

Social and economic benefits of improved
adult literacy: Towards a better understanding

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Social and economic benefits of improved adult literacy

Towards a better understanding

*Robyn Hartley
Jackie Horne
Australian Council for Adult Literacy*

The views and opinions expressed in this document are those of the author/project team and do not necessarily reflect the views of the Australian Government or NCVER

Publisher's note

Additional information relating to this research is available in *Social and economic benefits of improved adult literacy: Towards a better understanding—Support document*. It can be accessed from NCVER's website <<http://www.ncver.edu.au>>.



Australian Government
**Department of Education,
Science and Training**

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The author/project team was funded to undertake this research via a grant. These grants are awarded to organisations through a competitive process, in which NCVER does not participate.

ISBN 1 921169 48 6 print edition

1 921169 54 0 web edition

TD/TNC 84.15

Published by NCVER

ABN 87 007 967 311

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Acknowledgements

This project included consultations with a small number of people with special interests in health literacy, financial literacy, and literacy and numeracy within small business in Australia. Consultations also took place with experts in economic modelling and longitudinal cohort studies. We sincerely thank them for their contribution to the report. They are listed in appendix C.

We also thank the following members of the Australian Council for Adult Literacy strategy group for their professional input, support and guidance at all stages of the project:

- ✧ Professor Rosie Wickert, Director, Academic Policy and Projects, University of Technology Sydney
- ✧ Pauline O'Maley, Coordinator, Community Reintegration Program, Salvation Army, Melbourne
- ✧ Jim Thompson, Manager, Education Development Unit, Challenger TAFE, Western Australia.

Key messages

Assessing the social and economic costs of poor adult literacy and numeracy is largely uncharted territory in Australia. The benefits of investing in adult literacy and numeracy skills have also been under-researched. This study explores the various frameworks and methodologies available, with a view to informing future research and policy development.

- ✧ The most comprehensive relevant frameworks on costs and benefits relate to adult learning rather than literacy per se. They point to the importance of taking into account factors such as age and gender; collective as well as individual benefits; the ‘sustaining’ benefits of learning that enable people to continue or improve what they do in their communities; and the more recognisable ‘transforming’ benefits, such as increased employability.
- ✧ Longitudinal cohort studies will be an important source of data for measuring benefits and costs, and in particular for demonstrating the sustaining and transforming nature of improving literacy and numeracy skills. Given the high costs associated with longitudinal studies, the feasibility of ‘buying in’ to existing studies should be explored as an immediate short-term option in Australia.
- ✧ A mixture of quantitative and qualitative methodologies and the inclusion of individual, family and community impacts are likely to produce the most convincing evidence and understanding of costs of poor literacy and benefits of improved literacy.

Executive summary

Purpose and methodology

This study reviews a wide range of domestic and international literature to identify the frameworks and methodologies that have been used to estimate the costs and benefits associated with literacy and numeracy. The focus is on estimating economic and social costs and benefits across contexts such as health, finance, family relationships and crime, rather than traditional economic areas, such as productivity and the labour market (although this literature is briefly reviewed).

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.

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 with an understanding of how literacy influences the fields of health and finance. Reflecting the content of the literature, the report does not explore in any detail the benefits and costs of numeracy. Nevertheless, it is recognised that numeracy is an important area, and that further research is required in relation to costs and benefits.

The literature

Research studies providing estimates of the costs of poor literacy or the benefits of improving literacy exist across a range of economic and social domains, particularly in the international context. In relation to social contexts the relevant literature spans a wide range of areas, including health, financial and consumer issues, families, crime and social capital.¹ This study examined all of these areas, but used health and financial literacy as two main areas of interest. Small business was also identified as a main area of interest, given that a number of studies have examined the costs to business and employers of poor literacy skills within their workforce and/or the benefits of improving these skills. A small body of research on the costs and benefits for selected population groups also exists. This study therefore briefly reviews the literature for older people and Indigenous Australians.

General findings

The available frameworks and methodologies examined highlight the complexity of measuring costs and benefits and indicate that a range of factors should be addressed when undertaking research in this area. One of the key issues to emerge is the importance of a multi-disciplinary and multi-method approach to determining and measuring benefits and costs, and the need to integrate

¹ Social capital is generally understood as aspects of social organisations such as networks, shared values and trust that help facilitate cooperation and contribute to individual and social wellbeing. Debates about the concept and how it is best measured are ongoing.

human² and social capital approaches during this process. There is a need to embrace both rigorous quantitative and qualitative methodologies. Longitudinal cohort studies (studies which follow the same group of people over time, generally over a period of several years) are an important, but costly, source of data for measuring benefits and costs.

Selected areas of interest

Health literacy

An increased focus on measuring the impacts of poor literacy on health in Australia is timely, particularly given the emphasis in the health sector on self-management.

The international research on 'health literacy' is considerable. Studies have found links between lower literacy and a higher risk of hospitalisation, higher rates of depression and an inability to understand and comply with the use of prescription drugs.

Health literacy is a broad concept linked to the impact of poor literacy on general understandings of health issues, access to information, including knowledge about specific conditions such as asthma and diabetes, and participation in healthy behaviours. Less attention has been paid to mental health issues, although links are also being made here.

Overall, there is a need for research to go beyond studies which measure the association between health literacy levels, and knowledge and behaviour. In the future, a greater focus is required on measuring the benefits of investing in health literacy from the perspectives of individual health outcomes, and perhaps cost savings. Some potentially useful frameworks exist; for example, Nutbeam's (1999) framework which places health literacy in the broader arena of community and public health.

Financial literacy

A significant body of research from the United States has measured the benefits of improved levels of adult financial literacy gained through work-based financial education or high school-based programs. More recently within Australia, the Commonwealth Bank Foundation (2005) published research, which went beyond the ANZ Bank's (Roy Morgan Research 2003) previous study of levels of financial literacy within the population, to examine the individual and economic benefits of improving financial literacy levels. During 2005, the Consumer and Financial Literacy Foundation was established by the Australian Government to implement a national strategy for improving the consumer and financial literacy levels of Australians.

Nevertheless, important issues remain to be resolved in measuring financial literacy. These issues include achieving a better understanding of the relationship between financial literacy and low income levels, and the influence of attitudinal and psychological factors. Furthermore, research into the interaction between the financial literacy levels of employees and employer costs and rates of return has yet to be fully examined in Australia. A link between poor financial literacy and unemployment has been established, but much of the emphasis of existing research has been on employed rather than unemployed groups.

Business and employers

A range of methodologies have been used to measure the benefits of improving literacy and numeracy skills amongst employees, although a much larger body of literature exists on the benefits of investing in training in general. Research examining the impact of literacy and numeracy typically

² Human capital is the notion in which workers are vehicles for the economic progress of the nation.

focuses on cost savings and/or productivity gains to the company, although some studies have looked more widely, and include employee-focused outcomes, such as levels of promotion. Research from the United Kingdom suggests that most small business employers are largely unaware of poor literacy and numeracy skills. This is also a neglected area of understanding and research within Australia.

Possibilities for future research

A number of challenges exist in undertaking high-quality research on estimating the costs and benefits associated with literacy [and numeracy].

For the three areas selected in this study, further work is needed to address underlying conceptual issues, and in relation to the overarching notion of multiple literacies. Current measures of literacy and numeracy need to be refined, particularly in light of changing knowledge demands in life and work in the twenty-first century. Further research is required on the interactions between multiple literacies and the different impacts of factors, such as age, gender, life circumstances, and level of literacy and numeracy disadvantage. A combination of robust qualitative and quantitative methodologies is likely to be the best approach for capturing and understanding the range of costs and benefits. Numeracy tends to be the poor relation in the 'literacy and numeracy' partnership, yet its importance is undoubted; considerably more research is needed in this area.

It is clear from the consultations undertaken for this study that future research will depend on convincing government and research funding bodies that understanding adult literacy and numeracy costs and benefits is an important individual, community and national issue.

Further targeted consultations should be undertaken to reach a wider range of people in the areas of health literacy, financial literacy and literacy in small business. Small collaborative cross-discipline working groups could then be established to obtain agreement on priorities and appropriate methodologies and to jointly seek funding for further research.

More broadly, collaboration across sectors and research partnerships is crucial to the ongoing assessment and measurement of social and economic costs and benefits associated with literacy and numeracy. There is considerable scope for small- and large-scale research in the three sectors this study examines. As a first step, the possibility of buying into existing Australian longitudinal studies should be explored.

The uncharted nature of research into benefits and costs associated with multiple literacies in Australia, together with what has been learnt from the diversity of overseas literature reviewed here, leaves the way open for some focused initiatives which will ultimately contribute to a broader understanding of this area and lead to stronger policy development.

Additional information relating to this research is available in *Social and economic benefits of improved adult literacy: Towards a better understanding—Support document*. It can be accessed from NCVER's website <<http://www.ncver.edu.au>>. This document contains a literature review on mapping benefits and costs.

Introduction

Background

The Australian Council for Adult Literacy proposed that approaches to determining the costs of poor literacy and numeracy in Australia and the benefits of investing in literacy and numeracy be explored, principally for the following reasons. First, recent research highlights the importance of pursuing a broad and integrated approach to language, literacy and numeracy policy. Second, better understanding of the social and economic costs of poor literacy and numeracy and the benefits of investing in literacy and numeracy have the potential to provide valuable information for policy development, evaluation and public awareness campaigns. Third, it is important to prepare for and ensure that data from the next national survey of adult literacy, to take place in 2006, are put to the best strategic use.

Recent reports stress the need to pursue a broad and integrated approach to language, literacy and numeracy policy which takes account of the twenty-first century environment and changing conceptions of literacy (Beddie 2004; Lonsdale & McCurry 2004; Wickert 2004) and is consistent with international trends (McKenna & Fitzpatrick 2004). A broad approach is in line with Australia's national strategy for vocational education and training (VET), outlined in *Shaping our future* (ANTA 2004). This strategy regards the ability to handle new literacy demands as one of the economic forces underlying the case for investing in new skills. Rapid change in information and other technologies is likely to continue to extend the range of literacies we need to function fully in society. In addition, there are increased expectations that people 'self-manage' those areas of their lives that require relatively high levels of literacy and numeracy. An increasingly diverse body of research shows that poor literacy and numeracy skills can have a pervasive impact on individuals—on their identity, health, family life and capacity to fully participate socially and economically—and for communities, and for the maintenance and growth of social capital.³

Literacy is thus a social as well as an economic issue, a matter for communities as well as for governments and educational policy-makers. In light of this, there is a case for a much wider understanding of the social and economic benefits of improving literacy and numeracy, and the costs of poor literacy across many domains of life. Beddie (2004) concludes that 'we need widespread acceptance of the multi-faceted nature of contemporary literacy and recognition of its importance for social and economic well-being' (p.6).

