more complex than the simple application of mathematical skills learned in school or vocational education—must be taken into account by the person responsible. Critical tasks include the calculation and measurement of chemicals, taking into account variables of space, time, carrying capacity of particular tanks, and environmental scans; the calibration of equipment (with associated calculations); accurate record keeping and consultation with previous records; and efficient location of chemicals in warehouse situations.

... At the same time calculations are double-checked and team and group work is fostered as part of workplace practice. 'Artifacts' (equipment, tables, carts, ready-reckoners) are used as resources to aid in formal calculations, or in other situations requiring assessment and evaluation.

(FitzSimons & Mlcek forthcoming)

The worksite influences both the type of numeracy skills needed as well as how they are deployed. In other words the task, the history of the task (e.g. how previous records were taken) and the equipment used, determine the sort of calculations people must be able to do. Once these are learned, usually in a face-to-face teaching situation, they have to be embedded through practice. Thus, activities are repeated on the job until workers fully acquire competence.

Numeracy involves the application of common sense, estimation and approximation. But given the risks involved (e.g. in chemical spraying, risks to the operator, the public and the environment) if calculations are wrong, there is limited tolerance for error. Workers need to exercise judgement over when it is appropriate to approximate or estimate and when not to. They also need to be receptive to feedback from team members and from expert managers.

Workplace numeracy requires training that is relevant to the application of the skill rather than school-based approaches. Training needs to reflect workplace practices by incorporating authentic scenarios in real or simulated tasks done in small groups with shared responsibilities. Strategies to foster critical thinking, 'learning to learn' skills, and key competencies of communication, planning and problem solving need to be consciously developed (FitzSimons & Mlcek forthcoming).

The language of the job

Waterhouse and Virgona's (2004) investigation of workplace literacies in the aged care and call centre industries found that literacy instruction and application often focus narrowly on the business and goals of a particular enterprise (see box 6). This can mean that what is learned is not always readily transferable to other industries.

Box 6: Aged care and call centres

Different workplaces afford opportunities to develop literacies across a broad range of generic and industry-specific areas.

The literacies of call centres are focused on providing a 'consistent, speedy and amicable service and to promote the "brand" of the company'. They are mediated by technology which reduces the need for written literacies. Written transactions are limited to particular abbreviated texts to a formulaic script—hot keys for frequent sentences, abbreviations and short message systems (SMS).

In aged care centres, literacies are prescribed by funding, accountability and regulatory requirements, which fix the values and relationships between carers and clients. (Waterhouse & Virgona 2004)

This research looked at the literacy needs of casual or contingent workers. It found that to stay in employment, these workers not only needed generic employability skills, but also the ability to learn and to read different workplace cultures. They also had to have good interpersonal skills to assist them adjust to the social settings of each job.

Community contexts

An individual's capacity to engage in civic society can be constrained by inadequate skills in some literacies. This is not confined to those with limited reading and writing ability. Particular circumstances—for example, making a major financial decision or a legal matter—may require people to master more specialised literacies to enable full participation and understanding.

Legal literacy

Cumming and Wilson (forthcoming) highlighted the impact of literacy development on participation in the legal system by examining the area of alternative dispute resolution (ADR), a growing practice in Australia and internationally (see box 7). It is intended to be a fair, relatively inexpensive and quick way of solving legal or quasi-legal disputes. While it is promoted as an oral process, in practice it requires the ability to comprehend complex written texts involving both literacy and numeracy, and to

cope with context-specific language. Thus, literacy is fundamental to successful participation and access to justice. Cumming and Wilson say it is therefore important to highlight literacy training issues for those supporting the legal processes; for example, mediators. They also suggest it would be useful to modify written texts intended for participants in the alternative dispute resolution processes.

Box 7: Alternative dispute resolution

To engage in ADR, participants must be able to 'speak, hear, observe, reason, sustain a logical argument, remember, concentrate, understand, negotiate, communicate'. (National Alternative Dispute Resolution Advisory Council, cited in Cumming & Wilson forthcoming).