There have been few attempts in Australia to measure benefits and costs associated with literacy and numeracy. Some interest was evident around the time of International Literacy Year in 1990. In a review of workplace literacy programs for non-English speaking background employees, Miltenyi (1989) had supervisors estimate the average amount of time saved per worker through improved English. Singh (1989) extrapolated the findings to estimate the possible yearly savings across the whole Australian workforce. In a report commissioned by the International Literacy Year Secretariat in Australia, Hartley (1989) discussed social costs of inadequate literacy skills in the areas of citizenship

³ Social capital is generally understood as aspects of social organisations such as networks, shared values and trust that help facilitate cooperation and contribute to individual and social wellbeing. Debates about the concept and how it is best measured are ongoing.

and family life, health, consumer rights, the labour force, crime and social welfare. There has been little work since then, except recently around financial literacy costs and benefits.

In contrast, there is a considerable body of relevant research from the United States, Canada, the United Kingdom and some European countries. The release of data from the International Adult Literacy Survey in the 1990s was a significant impetus to undertaking some of this research.

Purpose and aim of the research

The purpose of the research is to work towards obtaining reliable and useful estimates of the social and economic costs of poor adult literacy and numeracy in Australia, and the benefits of investing in these skills. It is hoped that this will inform future literacy and numeracy policy development. The research was conceived as potentially having a number of stages. The aim of stage one, reported here, is to explore the frameworks and methodologies available for determining and measuring benefits and costs across a number of life domains. It is essentially a scoping and feasibility study, which examines research findings related to multiple literacies and assesses possibilities for further developments in some domains in Australia.

Measuring costs and benefits

Measuring the costs of poor literacy and the benefits of improving literacy across different areas of social, economic and community life is a compelling but complex issue. Reliable estimates of costs and benefits are persuasive tools in the field of policy-making and government investment decisions. However, measurement of costs and benefits is rarely straightforward. It is therefore useful to discuss a number of issues and concepts related to measurement. This is particularly the case, given that researchers from different backgrounds will approach the issue of the measurement of costs and benefits from different perspectives.

Economists typically approach the valuation of costs and benefits with their ideal standard of measuring everything in monetary terms. This allows them to undertake cost–benefit analysis; that is, to compare the balance of costs and benefits over time, and to calculate a rate of return on an investment in a particular intervention, program or policy. Often, both the economic return (based on output or income) and the social return will be calculated. The social return has a wider base than the economic return and includes monetary valuation of the costs and benefits to individuals, taxpayers and society at large.

However, it is not always possible to value costs and benefits in monetary terms, particularly in the fields of education and health. This is because many of the outcomes of education (apart from increased earnings) are not traded within the marketplace and therefore do not have a direct monetary value attached to them. Therefore, depending on the research question and the extent of available data and techniques, together with the availability of funding for collecting new data on costs and benefits, the unit of measurement may be in monetary terms (for example, the costs of health care), but more frequently, costs and benefits will be measured in another unit (for example, rates of hospitalisation or smoking rates). In relation to literacy costs and benefits, a variety of approaches and estimation techniques have been used.

There are, of course, a host of issues to consider when it comes to reliably measuring costs and benefits and undertaking statistical analysis. A full discussion of these issues is beyond the scope of this report, although some are discussed where relevant. However, in general, it is worth highlighting the need to control the impact other variables may have on the accurate measurement of the costs and benefits of literacy, as many socioeconomic factors (including income and employment status) interact with literacy and outcomes such as health.

Key research questions

The key research questions are:

- ✧ What effective means of measuring costs and benefits are available in various sectors?
- ✧ What frameworks are available for examining the key impacts of literacy and numeracy skills for individuals and across areas of social, economic and community life?
- ✧ What possibilities exist in the short and longer term for establishing frameworks for ongoing monitoring and analysis of costs and benefits in relation to literacy and numeracy?
- ✧ What existing information is available for modelling and assessing economic and social costs and benefits, and what new data might need to be collected?

Research design

The design incorporates the following elements.

- ✧ A literature search, with the main focus on links between literacy and areas of social policy other than labour market participation and economic growth. These include health, families, consumer understanding of finance and financial matters ('financial literacy'), the impact on business and employers of literacy and numeracy skills, and costs and benefits related to crime and social capital. The better known literature examining the link between literacy and numeracy and productivity is, however, re-visited briefly.
- ✧ Consultations focused on three areas selected from the literature, in order to further explore the possibilities for determining costs and benefits in those areas in Australia.
- ✧ Summaries of ways to gather data on costs and benefits, drawing on the literature and the consultations.

The literature review was designed chiefly to explore the first and second research questions and the consultations to provide preliminary answers to the third and fourth research questions. A summary of the literature review and the findings from the consultations are provided in the main body of the report. The support document provides a detailed outline and discussion of the literature reviewed.

Scope of the literature review

In general, the following literature has been included:

- ✧ research which measures the benefits of adult literacy and numeracy skills, or the costs of poor literacy and numeracy, either generally or in relation to a specific domain
- ✧ literature which includes, proposes or develops a framework from research for discussing the effects of literacy and numeracy, generally or in relation to a specific domain
- ✧ selected research which discusses the benefits (and the costs) of adult learning, and/or provides a framework for doing so. While it does not always refer directly to literacy and numeracy, this literature is included, because the concepts, frameworks and effects often parallel those for literacy and numeracy.

The review is a broad scoping of the literature rather than a 'systematic' literature review. That is, it does not identify all literature on a particular topic and subject it to a highly structured elimination and inclusion strategy based on set criteria. The broad scoping approach best suited the research questions.

A decision was taken to focus on literature which measured the costs and/or benefits of literacy and numeracy rather than proxy measures such as early school leaving or educational qualifications. Additional years of schooling and education generally add to literacy and numeracy levels, and people with higher literacy and numeracy skills are more likely to continue their education beyond the minimum school leaving age and gain additional qualifications. However, there is not a perfect relationship between these variables. Therefore, the inclusion of literature which looked at possible proxy measures for literacy and numeracy was only going to muddy the waters and make the measurement of the costs and/or benefits of literacy more difficult.

In general, evaluation reports of individual, state or national adult literacy programs were excluded from the review, despite the fact that some identify social and economic outcomes beyond improvements in literacy levels. They were excluded because most do not directly investigate benefits and costs related to adult literacy. Furthermore, the sheer number of such evaluations precludes adequately surveying relevant reports in a project of the scope reported here. Evaluation of literacy programs is a different undertaking from assessing the impact of literacy as such. Findings are dependent to an unknown extent on the nature and circumstances of each program, while reported outcomes are generally related to reporting requirements of funding bodies. Nevertheless, it is clear that program evaluations have contributed substantially to a broader understanding of the effects of literacy, and provided evidence of a range of individual and social impacts with implications for benefits and costs.

Further details of the literature search are in appendix A.

Defining literacy

In the main, the business of defining literacy has been avoided, since it was not believed to be essential to the main thrust of the research. Nevertheless, debates about definitions of literacy and numeracy are important for increasing understanding and ensuring greater clarity in research. So too is continuing discussion about the nature and scope of terms such as health literacy, financial literacy, information literacy, and further 'new literacies' likely to emerge in the future. To reiterate, the primary concerns of this project are frameworks which are available for exploring the impact of literacies, and methodologies used to identify and measure those impacts.

Limitations of the project

The report does not explore in any detail the benefits and costs of numeracy, as little directly relevant information was found. However, it needs to be acknowledged that, although literacy and numeracy are often linked in the literature, poor numeracy has a different set of consequences from poor literacy.

The complex issues associated with Indigenous language, literacy and numeracy are not dealt with in detail, although some relevant research is included.

Finally, the reported research does not necessarily illustrate or suggest how to go about reducing costs and enhancing benefits, except in the broadest terms. Developing appropriate policies and practices which ensure access to learning opportunities and which take account of the many and varied reasons why people do not access them (Long & Taylor 2002) is another matter. This requires cooperation between governments, researchers in diverse social areas, literacy practitioners, learners, communities and other interested parties working together and across areas where literacy has an impact. An underlying premise of this report is the importance of sectors and domains (other than education) increasing their awareness and understanding of literacy and its impact, and adult educators working in the field of literacy becoming better informed about other sectors.

Mapping benefits and costs

This chapter summarises the literature on relevant frameworks and methodologies used to explore and measure the costs of poor literacy and/or the benefits of improving literacy. It synthesises and provides examples of findings in the main areas of interest which emerged from the literature—health literacy, financial literacy and business and employers. A brief discussion of outcomes and impacts of literacy in relation to the other areas of interest identified but less well researched is also included. These are the areas of family relationships, crime, social capital, older people and Indigenous Australians.

Interested readers, especially those interested in pursuing further research in any of the areas discussed, are directed to the support document of the project for a detailed outline and discussion of the literature on which this chapter is based.

General frameworks

The most comprehensive available frameworks for investigating benefits and costs are concerned with adult learning, rather than with literacy as such (see, for example, the work of the Centre for Research into the Wider Benefits of Learning in the United Kingdom, particularly Schuller et al. 2001, 2004).

The frameworks suggest that attempts to measure benefits and costs of literacy and numeracy need to take account of a number of factors, some of which may appear obvious but which often require sophisticated methodologies and measurement techniques. These factors include attention to the ‘sustaining’ benefits that can accrue from learning as well as the more recognisable ‘transforming’ benefits where individual change is apparent; the fact that benefits can be individual and collective; the cumulative and dynamic nature of benefits (Schuller et al. 2001, 2004) and indications from the research that benefits and costs may vary for different groups of people according to, for example, their gender and stage of life.

Overall, the available frameworks indicate the importance of a multi-disciplinary approach to determining and measuring benefits and costs, and the need to integrate human and social capital approaches. While literacy and social capital is a burgeoning area of interest, the present focus in the literature is predominantly on social capital outcomes of literacy learning, rather than on measuring the benefits and costs associated with literacy.

Individual outcomes and economic and social impacts

A number of studies have used large datasets to measure the costs of poor literacy skills to individuals and/or the economy and society. Datasets used include the International Adult Literacy Survey dataset and a number of longitudinal cohort studies (studies which look over time at groups of people with a common statistical characteristic). It should be borne in mind that research which examines the link between literacy and numeracy levels and economic and social outcomes, rather than using related measures such as years of schooling or qualifications, is still relatively new.

The International Adult Literacy Survey and the Adult Literacy and Lifeskills Survey

The main data source for international and national information on adult literacy proficiency is the International Adult Literacy Survey. The survey was coordinated by the Organisation for Economic Co-operation and Development (OECD), and Human Resources Development Canada (1997) and conducted between 1994 and 1998 in some 30 countries. Australia had a sample of over 9000 people, the largest of any participating country. Australian findings are reported in *Aspects of literacy: Assessed literacy skills* (ABS 1997a). A notable analysis of these findings is the Language Australia report (Hagston 2002), which explored the implications of the findings for further research and policy.

The survey provides measures of three domains of literacy skills—prose literacy, document literacy and quantitative literacy. The quantitative domain measures numeracy, so ‘literacy’ in the survey can be regarded as literacy and numeracy. Literacy proficiency is reported according to five levels, level five being the highest. Briefly, level three is described as a ‘suitable minimum for coping with the demands of everyday life and work in a complex advanced society’ (OECD & Statistics Canada 2000, p. xi). Around 20% of Australians were at level one on each scale, and around 28% were on level two. They were not necessarily the same people; about 15% were on level one on all three scales (ABS 1997a).

The survey was criticised on a number of counts. Sticht (2001) questioned its validity, including the standard used as a measure of competence. Others have argued that it is based on an inadequate and outdated conceptual notion of literacy and an individual deficit model where the focus is on personal inadequacies rather than social and cultural factors which are known to contribute to poor literacy (see the summary of criticisms in Lonsdale & McCurry 2004). Some see it as reflecting the state of technology and understanding at the time and as requiring further development to incorporate higher order skills (Desjardins & Murray 2003). Despite the criticisms, it has been used extensively by some participating countries for planning and advocacy and for exploring relationships between literacy levels and other social and economic variables. Statistics Canada has produced a substantial number of reports investigating issues such as literacy and labour market outcomes, occupational assignment and the returns to over- and under-education, and immigrant earnings.

Initial findings from the first round of a new international survey, the Adult Literacy and Lifeskills Survey conducted in 2003, have been released. In Australia, the Adult Literacy and Lifeskills Survey, conducted by the Australian Bureau of Statistics (ABS), will take place in the second half of 2006. In addition to prose literacy and document literacy included in the International Adult Literacy Survey, the Adult Literacy and Lifeskills Survey directly measures numeracy (replacing the quantitative literacy domain of the older survey) and problem-solving. It indirectly measures teamwork, the competencies needed for effective participation in a team, and knowledge and skills related to information communication technologies. Information about participation in adult learning and training after the initial cycle of formal education is also sought.

Using the International Adult Literacy Survey to map benefits and costs

International Adult Literacy Survey data have been used to examine the link between literacy and a number of economic variables, including labour market outcomes, earnings and the returns to different levels of education, and immigrant earnings. Analysis of these data (Williams 1999, quoted in Hagston 2002) has also shown that receipt of welfare benefits, health, criminal activity, and community participation are linked with literacy skills and educational achievement. Health has been a particularly fruitful area of investigation. Although health outcomes were not directly measured in the survey, analysis of the findings has shown that high levels of literacy are associated with better health outcomes, for example, higher life expectancy and healthier habits and lifestyles (OECD & Statistics Canada 2000). Similarly, Roberts and Fawcett’s (1998) analysis of Canadian survey data found that people with lower literacy levels were more likely to be at higher health risk, with an increased effect on senior citizens.

Within Australia, Chiswick, Lee and Miller (2003) used data from the survey to examine the effects of literacy, numeracy and schooling on labour market outcomes. It was found that approximately half of the total effect of schooling on labour force participation and on unemployment can be attributed to literacy and numeracy skills.

Most recently, data from the survey have been used to identify a significant relationship between investments in human capital (literacy levels) and a country's subsequent economic growth and labour productivity. Coulombe, Tremblay and Marchand (2004) concluded that a rise of 1% in a country's literacy (that is, their average literacy and numeracy skills level as measured by the International Adult literacy Survey) score relative to the international average is associated with an eventual 2.5% relative rise in labour productivity and a 1.5% increase in gross domestic product per head.

Longitudinal cohort studies

In the United Kingdom, two longitudinal cohort studies, the National Child Development Study begun in 1958 and the 1970 British Cohort Study, have been popular data sources for measuring the benefits to individuals, the economy and society of improving literacy, no doubt because of the rich data on both economic and social outcomes they include.

A representative study, which measured both the economic and non-economic impacts of improving adult literacy and numeracy skills, is that of Bynner et al. (2001). Using data from the National Child Development Study and the British Cohort Study, along with data from the United Kingdom Family Expenditure Survey and Family Resources Surveys, and applying statistical modelling techniques, they found that individuals who increase their literacy and numeracy levels:

- ✧ improve their chances in the labour market, moving up the occupational status scale and resisting unemployment
- ✧ suffer less from poor physical and mental health
- ✧ are less likely to have children experiencing difficulty at school
- ✧ are more likely to be active citizens, as shown by voting behaviour and expressing interest in politics
- ✧ are more liberal and less discriminatory in their attitudes.

These effects persist after controlling for earlier family circumstances and educational achievement. Labour market effects were found to be stronger for the younger British Cohort Study cohort, while the health and citizenship effects were stronger for the older National Child Development Study cohort.

Bynner et al. (2001) also used micro-economic modelling and the Family Expenditure Survey and Family Resources Survey time series to calculate the impact on gross domestic product and government finances of implementing the literacy and numeracy targets set out in the Moser Report (Moser 1999). Moser's comprehensive review preceded *Skills for life*, the national strategy for improving adult literacy and numeracy skills in the United Kingdom (Department for Education and Skills 2001). Bynner et al. (2001) found that meeting the literacy and numeracy targets would generate £0.44 billion and £2.54 billion per annum (2001 prices), respectively, to the taxpayer.

Within Australia, the impact of low school achievement in literacy and numeracy on unemployment has been measured using the Longitudinal Survey of Australian Youth dataset. Marks and Fleming (1998) found that low school achievement in literacy and numeracy was consistently associated with youth unemployment, with effects continuing through to the age of 33. Similarly, Gleeson (2005) has been using the Longitudinal Survey of Australian Youth dataset to examine the economic returns for training of adults with low levels of literacy and numeracy. (This dataset is discussed further in the following chapter and appendix D.)

Selected areas of interest

Health literacy

Health literacy is a broad concept linked to the impact of poor literacy on health, general understanding of health issues, access to information, including knowledge about specific conditions such as asthma and diabetes, and participation in healthy behaviours.

A number of extensive annotated bibliographies attest to the growth of interest in literacy and health. Comprehensive summaries and discussions of research include Berkman et al. (2004), Rootman and Ronson (2003) and Shohet (2004). Shohet (2004) noted that:

There seem to be converging trends in the adult education and health fields. It may be that health outcomes will become the way to justify greater investment in adult basic education and to demonstrate that literacy has to be addressed as a 'horizontal' policy issue.

(Shohet 2004, p.76)

Some potentially useful frameworks for examining health literacy exist. One is Nutbeam's (1999) framework which describes functional, interactive and critical health literacy, and places health literacy in the wider arena of health promotion. Functional health literacy is broadly defined as the ability to read and comprehend medical information and instructions. Interactive health literacy refers to the development of personal skills that improve capacity to act independently and improve motivation and self-confidence to act on advice received. Critical health literacy refers to personal and community empowerment to act on the social and economic determinants of health.

A considerable amount of work on health literacy benefits and costs has been carried out. However, most studies to date have investigated either the benefits or costs of different levels of functional health literacy from a medical perspective. There is nevertheless a growing recognition of the need to go beyond functional literacy, with moves coming from both the health profession and adult educators.

Studies which have attempted to quantify the impact of health literacy have examined the relationship between health literacy levels and measures such as: knowledge and comprehension of health care and health care services; use of health care services; health promotion and disease prevention; and health behaviours, such as rates of smoking and rates of breastfeeding (see Berkman et al. 2004 for an overview of these studies).

Higher health literacy has been linked to, for example, knowledge and understanding of such areas as mammography, cervical cancer screening, hospital emergency department discharge instructions, smoking, contraception, HIV, asthma, and post-operative care. Representative studies have found associations between lower literacy and, for example, higher risk of hospitalisation (Baker, Parker & Williams 1998), not having had a Pap smear or mammogram in the past two years, not having a flu injection, higher rates of depression in various populations (Berkman et al. 2004), and inability to understand and comply with the use of prescription drugs (Williams et al. 1995).

Tools for assessing functional health literacy are available, and have been relatively widely used. The best known are the Rapid Estimate of Adult Literacy in Medicine, the Test of Functional Health Literacy in Adults (or S-TOHFLA, a shortened version of the test), and the Wide Range Achievement Test. However, the measures have some acknowledged limitations and they have not yet been validated in a variety of cultural and social contexts. There are other important issues in the use of such tools, such as the context and ways in which they are administered and their potential negative impacts on people's self-esteem.

Rudd, Kirsch and Yamamoto (2004) attempted to measure population levels of health literacy. Using data from the United States National Adult Literacy Survey and the International Adult Literacy Survey, they constructed a Health Activities Literacy Scale with five levels of literacy-

related skills. They found marked differences in health literacy scores based on adults' educational attainment, race/ethnicity, age, health status, income/poverty status, and levels of civic engagement.