The study found that 'Australians working and living across the spectrum of income, activity, cultural groups and socio-economic class not only become engaged in ADR but also may, and do, present with literacy and numeracy difficulties. More importantly, the implication is that the parties do not initially draw attention to these difficulties; the mediators have had to identify it for themselves during the process' (Cumming & Wilson forthcoming).

Indigenous communities

Kral and Falk (2004) have identified the need for training in remote Indigenous communities to be compatible with community aspirations about long-term development (see box 8). The limited labour market and lack of cross-generational education experiences in these communities pose obstacles to delivering training which is able to contribute to economic sustainability and incorporate core values of Indigenous law, culture and language. In this context:

Literacy ... is only relevant if it is linked in a useful way to the prescribed roles and responsibilities in the community. The mainstream education and training system invests in the individuals progressing along a pathway towards labour market and employment, whereas in this remote Indigenous context the most important investment is in the social capital—norms (values), networks and trust (Putnam 1993)—of the communal whole. (Kral & Falk 2004, p.8)

So, while Indigenous communities consider Western education important they do not believe it should come at the expense of traditional culture. This poses a challenge to an industry-driven vocational education and training (VET) system based on national competency standards. Kral and Falk (2004) suggest that mainstream VET has a poor fit with the needs, values, interests and opportunities in the rural Indigenous community they studied. They found that while skills could be taught, the process was futile as it was irrelevant to the local community, where formal education and training was not seen to be aligned with cultural expectations.

Fostering literacy in this context goes beyond developing skills for economic participation. It is about developing community capacity to influence and direct the running of the community. 'The community is seeking a "both ways" model where mainstream education, and education into the Indigenous law happen side by side' (Kral & Falk 2004, p.58).

Box 8: Literacy in a remote Indigenous community

The concept 'community control' is embedded with notions of participation, empowerment and development, as well as equity, as training seeks to attain skills commensurate with the mainstream. However, in this case study, the key first step along the pathway towards community control is cultural control. The components of cultural control include acknowledging that the process of community capacity development is communal and must be done in a way that adheres to the authority structures and kinship relationships extant in the community through the Indigenous law. In this model the community looks to having the 'right people', chosen by the community and placed in the 'right roles'. This may be a slow, intergenerational process that will lead ultimately to the next generation taking responsibility; as opposed to a more deficit-oriented model that seeks to rapidly 'fill' Indigenous people with Western knowledge and skills, including English language, literacy and numeracy, required to 'take over' roles currently held by non-Indigenous people. The community is identifying that if training for employment is to be successful in the long-term, it must work within an evolving model of community control and be relevant to community priorities. (Kral & Falk 2004, p.46)

Ethnic communities

Identifying and meeting the literacy needs of adults in ethnic communities, particularly those who have recently arrived in Australia, demands cross-cultural sensitivity and recognition of the complexities these learners may face. For example, some people with English language difficulties have high literacy in another language; others will have limited literacy in their first language; others may have very good spoken English language skills but poor written literacy (Miralles 2004).

Miralles' (2004) investigation in six ethnic communities found that people had only a limited understanding of the VET sector, which was seen primarily as a useful preparation for work rather than an option for people once they were employed. While work-based programs were valued, there was little appreciation of how apprenticeships and traineeships could contribute to career development.

Moreover, participation in and completion of training by these ethnic communities was affected by poor access to transport; lack of an extended family network and associated childcare; the absence of sufficient culturally appropriate content and support during training. Costs (fees and lost earnings) were also a barrier.

Empathy with cross-cultural issues was identified as important in encouraging ethnic learners. In particular, trainers needed to be aware that because someone could not speak much English, it did not automatically follow that their vocational competency was also limited.