The studies reviewed illustrate a variety of methodologies and some breadth and depth of coverage. Nevertheless, some methodological issues remain to be solved. There is, as yet, no universally accepted definition of health literacy, and there is currently no instrument to adequately assess health literacy beyond the purely functional. The high cost of studies is an important consideration, especially studies which involve face-to-face interviews to measure individuals' literacy levels and to collect data on the outcome in question. Some of the identified impacts of health literacy are based on the knowledge and behaviour of individuals in the research sample rather than on actual health outcomes. We did not identify studies to date which have valued the benefits of improving health literacy or conducted a cost-benefit analysis of investing in health literacy. The extent to which findings can be generalised across different populations and different environments also needs further investigation. Some studies (for example, Gillis & Quigley 2004) suggest that there are particular costs of poor health literacy in a rural environment.

Most attention has been paid to literacy and aspects of physical health or specific health issues such as asthma or diabetes, although the literature does include references to 'mental health literacy' and 'depression literacy', broadly defined as knowledge, understanding and beliefs about mental health (Department of Health and Aged Care Australia 2000).

Financial literacy

Financial literacy is a broad concept. It fits with broader notions of literacy than the purely functional skills needed to read and understand financial information. Of the reports that have formally defined financial literacy, Jacob, Hudson and Bush (2000) refer to:

... personal financial knowledge and skills ... Financial literacy involves the ability to understand financial terms and concepts and to translate that knowledge skillfully into behaviour (p.15). Literacy implies knowledge of the terms, practices, laws, rights, social norms, and attitudes needed to understand and perform ... vital financial tasks. It also includes the fact that being able to read and apply basic math skills is essential to making wise financial choices. (Jacob, Hudson and Bush 2000, p.8)

Financial literacy has become an issue of increasing interest in Australia, the United States and the United Kingdom. As Senator Helen Coonan notes: 'Improved consumer and financial literacy has the potential to save Australia and Australians millions of dollars each year' (Consumer and Financial Literacy Taskforce 2004, p.1).

Technology and market innovation in the financial services sector, alongside demographic and labour market changes have led to an increasingly complex financial environment in which people have to conduct their daily lives and make financial decisions.

The ANZ Survey of Adult Financial Literacy in Australia (Roy Morgan Research 2003) defined financial literacy as 'the ability to make informed judgements and to [make] effective decisions regarding the use and management of money' (p.2). This definition was adopted from Schagen's (1997) United Kingdom report for the National Foundation for Education Research with a view to international consistency.

Nevertheless, problems of definition and a well-established framework for financial literacy remain. Some argue that it should be seen as an essential life skill (for example, National Institute of Adult and Community Education 2002). The place of numeracy in relation to financial literacy is not well defined. However, it is clear that most definitions incorporate elements of numeracy.

In Australia, research for the ANZ Bank (Roy Morgan Research 2003) and for the Commonwealth Bank (Commonwealth Bank Foundation 2005) surveyed financial literacy levels within the

population, while the Consumer and Financial Literacy Taskforce (Commonwealth of Australia 2004) modelled the effects of 'bad' financial decision-making over the course of a person's life.

The Commonwealth Bank Foundation's (2005) study is notable for modelling the effects of improving financial literacy levels on individuals and the economy. The modelled increase was a relatively modest target; that is, improving the scores of the 10% of the population with the lowest levels of financial literacy on the financial literacy questionnaire, over a period of ten years. It was estimated that this would increase the average annual income of people with the lowest 10% of scores by \$3204, increase Australia's gross domestic product by \$6 billion, and create 16 000 new jobs. It was also estimated that improving the financial literacy of this group would reduce the incidence of persistent sleeping difficulty among the Australian population by 2% and the incidence of regular smoking by 2%.

In terms of the international literature, a number of studies from the United States have examined the costs to employers of employees' inadequate financial literacy, poor financial behaviours and associated financial stress. Employees' stress related to personal financial matters has been linked to lower levels of job productivity and higher rates of absenteeism (Garman, Leech & Grable 1996; Garman et al. 1999; Joo & Garman 1998) and negative impacts on employees' health (Garman et al. 1999). It stands to reason that financial stress is related to financial literacy, as one of the reasons for personal financial problems and associated poor financial behaviours is a lack of understanding of how to manage personal finances (Joo & Garman 1998). However, to date there has been no research to illustrate how financial literacy and financial stress are linked and to tease out the relationship with low levels of income.

A relatively large number of studies from the United States have attempted to measure the benefits of improved levels of adult financial literacy gained through work-based financial education programs, or those provided by banks and lenders, and through high school-based programs. Benefits reported included lower default rates on loans for people who had received financial 'counselling' (Hirad & Zorn 2001), higher rates of saving (Bernheim & Garrett 1996; Bernheim, Garrett & Maki 1997 cited in Jacob, Hudson & Bush 2000; Thaler & Bernartzi 2001) and greater levels of satisfaction with personal finances (Garman et al. 1999). A few studies extended this to look at the savings and return on investment to employers of investing in work-based financial literacy programs (Garman 1998; Joo & Garman 1998).

Nevertheless, there are a number of important measurement issues that remain to be addressed. These include accounting for the interaction between financial literacy and low income (for example, lack of income/ease of budgeting—rather than low income—forcing people to choose the more expensive payment option for electricity (Adult Financial Literacy Advisory Group 2000). Also important are the influences of attitudinal, psychological and 'lifestyle' factors and different life stages. More robust approaches to measuring the benefits of investing in financial education, including the utilisation of pre- and post-test designs, together with the use of control groups who do not receive financial education (Kim 2004), would also be welcome.

Other areas where current research is limited are: the relationship between the financial literacy levels of employees and general literacy and numeracy skills and their impact on employees and employers; and the impact of financial literacy levels on physical and mental health. Research relating to costs and benefits focuses substantially on those who are employed, with few studies which explore in detail the costs and benefits of financial literacy for unemployed people.

Business and employers

There is a sizeable literature that demonstrates the returns to employers of investing in workforce training generally (that is, improvements in firm productivity and, in some cases, higher levels of innovation and/or better financial performance). However, studies that focus on the costs and benefits of literacy or numeracy are far fewer.

Methodologies used to measure the benefits of improving literacy and numeracy amongst the workforce have typically focused on cost savings and/or productivity gains to the company (see Ananiadou, Jenkins & Wolf 2003), although one or two studies (for example, Krueger & Rouse 1998) looked more widely, and included employee-focused outcomes, such as levels of promotion and rates of absenteeism. Finding an effective and acceptable balance between ideal methodologies based on large datasets (panel data are the most ideal) and achievable methodologies based on availability of data and costs of new data collection is an important consideration.

Relatively few studies include measures of factors that impact directly on employees and also indirectly influence company profits; that is, employees' job satisfaction, internal promotion, absenteeism, access and take-up of further training and education.

Studies suggest that the larger companies are making the most investment in work-based training in this area (for example, Spilsbury 2002 cited in Ananiadou, Jenkins & Wolf 2003).

The literature search did not identify any directly relevant studies examining the costs and benefits of literacy and numeracy to small business (employers and employees). However, there is a growing interest in the area. Some of the methodologies used in examining larger enterprises are likely to be useful, although our consultations suggested that the small business sector differs in significant ways from larger enterprises. These differences need to be taken into account. Flexible and multiple approaches are likely to be most useful for examining the impacts for small business.

A United Kingdom study (Atkin & Marchant 2004) suggested that most small business employers are largely unaware of poor literacy and numeracy skills. We would suggest, however, that small business, which includes self-employed individuals, is an area where costs and benefits of literacy and numeracy are very important.

In Australia, while workplace education and the skills of workers have received considerable attention, the most directly relevant study is that by Pearson (1996). He 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; and the value of training (which included issues such as worker morale, confidence to communicate etc.). The study included respondents' quantitative estimates of savings to their companies based on the positive impacts identified.

Other areas of interest

Family literacy

The term 'family literacy' refers to the diverse uses of literacy within homes and communities and has been widely adopted to cover a range of meanings. It draws on the interactions between individuals in the home, school and community and covers adult literacy education, child literacy education, early childhood development, cognitive psychology and parent education. Family literacy programs are usually collaborative interventions between providers of early childhood education, adult basic education or parenting education.

To date, there have been no research studies that have measured the costs of poor family literacy, although some studies (Parsons & Bynner 2002; Hobcraft 1998) have examined the issue of poor literacy in children and teenagers and linked it with a number of adverse outcomes as adults.

There is a fairly large number of studies which have measured the benefits to adults and/or children from participating in family learning programs. Many of the measures used to assess benefits have focused on outcomes such as changes in confidence and attitudes towards literacy and learning by adults and children, or on reading gains (Brooks et al. 1996; Brooks et al. 1997).

A number of evaluations, both national and local, of the United States Even Start family literacy program have been carried out, with the most recent by St Pierre et al. (2003). The evaluation employed a pre- and post-test control group design with random allocation of families to either the Even Start group (treatment group) or the control group. The study found that Even Start children and parents made small gains on literacy measures (Peabody Individual Achievement Test), but no more than the control group (about one-third of the control group received early childhood education or adult education services). It should be noted that the findings of this study have been the subject of intense debate.

Many of the proclaimed benefits for family literacy; that is, improved educational attainment for children and educational and employment gains for parents, can only reliably be measured over time, once the benefits of participating in family literacy programs have had time to take effect. Therefore, longitudinal studies should ideally be employed in order to accurately and fully measure the benefits of participation. Such studies should also ideally use a comparative or control group in order to accurately measure the impact of the intervention and avoid bias.

Studies of this type have been carried out on programs that share many of the aims of family literacy (for example, supporting parents in helping their children to learn and also to address their own educational needs), but which have wider objectives than family literacy programs. All of the studies recorded benefits, ranging from reductions in criminal justice system expenditures (Reynolds et al. 2001) to improved socioeconomic status of parents (Sylva, Evangelou & Brooks 2004) and greater progress by children in vocabulary, language comprehension and self-esteem (Evangelou & Sylva 2003).

However, longitudinal cohort studies are relatively expensive and require established family literacy programs to be in place to enable sufficient number of participants to be identified and followed up. These types of programs do not generally exist yet within Australia.

Crime

A number of studies investigating the impact of poor literacy on crime were found. On the whole, however, this is an under-researched area which involves some difficult conceptual and methodological issues, especially in relation to measuring costs and benefits associated with literacy and numeracy. For instance, data to adequately assess benefits and costs are rarely available. Complex interactions between gender, socioeconomic background, culture, race and age—which may affect whether individuals engage in criminal activity—make it difficult to measure the effects of literacy. Whether individuals committing illegal activities are caught, charged and sent to prison may depend on a range of diverse factors, including level of police activity and availability, community attitudes and government policies. Such factors affect the reliability of data on what activities get recorded as ‘crime’. Finally, a statistical correlation between poor literacy and committing a crime does not necessarily indicate a causal relationship.

Most studies have focused on education levels and crime rather than on literacy and numeracy as such. The basic relationship between poor education and crime (see, for example, the studies quoted in Parsons 2002) and between learning and crime reduction is quite strong. In the United Kingdom, surveys of prison inmates indicate a higher percentage of inmates with poor basic skills (literacy and numeracy) than in the general population, although there is considerable variation in basic skill levels amongst inmates. On the other hand, Black, Rouse and Wickert (1990) found that prisoners in two New South Wales prisons performed better on some document literacy tasks than did the general public and less well on others. There were differences also between male and female prisoners. Black (undated) suggests that, rather than focus on differences between the literacy levels of those inside and those outside prisons, the more important issue is how prisoners manage the literacy practices that are important in their lives.

Parsons (2002) analysed responses to a series of questions asked when participants in the United Kingdom National Child Development Study and the 1970 British Cohort Study were re-interviewed

in 1999 and 2000. Results were analysed against the literacy and numeracy skills of a 10% sample of participants whose skills had been assessed at an earlier time. It was found that poor literacy or numeracy skills significantly increased the risk of being stopped and questioned by police on a repeated basis (Parsons 2002), that is, literacy and numeracy had an independent impact on being stopped and questioned even after the effect of other risk factors such as poor educational qualifications and disadvantaged family background were taken into account.

Davis et al. (1999) in the United States found that adolescents in a low-income neighbourhood with below-grade reading skills (two grades or more) had higher rates of self-reported violent behaviours compared with those reading at grade level. When gender, race, and age were controlled for, adolescents reading below grade level were significantly more likely to report carrying weapons, to have been in a physical fight at school, and to have been in a physical fight resulting in injuries requiring treatment. In addition, youths reading below grade level were significantly more likely to be threatened at school with a weapon.

Feinstein (2002) examined studies which investigated quantitative estimates of the crime reduction benefits of academic and vocational training. The author notes a number of caveats regarding the research, which used estimation techniques and required a great many assumptions, although considerable care was used in linking disparate results from different datasets. Key findings are summarised below.

- ✧ A United States study concluded that a ten-percentage point rise in the rate of high school graduation would cut the murder (arrest) rate by between 14 and 17% and a one-percentage point increase in the graduation rate would lead to a reduction in crime of between 34 000 and 68 000 offences, with a social benefit of between US\$0.9 billion to US\$1.9 billion.
- ✧ A United Kingdom study found that a 10% rise in the average pay of those on low pay in an area reduces the overall property crime rate by between 0.7% and 1.0%, estimated to provide a benefit between £1.3 and £1.8 billion in an average year over the period 1975–96.
- ✧ There is evidence of a link between learning, wage effects and the reduction of crime. Feinstein (2002) examined the relation between year-to-year changes in wages and the crime rate using the area data of the United Kingdom study above. Estimated financial savings in regard to property crime, if 1% of the working-age population who had no (or low) qualifications were to achieve one O level, are of the order of between £10 and £320 million per year.
- ✧ Evidence from Canada (Porporino & Robinson 1992 cited in Feinstein 2002) supports the importance of basic education in reducing recidivism. The provision of employment opportunities for people leaving prison is one of the most effective means of reducing recidivism and reducing crime. Poor literacy and numeracy make it less likely that people leaving prison will find employment. However, there are many other factors which compound the difficulties ex-prisoners face, including the attitude of employers.

A number of United States studies have shown the benefits of educating prisoners, most of whom are known to have low levels of literacy (for example, Hull et al. 2000; Steurer, Smith & Tracy 2001 cited in ProLiteracy America 2003). Most education in United States prisons is targeted towards low literacy students (ProLiteracy America 2003), so while studies have measured participation in education rather than literacy classes, the methodologies and the findings can also be applied to the benefits of improving prisoners' literacy levels.

In summary, the few studies reviewed which have focused on literacy and numeracy are promising. They show benefits including decreased recidivism, economic gain to the community, and decreased individual costs (such as a reduced likelihood of being picked up repeatedly by the police).

Social capital

The widespread interest in social capital, evident over the past couple of decades, is not yet widely reflected in the 'costs and benefits' literature.

The main aspects of social capital that are linked to higher levels of literacy (or to individuals' increased levels of literacy) are increased social and community participation. ProLiteracy America (2003) cites a number of studies which have found that participation in adult literacy programs leads to an increase in social and community participation. Students in adult literacy classes across four different adult basic education systems in the United States reported increases in their participation in community organisations (Greenleigh Associates cited in Beder 1999). (The percentage claiming that they had participated in community organisations increased from 12% of students at the start of the course to 31% six months later.) Increases in voter registration, involvement in social/sports activities and involvement in parent–teacher association activities have also been reported by students one year after entering an adult literacy program (Bingman, Ebert & Smith 1999).

Other studies concerned with the benefits of adult learning rather than with literacy as such illustrate possible approaches to exploring social capital benefits and costs in relation to literacy and numeracy. A study which used data from the United Kingdom National Child Development Survey (Bynner & Hammond in Schuller et al. 2004) found that taking one or two adult courses between the ages of 33 and 42, as opposed to taking no such courses, increased race tolerance, reduced political cynicism, resulted in less authoritarian attitudes, heightened political interest, increased take-up in membership of organisations and increased the tendency to vote in the 1997 election compared with the 1987 election, in each case to a statistically significant degree. The study used multivariate analysis to control for potentially confounding variables.

In Australia, recent research is extending understanding of the contribution of adult learning and literacy learning to social capital and personal identity (for example, Falk, Golding & Balatti 2000; Falk 2001). Over the past three to four years, and in response to increasing interest in social capital, the Australian Bureau of Statistics (ABS) has developed a Social Capital Framework to describe the range of aspects of social capital; developed a range of indicators that relate to the ABS Framework; and released a series of Indicators of Community which present data relating to social capital from existing ABS data sources (ABS 2004). In the near future, there is likely to be more use of the ABS data and incorporation of common items regarding social capital in a range of studies. Eventually, this may contribute to a better understanding of the contribution of literacy to social capital and allow some estimate of associated benefits and costs in the area. In the meantime, Australia is including some proxy measures for social capital in the background information of participants in the 2006 Adult Literacy and Lifeskills Survey, which may well help illuminate the relationship between literacy and social capital.

Older people

There are costs and benefits associated with literacy and numeracy for adults of all ages. However, the demographic shift towards an ageing population, and cohort effects for the present generation of older people make many of the literacy-related domains discussed above especially relevant for older people. For example, older people are more likely to have a range of health-related issues and to be taking medication. Overall, the age group has had less schooling than younger people and they are less likely than younger people to take part in adult education. Poor literacy is one of the barriers for older disadvantaged workers in Australia wanting to return to the workforce after unemployment, redundancy or industry re-adjustment (Swinburne University of Technology, Business, Work and Ageing 2004). Technological developments also require an increasing level of literacy skills in daily life, putting seniors with low levels of literacy at risk.

Those aged over 50 years scored significantly lower than adults under 50 years on all of the three literacy scales (prose, document and quantitative) in the International Adult Literacy Survey. Nevertheless, literacy proficiency of older people varies considerably, with lower educational attainment, being poor, being unemployed or not in the labour force, and having a first language other than English, associated with low levels of literacy and numeracy.

Relevant studies relating to costs and benefits tend to focus on the costs of poor literacy in such areas as health. While we found no direct estimations of the benefits and costs of literacy for older people, Roberts and Fawcett (1998) used Canadian data from the International Adult Literacy Survey to examine variations in literacy skills and practices and in patterns of information acquisition among seniors (for example, their use of books, television and newspapers) by selected socioeconomic variables. The authors point out that this is not a direct test of the linkage between literacy and health status; rather, they correlate and compare the health-related characteristics of seniors with their literacy skills and practices.

They found that it is not only the frequency of various activities such as reading books, newspapers and viewing television, but also the variety of literacy sources that is important for maintaining literacy proficiency. This has implications for their exposure to health-related information. Low-literacy seniors also require more assistance with literacy tasks (as measured by the International Adult Literacy Survey), and they tend to over-estimate their literacy skills. Again, this has implications for access to information in a range of areas.

The tendency for some people with poor literacy to cope by avoiding certain situations and by relying on others is reflected in a qualitative study by Van der Kamp and Boudard (2003). They found that, while the majority of their sample of older adults with poor literacy did not experience difficulties related to literacy, more than half were keen to avoid situations in which literacy was needed. They coped by avoidance, by relying on relatives and acquaintances. They sought information in other ways and looked for alternatives; for example, going to a bank counter rather than using an automatic teller machine. Although many cope well, some are vulnerable, especially those at risk of losing their job or being socially excluded because of their low level of literacy skills. This is especially the case for older women. The study also found that older people tend to see literacy in gender-related ways, ascribing different literacy tasks to men and to women.

Indigenous Australians

While no studies have attempted to directly estimate the benefits of improved literacy and the impact of poor literacy on Aboriginal populations in Australia, there is a wealth of information about the educational disadvantages experienced by the Aboriginal population as a whole and by particular groups within it; for example, those living in remote areas and in some urban areas. Key areas of focus are education and health, areas very relevant for the present project. There are also many descriptions of community programs that have an element of learning, including literacy and numeracy learning, which have been shown to have some benefit for Indigenous individuals, families and communities.

The social rate of return from greater investment in education for Indigenous Australians has been estimated by Junankar and Liu (2003). While the focus is clearly broader than literacy and numeracy, the emphasis on social as well as economic benefits, the social areas included, and the recognition of cumulative and flow-on effects parallels many of the issues discussed in relation to literacy costs and benefits. The study also included a comparison of estimates of the social rate of return for investing in education for Indigenous Australians and non-Indigenous Australians, and concluded that the social rate of return was greater for Indigenous Australians.