In order to encourage more learning in ethnic communities, Miralles (2004) recommends against employing blanket marketing strategies that assume everyone gets their information in the same way. Instead, she suggests it is important to use messages and communication channels that will resonate with the target audience.

Formal learning institutions

Adult literacy and numeracy provision is an established component of vocational education and training in Australia. It is offered through formal accredited programs within the national training system and it is a requirement that language, literacy and numeracy are built in to all stages of the development of training packages. Adult and community education providers offer more general adult literacy tuition, with community programs often relying on volunteers.

In a study into how literacy and other content was integrated in training for the community services and health industry, McKenna and Fitzpatrick (forthcoming) found little difference between the way specialist language, literacy and numeracy teachers and facilitators with vocational backgrounds delivered the Community Services and Health Training Package (see box 9). They did, however, find that vocational facilitators benefited from having a framework within the training package for understanding how language and literacy were applied in the workplace context.

Box 9: Integrated delivery

All facilitators integrated 'learning to learn' activities in their teaching. Where the teaching was workplace based, and students needed independent learning skills to complete assignments, facilitators decided whether they needed to attend additional classroom-based activities, or use the internet for support. This was integrated into the first sessions. Also important was assessing as soon as possible whether the student was going to need support with learning strategies.

In providing integrated programs the case study facilitators demonstrated a similar repertoire of instructional strategies including:

- introducing key industry and technical terminology
- creating frameworks for learners to access complex legal and theoretical texts, paraphrasing and by dictation
- modelling text types common in the professional discourse and industry
- introducing specific text genre and structure with opportunities to rehearse
- simulating report writing in course activities
- note-taking for guiding observations and evaluations
- facilitating oral communication through structured small group activities
- demonstrating active listening activities
- anticipating features of workplace practice to guide future experience
- reflecting on observations of the learner's own language in the workplace. (McKenna & Fitzpatrick forthcoming)

Australia's National Reporting System provides a potential basis for such a framework. The National Reporting System is an established part of adult literacy and numeracy provision. It is mainly used by practitioners involved in the Australian Government's Language Literacy and Numeracy, and Workplace English Language and Literacy programs. A study by Perkins (2005) reported that experts who use the National Reporting System consider it does assist analysis of students' strengths and weaknesses in language, literacy and numeracy. They therefore use it for planning, designing appropriate assessment materials and curriculum development and evaluation. Perkins also found that as a conceptual framework the National Reporting System needs to be updated to take account of contemporary views of adult language, literacy and numeracy and the impact of information and communications technology.

Professional development

Human interaction is essential for effective teaching and learning. The teacher/trainer therefore remains a critical resource. And, as Snyder et al. (forthcoming) point out, this will not altogether change in the new environment of e-learning: 'Teacher-learner relations and learner-learner relations are an indispensable part of the effective implementation of technology, the construction of new meanings and understandings about technology and the development of an appropriately critical and aware relationship towards new technologies'.

Professional development is therefore fundamental to ensuring that the system has the capacity to cater for contemporary adult language, literacy and numeracy policy and practice. The VET workforce, including adult literacy practitioners, is increasingly deregulated, casualised and employed in the private sector. In addition, many other adult literacy tutors are volunteers, who are required to keep their skills honed in their own time and at their own expense. The lack of a cohesive body of professionals 'undermines networking connections, collaborative possibilities previously developed under more integrated systems and shared provision arrangements' (Shore et al. 2002, p.4). Furthermore, the ageing of this workforce has implications for succession planning and the capacity to address the range of influences on adult language, literacy and numeracy provision.

The following issues need to be addressed when considering how to maintain a professional workforce and incorporate the diverse needs of volunteers, vocational trainers, stand-alone specialists, tutors and workplace educators:

- strengthened understanding of contemporary teaching and learning approaches and the development of career trajectories
- succession planning
- educators' need for assistance to 'integrate ICT [information and communication technologies] productively and critically within adult basic education programs' (Shore et al. 2002, p.4).