In addition to the benefits to the economy and individuals gained through higher employment, the authors argue that improved education would lead to better nutrition, better living conditions, better access to health services and hence to a longer and healthier life. In turn, this would lead to higher productivity and higher incomes over a longer period of time. Junankar and Liu (2003) also argue that rates of imprisonment would be greatly reduced, which further enhances the greater social rate of return on investment for Indigenous Australians. Private and social rates of return from education were estimated using data from the 1991 Australian Census to determine the likely earnings of a person with differing levels of education and work experience at different ages. For Indigenous persons, Junankar and Liu (2003) allowed education to extend the working life and reduce the possibility of being imprisoned. The impact of parents' poor English literacy levels is

thought to be particularly important amongst the environmental and social factors contributing to the learning difficulties and poor literacy of Aboriginal children (Commonwealth of Australia 2000).

Assessing and measuring benefits and costs of literacy and numeracy in relation to Indigenous populations is not a straightforward issue; nor should all communities be regarded in the same way. There is growing acknowledgment of the careful balance that needs to be maintained between Indigenous cultural values, community control and the development of literate and skilled adults in local communities (Kral & Falk 2004). Kral and Falk's study of a remote community concluded that literacy is only relevant if it is linked in a useful way to the prescribed roles and responsibilities in the community. More generally, the learning environment for Aboriginal students needs to be culturally affirming of, and appropriate to, their interests, learning style, perspectives, values and identity. Standard Australian English should be viewed as a second language for some Indigenous adults (Aboriginal and Torres Strait Islander Commission 2002).

Australian context and possibilities

Health literacy, consumer and financial literacy, and literacy in small business were areas selected for consultation and further development. These were selected because of the robustness of existing international (and in some cases, Australian) research, the range of methodologies available, and a preliminary assessment of the existing and potential interest in these areas in Australia.

Consultations were undertaken with a small number of informants in each of the following groups:

- ✧ people with expertise and/or interest in health literacy, financial literacy, and small business
- ✧ people with expertise in economic modelling
- ✧ people who have knowledge of relevant longitudinal studies in Australia.

The second and third groups were included because the use of advanced statistical analysis on large datasets, including longitudinal surveys, was relatively common in the literature reviewed. (A brief overview of relevant Australian longitudinal studies is included in appendix D.)

A general framework was used for the consultations (see appendix B). However, discussion was exploratory and free-ranging, allowing many of the complexities, challenges and constraints of research related to the costs and benefits of literacy to be articulated. During the consultations, we became a little more knowledgeable about each other's concepts and language and where the meeting points might be. We are mindful that the consultations (involving as they did people whose work is situated in different conceptual frameworks) mirrored in some respects the engagement across disciplines that we believe is necessary to further research into the costs and benefits of multiple literacies. The people we spoke to had very diverse perspectives on literacy and numeracy; they came from a variety of employment environments (see appendix C). Figgis (2004) noted the initial difficulties of talking to people in other sectors about how literacy might relate to their working environments. It should be noted that the consultations were intended to provide an indication of possibilities. Wider consultation and discussion are needed to identify future research topics in this area.

Health literacy

The current environment and possibilities

Health literacy has not received the same attention in Australia as in some other countries. Signs of the convergence of interest between literacy and health professionals noted by Shohet (2004) in the previous chapter are not yet evident. Relevant research is in the early stages in Australia. Some studies have investigated the impacts of poor social and economic background on health, and there is a reasonable body of literature on multicultural health, but very little attention to poor literacy, and especially to the more complicated areas, including costs and benefits.

Nevertheless, there is evidence of increasing interest. Buchbinder et al. (2001) have investigated the readability of patient information used by Australian rheumatologists. Griffin, McKenna and Tooth (2003) have examined written health education material in the area of occupational therapy. Health literacy is being recognised as a factor which predisposes people to participate in screening programs. Most existing research has focused on functional health literacy. However, there have also been attempts to explore issues beyond functional literacy, to view communication between

health professionals and patients more broadly to take account of patients' understandings, expectations, beliefs and anticipations about the interaction, and to explore the 'cultural competencies' of those involved.

The consultations suggested that an increased focus on health literacy in Australia is timely. They highlighted the following trends in health care that underline the importance of health literacy and have implications for social and economic costs and benefits.

- ✧ Individuals are being encouraged to take a greater part in the management of chronic conditions such as asthma, diabetes and rheumatoid arthritis, which are an increasingly large part of the health care budget and will continue to be so, in light of an ageing population. Collaborative management between health professionals and patients, and self-management approaches are being trialled and encouraged. Self-management aims to give people as much control as possible by providing them with problem-solving skills to make appropriate decisions, as well as knowledge about their condition.
- ✧ Screening programs to identify people at risk or with early symptoms of various conditions are increasingly being used as preventative health measures. Health literacy is important at every stage of the process—knowing about the existence of the screening program, understanding the implications of taking part or not, and making decisions on the basis of the screening results.
- ✧ 'Decision aids' are increasingly being used to help people make decisions about treatment options. They are designed to clarify values and to indicate the benefits and risks of health choices (often using graphs and other visual information) to help people make decisions about, for example, medication options or surgical intervention. A meta-analysis of research on decision aids showed that they are effective (O'Connor et al. 2002). However, at present, most decision aids are dependent on relatively high levels of literacy. For this report we consulted health professionals who are investigating ways of making decision aids more accessible to people with poor literacy skills.
- ✧ There are indications that the internet is increasingly being used for health-related information and for self-diagnosis. The relationship between information technology literacy and the capacity to seek out such information is obvious.
- ✧ More broadly, whatever the particular focus, most health education and information material relies heavily on written information.

Most research supported by the National Health and Medical Research Council (the national body responsible for fostering health and medical research in Australia) is investigator-initiated. Gaining funding is highly competitive. As health literacy does not as yet have a high profile in Australia, very little relevant research has been funded. Nevertheless, equity is a priority issue for the National Health and Medical Research Council. There is also potential for collaborative research on health literacy issues under the Health Services Research Program, which supports multi-disciplinary research into how various factors, including social factors, affect availability of and access to health care.

It is worth noting government and research interest in 'mental health literacy'. Researchers at the Centre for Mental Health Research at the Australian National University have used the term for some years and it is used in the National Action Plan for Depression (Department of Health and Aged Care [Australia] 2000).

Existing data sources

Health surveys

The literature review underlined the usefulness of regular general health surveys and longitudinal surveys in particular. This therefore became the focus of a number of the consultations. Although an exhaustive search of the literature cannot be claimed, the review did not identify a large number of appropriate datasets.

- ✧ The ABS occasionally carries out health-related surveys. The National Health Survey was most recently carried out in 2001 (ABS 2002a). A national survey of the Mental Health and Wellbeing of Adults (ABS 1997b) was carried out in 1997. Given that the ABS is involved in the 2006 Adult Literacy and Lifeskills Survey, it might be worthwhile exploring any potential for links between the surveys (assuming the ABS plans to repeat the health surveys), or to explore the potential to add literacy and numeracy as variables to the health surveys.
- ✧ The National Public Health Partnership, whose task it is to identify and develop strategic and integrated responses to public health in Australia, and the Australian Health Ministers Advisory Council facilitates regular health surveys in each of the states. It is currently not possible to buy into the surveys, which are tailored towards its major stakeholders, the public health authorities. On the surface, however, such surveys seem to have some potential for measuring costs and benefits.
- ✧ Since 1966, residents of Busselton in Western Australia have been involved in a series of health surveys, including cross-sectional, whole-population health surveys; continuing follow-up of cross-sectional survey participants; collection of sera and DNA samples; and compilation of information on family relationships between survey participants. Education-level data have been collected in several surveys. Enquiries suggest that it may be possible to buy into future surveys.
- ✧ The Australian Temperament Project has collected data for over 20 years from a large cohort of children born in Victoria in the early 1980s. Data from the cohort of adults have been collected on variables related to mental and physical health, including depression, anxiety and stress, and legal and illegal drug use. The Australian Institute of Family Studies, which manages the study, hopes to continue to follow the progress of the cohort through their 20s. Initial discussions suggest that it might be possible to buy into the Australian Temperament Project by surveying the literacy and numeracy levels of a sub-sample of the cohort. Previous collaborative projects have involved a partnership arrangement with the Australian Institute of Family Studies, but with the institute carrying out the analysis of data. (See appendix D for further information on longitudinal studies.)

Small-study approaches to assessing costs and benefits

The consultations suggested that smaller research projects are also useful in providing evidence of costs and benefits. An informant discussed using health literacy as a screening tool to improve communication between health professionals and patients, particularly where education programs are routinely linked to treatment. Screening pregnant women for literacy has already been trialled, in order to give quick feedback to professionals to enable them to tailor childbirth education to individual needs.

There is a wealth of general health-related information in Australia, some of which could be linked to health literacy. Measurement of costs could include Medicare data, the use of prescriptions for various medications, hospitalisations, surgery, and visits to health professionals.

Taking research forward

If research into benefits and costs associated with health literacy is to move forward, health literacy needs a higher profile in Australia. This is particularly in regard to the individual and social impacts that interact with and compound other perhaps more readily understood disadvantages (such as low income and poor educational levels). A great deal of work has been undertaken in Australia which is compatible with a health literacy approach. Health promotion is quite well developed, with programs such as child birth, HIV, asthma and diabetes education. However, these initiatives are not normally spoken about in terms of health literacy and its importance amongst both health professionals and policy-makers is not yet well recognised.

In the consultations, some conceptual confusion was noted between low literacy amongst English language speakers and people from diverse linguistic and cultural backgrounds, many of whom are literate in their own language. The two are related but they require different responses.

The following requirements for future research were identified in the consultations:

- ✧ a campaign to raise the profile of health literacy amongst the medical profession and policy-makers
- ✧ accurate information about literacy levels in the population
- ✧ a health literacy tool or tools, validated for Australia and reliable over time
- ✧ better understanding, through research, about whether literacy and health literacy are the 'same', whether health literacy is more than merely the capacity to learn, and the extent to which it can be improved
- ✧ better understanding of who uses the internet for health information, how they use the information gained, and the relationship between internet-accessed and other sources of information
- ✧ much better understanding of different 'levels' of health literacy and consistency in the use of different levels in research undertakings
- ✧ capacity-building within the research community to increase the research base and expertise.

In relation to the last point, it is worth noting that research which quantified the costs of poor literacy or the benefits of improving health literacy would help in a campaign to raise the profile of health literacy. Yet, a higher profile may be required before such research is funded.