Concepts of success

Current approaches to teaching and learning are learner-centred. Success is measured in terms of the student's ability to apply their learning in outcomes rather than pre-determined goals. This concept is applicable to literacy which, as Lonsdale and McCurry put it, requires:

... a teaching and learning process (including assessment) which is focused on meaning-making. That is, rather than merely reproducing uncritically what they have been taught, learners should be able to make sense of the world and develop their own perspectives. This implies both an understanding of the world and the capacity to critically evaluate that world. If this broader conception of literacy is overlooked, then literacy becomes little more than the mastery of a series of sub-skills, rather than the genuinely transforming experience which current conceptions of literacy—as social practice, critical engagement, context-specific and multiple—suggest it should be. (2004, p.11)

Research by Waterhouse and Virgona (forthcoming) suggests that while literacy learning is important in providing access to further learning and long-term economic and social rewards, it is not the only pathway to success (see box 10). The lives of individuals in their studies show that people adopt successful strategies despite their literacy difficulties. A teaching approach that builds on their strengths and their other intelligences will assist these learners by further developing their strategies for learning and personal development. So will a different attitude to those with limited literacy skills, who are too often seen in terms of their deficits rather than their strengths. Limited literacy needs not be a life sentence.

Box 10: Contradicting stereotypes

[In exploring the slippery notion of success we] considered a range of indicators to be relevant. These included economic independence and continuous employment, stable relationship and successful parenting. Other criteria, which some may find surprising ... included academic achievement, attainment in business and wealth generation. In various ways, [each of] the individuals ... are living successful lives. However, their success has not been due to mastery over the written word. Perseverance, networks and technologies emerge as key strategies and resilience is identified as a significant attribute for success. (Waterhouse & Virgona forthcoming)

All participants in this study have sustained ongoing employment throughout their working lives by choosing jobs that match their marketable skills and their levels of literacy. (Waterhouse & Virgona forthcoming)

International perspectives

In 1996 the Organisation for Economic Co-operation and Development (OECD) surveyed adults in 20 countries (cited in McKenna & Fitzpatrick 2004). It examined prose literacy, document literacy and quantitative literacy across five levels. The survey identified a high proportion of adults (45–55%) performed at the lowest levels of literacy proficiency. This was not just an issue in developing countries. Significant proportions of the population in all countries had poor literacy. In Australia, 37% of people were found not to have adequate skills to meet the contemporary literacy requirements of society and work. Literacy issues were linked to age, education and income levels.

McKenna and Fitzpatrick (2004) compared literacy policies in six English-speaking nations participating in the OECD's International Adult Literacy Survey. Information was sought on each country's economic situation; adult literacy regulation, funding and quality assurance; concepts of adult literacy; and preparation for literacy teachers.

The study suggests the ingredients for a successful national adult literacy policy include:

- a national leadership structure
- national research and referral programs
- flexible funding arrangements
- diverse teaching and learning strategies and sites
- consistent reporting and quality assurance
- reliable supply and maintenance of teachers. (McKenna & Fitzpatrick 2004)

Australia's approach of integrating literacy with VET, which brings with it the added benefits of recognition and quality assurance, was praised. It was, however, pointed out that due to its federal system Australia did not have a national policy or strategy, although several states did have literacy plans.

Conclusion

While approaches differ from country to country, there is an increasing focus internationally on adult literacy and numeracy as a foundational requirement of economic development and social cohesion. So while adult language and literacy policy is placing increased emphasis on the requirements of individuals, particularly of workers in a changing work environment, it also needs to take account of the social context in which various literacies are practised.

Globalisation, technological change and the emergence of knowledge demand new skills. Workers are challenged with literacies that extend beyond those of conventional spoken and written texts to the skills required for effective workplace communication and teamwork.