Financial literacy

The current environment and possibilities

There is clearly increased interest in financial literacy in Australia from government, financial institutions, financial regulatory bodies and a range of other organisations and groups. This has been driven largely by concerns about people's capacity to manage their financial futures in a deregulated financial environment. Specific concerns include rising levels of household, credit card and other debt, and the adequacy of financial advice about superannuation choices. The Consumer and Financial Literacy Foundation is being established during 2005 to implement a national strategy for improving consumer and financial literacy. Its establishment follows the report of the Consumer and Financial Literacy Taskforce.

Data sources

Two studies auspiced by leading banks have measured the levels of financial literacy of the Australian population. The ANZ study (Roy Morgan Research 2003) focused solely on providing information about levels of financial literacy, while the Commonwealth Bank Foundation (2005) study also modelled individual and broader economic benefits of improving financial literacy, the latter using the MONASH model.⁴ It should be noted that the ANZ study is to be repeated every two years and in the future will include some attitudinal aspects.

The Australian Financial Wellbeing Scale is a survey instrument being developed by Money Solutions, an Australian provider of money education and guidance programs. The Australian Financial Wellbeing Scale is based on research by Garman and others (for example, Garman, Leech & Grable 1996; Garman et al. 1999; Joo & Garman 1998) in the United States and seeks to explore the relationship between employees' financial wellbeing, financial education, and outcomes for employees and employers, the latter being measured in terms of a return on investment. Money Solutions has not yet published the results of its research but will promote its findings once it has a sufficient sample of employees and employers.

⁴ The MONASH model is a computable general equilibrium model of the Australian economy which has been used to analyse many economic policies, scenarios and changes in taxes and environmental regulations.

The ANZ Bank is also funding research into its financial education programs (for example, Russell, Fredline & Nair 2005). Research is also underway into the Moneyminded financial education program. In addition, research commissioned by ANZ (Chant Link and Associates 2004) found that around 6% of adults have minimal financial access, owning only a transaction account, and that factors causing long-term financial exclusion included financial illiteracy, learned behaviour that led to problems with credit and savings and intergenerational exclusion (that is, exclusion from forms of financial participation that are perpetuated from one generation to the next).

Taking research forward

Currently, there are two main strands of research into financial literacy within Australia. One focused on measuring literacy levels of the general population and associated impacts; and the other, an emerging strand on the impact of financial literacy within the workplace. Several issues raised during the consultations in relation to the effective measurement of costs and/or benefits apply across both of these areas.

Definitions and methods of measuring financial literacy need refinement

Both the ANZ survey (Roy Morgan Research 2003) and the Commonwealth Bank Foundation (2005) survey adopted the United Kingdom National Foundation for Education Research definition of financial literacy, that is, ‘the ability to make informed judgements and to [make] effective decisions regarding the use and management of money’ (Schagen 1997, p.18). This definition seeks to encompass understanding of financial matters and the ability to take action rather than simply possess knowledge of financial issues. However, some people consulted considered that both studies were somewhat limited in their ability to measure real levels of understanding, despite their adoption of the above definition. There was believed to be a gap between what the superannuation industry was saying about Australian’s poor knowledge and understanding of financial issues and what the surveys were showing. One respondent advocated a much more sophisticated measurement of financial literacy which encompassed people’s confidence in dealing with financial matters and measured their level of understanding and active management of their finances.

Consultations highlighted that how people felt about their level of financial knowledge and their financial position was related to measurement of costs and benefits. United States research has shown that people experience ‘financial stress’ because of their inability to understand and effectively manage their finances, which leads to costs for individuals, families and their employers. Informants pointed out that even though people may take action, for example, by consulting a financial adviser, their levels of anxiety and confusion often remain high. Therefore, it is important that methods of assessing costs and benefits include how people feel about their financial situation, knowledge and skills, as well as measuring levels of active management.

Understanding the costs (and benefits)

Informants generally acknowledged that more understanding of financial literacy and its impacts are required. Aspects such as the need for people to understand superannuation are widely recognised as important. However, there is insufficient understanding of, for example, the scope of individual and social costs for those employed and those not employed, the determinants of poor financial literacy, and the effects that government regulations and the financial services industry itself have on people’s capacity to understand and manage their finances.

Although some of the reported research identifies specific age groups (such as young people and older people) as most at risk, there is still much to be understood about different costs and benefits related to gender, race and age.

At least some of the assumed costs seem to be based on anecdotal evidence and largely untested assumptions. For example, one informant commented that the belief that young people are running up high levels of mobile phone debt because of a lack of financial knowledge was based on

assumption only. The informant pointed out that, while there was no systematic study of young people's knowledge or attitudes in this regard, preliminary findings from research underway suggests that young people are quite widely informed about various pricing options etc. and are often more financially literate than older people.

Personality differences (for example, propensity to take risks) may also play a part in understanding different levels of financial literacy and associated costs and benefits. One respondent thought that, in many instances, it was differences in life experiences, that is, whether people had experienced a 'tipping point', which encouraged people to get a handle on financial issues and to start actively managing their finances.

The same respondent noted that the link between an individual's level of financial literacy and mental and physical health and social wellbeing is not sufficiently understood. This view is supported by the Commonwealth Bank Foundation (2005) survey finding that lower financial literacy levels were associated with a higher incidence of persistent sleeplessness and a higher propensity to smoke. A survey by Relationships Australia (2003) which found that financial difficulties/insecurities was the fourth most common issue negatively affecting relationships also supports the view that the full range of costs associated with poor financial literacy levels is not fully understood.

The consultations suggested that costs and benefits for unemployed people may differ from those for employed people. For example, a better understanding is required of the ways in which poor financial literacy (as well as other forms of literacy) impacts on people dependent on welfare payments, especially their understanding of the implications of being on (or off) certain benefits.

Assessing financial literacy

Informants identified the following issues for consideration in assessing financial literacy:

- ✧ improving the comprehensiveness of existing measures by including some of the issues highlighted above. There are, however, practical issues about the length of interviews or surveys, if measures of behaviour and attitudes, as well as knowledge, are included
- ✧ the role of attitudinal and personality factors and the gap between knowledge and behaviour. Individuals may not make the 'best' or most effective decisions for a whole range of attitudinal reasons and psychological factors (such as confidence and the propensity to take risks) and because of their particular life circumstances
- ✧ better understanding of the interaction between financial literacy, psychological and physical health and social wellbeing
- ✧ the ways in which notions of financial literacy are situated within a system of financial services. (An informant gave the example of a young person buying a car. This person may be quite skilled in finding out and understanding price options of different vehicles and models and how trade-ins work, so is able to decide the best buy for their needs. However, if the young person needs finance to buy the car, they are in fact buying a financial service as well as a car, which brings with it the need for additional knowledge and a different type of understanding.)

Small business

The current environment

There were just over 1.2 million non-agricultural small private sector businesses in Australia in 2001; 81% employed 0–4 people and almost 15% employed 5–19 people. They constituted 96% of all firms in the country and employed 3.2 million people, about 47% of all jobs provided by private sector businesses in Australia (Schaper & Volery 2002, p 86). Common sense suggests that the costs of poor literacy for medium and large businesses, such as lowered productivity, reduced profits, employee absenteeism, increased rates of work accidents will similarly be costs for small

businesses. At the same time, an informant noted that some of the realities of small business are counter-intuitive. Making assumptions about small businesses based on what is known about larger businesses can lead to some wrong conclusions. Specific research concerning literacy and numeracy and small business is required.

Costs and benefits to small business associated with literacy are largely unknown. Nevertheless, there is some evidence of increasing interest in the area. The specific objectives of the Adult Literacy National Project administered by the Department of Education, Science and Training, include improving the client focus of vocational education and training, particularly for individuals and small business. Some academic researchers are working in the area. The Australian Chamber of Commerce and Industry, whose membership includes many small-to-medium businesses, recognises its importance (Balzary 2004). Nevertheless, the level of interest from specific small business organisations is uncertain. Figgis (2004) found that, when she spoke to people in the small business sector, they did not initially see how literacy and numeracy were relevant to them, although they did become interested when they were presented with the issues.

As far as small business owners are concerned, the most common (modal) characteristics are that they are male, born in Australia, work as a tradesperson or a professional, are aged between 30 and 50, have completed a secondary education or trade qualification, have been trading for between one and five years, have not had any formal management training and do not use a business plan (Schaper & Volery 2004 summary from ABS data). However, this modal description does not reveal the great diversity of small business owners and self-employed people in terms of age, cultural background, education and experience. For example, the number of women operating home-based small businesses grew by 17% between November 1999 and June 2001 (Council of Small Business of Australia website 2005).

Little is known of the financial literacy levels of small business owners, although the ANZ survey (Roy Morgan Research 2003) included some indicative information. Financial literacy levels were reported for a series of demographic groups. One group was 'Owners, including small business and farm owners'. Thirteen per cent of people in this category were in the first (the lowest) group; 14% in the second; 19% in the third; 25% in the fourth; and 28% in the fifth (the highest) group. Thus people in the 'owner' group had quite varied levels of financial literacy, and 27% were in the lowest two groups. It is of interest that the profile for 'owners' was quite similar to that for all males, and for 'other white collar', a category that includes white collar occupations other than professionals, owners, sales and semi-professionals.

Another indication comes from the Reading Writing Hotline in Australia. Nearly half of all employed callers to the Hotline worked in a service industry or in construction and property services. Anecdotal reports from Hotline teachers indicated that many of these callers were either employees or were self-employed in the following categories: domestic and commercial cleaning services; security; building trades; and retailing and sales (TAFE Access and General Education Curriculum Centre 2005).

Further anecdotal evidence supports the notion that there are wide variations in general literacy levels and financial literacy amongst small business owners. The demographic information referred to above underlines this diversity, as well as the complexity and range of language, literacy and numeracy skills. As one informant put it, small business owners can include a 'bright' young graduate with a good idea for making money, a recent migrant family running a corner shop, an electrician going out on his own, a retired bank teller who buys a franchise business, a diversifying farming family, and a sole parent who sets up as a contract cleaner.

Data sources

Much of the ABS information on small businesses—general characteristics, summary financial information and the type of demographic information referred to above—is potentially useful for assessing the benefits and costs of literacy and numeracy in relation to small business.