Most OECD countries have appointed national agencies to promote literacy strategies and programs and to operate community-oriented programs alongside workforce programs. This has implications for funding, professional development and certification. Australia's approach is different in that there is a greater emphasis on integrating language and literacy training with training in specialist vocational skills. This includes mapping adult literacy and numeracy skills into VET standards and national qualification frameworks.

In many countries, the adult language and literacy teaching workforce is characterised by its voluntary and casual nature. This has led to a lack of attachment to the profession and limited understanding of the importance of teaching and learning strategies. Even when professionally qualified, teachers are often recruited from the schools sector and may have limited understanding of adult learning, vocational training, specialist language and literacy teaching or workplace contexts. The capacity of the workforce to teach literacies associated with new technologies is also questionable. These shortcomings put professional development and renewal of adult literacy practitioners high on the agenda of policy development and implementation.

References

- Balzary, S 2004, *Back to the new basics for business – the importance of literacy and numeracy skills*, viewed May 2005, <<http://www.dest.gov.au/literacynet/conference.htm>>.
- Beddie, F 2004, *Community literacy: A discussion paper*, viewed May 2005, <<http://www.dest.gov.au/literacynet/conference.htm>>.
- Cumming, J & Wilson, J (forthcoming), *Literacy, numeracy and alternative dispute resolution*, NCVET, Adelaide.
- FitzSimons, G & Mlcek, S (forthcoming), *Learning numeracy on the job: A case study in chemical handling and spraying*, NCVET, Adelaide.
- Gleeson, L (forthcoming) *Economic returns to education and training for adults with low numeracy skills*, NCVET, Adelaide.
- Hayes, C, Golding, B & Harvey, J 2004, *Adult learning through fire and emergency service organisations in small and remote Australian towns*, NCVET, Adelaide.
- Ithaca Group 2004, *Report of the National Adult Literacy Forum 9 September 2004*, for the Department of Education, Science and Training and the Australian National Training Authority, DEST, Canberra.
- Kral, I & Falk, I 2004, *What is all that learning for? Indigenous adult English literacy practice, training, community capacity and health*, NCVET, Adelaide.
- Lonsdale, M & McCurry, D 2004, *Literacy in the new millennium*, NCVET, Adelaide.
- McKenna, R & Fitzpatrick, L 2004, *Building sustainable adult literacy provision: A review of international trends in adult literacy policy and planning*, NCVET, Adelaide.
- McKenna, R & Fitzpatrick, L (forthcoming), *Integrated approaches to teaching adult literacy in Australia: A snapshot of practice in community services*, NCVET, Adelaide.
- Miralles, J 2004, *A fair go: Factors impacting on vocational education and training participation and completion in selected ethnic communities*, NCVET, Adelaide.
- Perkins, K (2005) *Reframe, rename, revitalise: Future directions for the National Reporting System*, NCVET, Adelaide.
- Shore, S, Searle, J, Falk, Johnston, B, Ovens, C & Riddell, C 2002, *Executive summary: Learning for life: The role of adult literacy and numeracy in lifelong learning and socio-economic well-being*, prepared for the Adult Literacy and Numeracy Australian Research Consortium National Research Program, June 2001 – May 2002, ALNARC, Melbourne.
- Snyder, I, Jones, A & Lo Bianco, J (forthcoming) *Using information and communication technologies in adult literacy education: New practices, new challenges*, NCVET, Adelaide.
- UNESCO 2003, *Today, literacy remains a major global challenge*, viewed May 2005, <<http://portal.unesco.org/education/en>>.
- Waterhouse, P & Virgona, C 2004, *Two-dimensional work: Workplace literacy in the aged care and call centre industries*, NCVET, Adelaide.
- Waterhouse, P & Virgona, C (forthcoming) *Contradicting the stereotype: Case studies of success despite literacy difficulties*, NCVET, Adelaide.
- Wickert, R & McGuirk, J (forthcoming), *Building literacy and numeracy capabilities in communities: Learning from exemplary practice*, NCVET, Adelaide.

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