Taking research forward

The consultations suggested that the following factors need to be considered.

Definition of small business

The definition of small business is an important consideration, since it both defines the scope of what is being investigated and contributes to identifying possible indicators. Definitions in Australia are both quantitative and qualitative, as they are in other countries. Quantitative definitions usually include such aspects as the number of staff (if any), the annual sales revenue generated, the dollar value of the assets and the annual level of wages and salaries. Qualitative characteristics include the absence of public negotiability of share ownership, independent ownership and operation, personal guarantees by the owner(s) for any existing or planned financing, and close control and decision-making by the owner(s). Defining small businesses precisely is made difficult by their great diversity of organisation and operation, their pervasiveness across every industry and differences across cultures.

The ABS definition is widely cited. The ABS regards a small business as being independently owned and managed by an individual or a small number of persons. Distinctions are then made according to the number of people working in a business. Micro enterprises are those with fewer than five employees; they also include self-employed people working on their own. Small businesses are those with between five and 19 employees (ABS 2002b).

Scope

There are numerous challenges in specifying and obtaining an adequate sample for research on literacy and numeracy costs and benefits. The demographic diversity of small business owners is one factor. Others include variations according to the size of the business (both in terms of number of employees and size of turnover); the industry focus of the business; number of years in business; cultural background of the owner; and whether the location is rural or urban and/or home-based. It should not surprise that cultural background plays a part in small business. Being a small business owner has a different meaning in different cultures and some of the expectations about what is involved will vary. Some research also suggests that whether or not an owner comes from a small business family background is an important factor that may have to be considered in any sampling frame, since there is evidence that it has an impact on financial literacy levels (see Saunders & Sampson [1998] for a small but instructive study). Given the diversity, both small and larger-scale surveys on costs and benefits would seem to be appropriate.

Measurement of costs and benefits

- ✧ There is considerable scope for research on costs and benefits associated with different parameters of small business, for example, across different types of industries, years of experience in business, rural and urban-based business, and cultural background of the owner.
- ✧ While core literacy skills are likely to be required for all small businesses, the diversity of small businesses suggests that some required literacies are highly contextual, although the consultations revealed some differences of opinion about this.
- ✧ The research literature is inconclusive about the most important skills for entrepreneurship and success in small business. This has an impact on what indicators are used to measure success, and therefore on the indicators of benefits and costs.

Researching economic and social costs and benefits

This section reports on the findings from consultations with economic modellers and the managers of relevant and potentially useful Australian longitudinal studies.

The current environment

As this review has highlighted, there is a relative lack of research within Australia, compared with other developed countries, on the impact of adult literacy and numeracy on various economic and social outcomes—whether the focus is on the costs of poor levels of literacy and numeracy or the benefits of improving them. This is also reflected in the availability of data with which to investigate the impacts. The Longitudinal Survey of Australian Youth is the only Australian longitudinal dataset that routinely collects data on literacy and numeracy, and it measures the literacy and numeracy levels of adolescents rather than adults.

Nevertheless, Australian economic researchers have carried out research on literacy and numeracy and labour market outcomes. For example, as reported earlier, Miller (Chiswick, Lee & Miller 2003) used data from the International Adult Literacy Survey for Australia (ABS 1997a) and Marks and Fleming (1998) used the Longitudinal Survey of Australian Youth. Similarly, Gleeson (2005) used the Longitudinal Survey of Australian Youth dataset to examine the economic returns of training for adults with low levels of literacy and numeracy. Ryan (forthcoming) is currently examining the role of literacy and numeracy in explaining the educational attainment and labour market outcomes of young Australians, after accounting for background characteristics and school and neighbourhood effects.

Data sources

The economic modellers' preferred approach to future research into costs and benefits associated with literacy was to collect data specifically for that purpose, because of the limitations of existing sources such as the Longitudinal Survey of Australian Youth and International Adult Literacy Survey. However, the high costs of collecting suitable new data through a large-scale dataset were acknowledged. One respondent considered that the ABS had not encouraged use of the International Adult Literacy Survey dataset because it was published in an 'unfriendly' way and was not as informative and detailed as, for example, the survey data published by Statistics Canada.

In the absence of appropriate longitudinal surveys collecting data on adult literacy and numeracy, it is possible, in theory at least, to use data from other longitudinal surveys by buying into them. A one-off survey of the literacy and numeracy levels of one of the cohorts, or a sub-sample of a cohort, could be carried out. This would provide a link to data on the other variables collected by the survey, potentially stretching back and/or forward a number of years. This scenario is not as effective as routinely collecting data on the literacy and numeracy levels of each cohort, but is a cost-effective way to access large-scale datasets. It is also in line with the approach taken in the United Kingdom, whereby a survey of the literacy and numeracy levels of a 10% sub-sample of both the National Child Development Survey and the British Cohort Study cohorts has proved fruitful for subsequent analyses of a range of economic and social outcomes.

The MONASH model, which was used to estimate the economic benefits of improving the financial literacy levels of the lowest skilled Australians (Commonwealth Bank Foundation 2005), is also available for modelling the impact on the Australian economy of improving adults' literacy and numeracy levels. The MONASH model, based in the Centre of Policy Studies at Monash University, is a dynamic computable general equilibrium model of the Australian economy, which has been used to analyse the impact of many policies on national income and unemployment, and the distribution of income.

Taking research forward

Most of the modellers interviewed and/or contacted were interested in undertaking work on measuring the costs of poor literacy or the benefits of improving literacy. Funding was recognised as the major constraint, both for new data collection and to support researchers to work on the data. A respondent commented that, for any substantial development to occur, the area would need

to be recognised as a national priority by one or more Australian Government departments or major funding agency.

The feasibility of using existing longitudinal datasets by collecting data on the adult literacy and numeracy levels of a sample of, or all of one cohort, was explored with a few respondents. Although they considered it to be an interesting approach, it was evident that any short-term buy into the Longitudinal Survey of Australian Youth, the Australian Temperament Project (a longitudinal study of the psycho-social development of a large, representative sample of Australian children born between September 1982 and January 1983) or the Household, Income and Labour Dynamics Australia survey would require the agreement of the survey managers, and in many cases, the ultimate funders of the longitudinal surveys, that is, Australian Government departments. Both partners would need to be convinced of the worth of collecting data on literacy and numeracy and that it would not detract from the main aims of the particular longitudinal survey (for example, by impacting on attrition rates). Some longitudinal surveys may be easier to buy into than others, for example, questions have been added previously to the Australian Temperament Project. Details of the longitudinal studies referred to in this paragraph are in appendix D.

Conclusions and future directions

There is sufficient interest and an adequate research base in Australia for obtaining better information about social and economic costs and benefits in the three selected areas. However, the current profile of each is different. Financial literacy currently has some champions. Australian Government policy development related to financial literacy and substantial interest from the financial services industry are likely to encourage more research relevant to costs and benefits. Health literacy does not at present have any obvious champions, but this could change in light of ongoing concerns about health care costs. The case for the importance of literacy and numeracy in relation to small business has yet to be made. However, on the surface, it would seem to be a relatively easy task to convince people of its significance, given the number of individuals and families involved and its social and economic importance. The relationship between small business and financial literacy could be a good starting point.

Encouraging developments in all three areas would be ideal. However, if a decision had to be made about where to put the main effort in moving forward, the choice would be health literacy. Given that a small number of researchers are working directly on health literacy, Australia has a relatively well-developed health promotion field, and international evidence strongly suggests that investing in health literacy improves health outcomes.

The research questions

Available frameworks

The most comprehensive available frameworks for investigating benefits and costs are concerned with adult learning rather than with literacy as such. They nevertheless: provide useful directions for research concerning literacy and numeracy, particularly the need to incorporate a broad, interactive and developmental approach to costs and benefits; recognise complex interactions and flow-on effects between multiple literacies; acknowledge the transforming and sustaining nature of literacy and numeracy and the need to consider a wide range of individual, family and social indicators in addition to economic indicators and outcomes (which are often considerably easier to measure). They also highlight the complexity of measuring costs and benefits.

A number of frameworks have been developed for investigating benefits and/or costs in different social and economic areas. Nutbeam's (1999) health literacy framework, which describes functional, interactive and critical health literacy and places health literacy in the broader arena of community and public health, is a potentially useful model. It could be further explored in future research on costs and benefits related to health literacy. It may also have some possibilities for translation into other social areas. Frameworks for financial literacy are less well developed. Models of consumer decision-making may be of some use but are still likely to miss much of the complexity of the attitudinal factors which have an impact on financial behaviour, thus influencing costs and benefits.

Effective means of measuring costs and benefits

Contrary to expectations, the literature on methodologies for estimating the costs associated with poor literacy and the benefits of improving literacy is relatively wide and rich. Relevant research studies exist across a range of economic and social domains. There is a substantial body of

international literature on the economic costs associated with poor literacy, both in terms of individual earnings and unemployment, and broader productivity. A number of studies have examined the costs to business and employers of poor literacy skills within their workforce and/or the benefits of improving these skills.

A range of methodologies have been used to measure the benefits of improving literacy and numeracy skills amongst employees, although there is a much larger literature on the benefits of investing in training in general. The research on literacy and numeracy has typically focused on cost savings and/or productivity gains to the company, although some studies included employee-focused outcomes, such as levels of promotion. Research conducted in the United Kingdom suggests that most small business employers are largely unaware of poor literacy and numeracy skills.

A wide range of social areas have been the subject of research, including health, financial and consumer issues, families, crime and social capital. A small body of research on the costs and benefits for selected population groups also exists.

Most of the work to date on costs and benefits of health literacy has investigated the association between levels of functional health literacy and health knowledge and behaviour. Nevertheless, there is growing recognition of the need to go beyond this. Most attention has been paid to literacy and various aspects of physical health, including knowledge and behaviour of specific health issues, although the literature does include studies of 'mental health literacy' and 'depression literacy', broadly defined as knowledge, understanding and beliefs about mental health. A clearer focus on measuring the benefits of investing in health literacy from the perspective of health outcomes and perhaps cost savings, would contribute to better information about the costs and benefits of health literacy.

The overseas literature on financial literacy has predominantly measured the benefits of workplace-based or high school-based financial education. Australian research has measured levels of financial literacy and the economic benefits of improving financial literacy levels within the general population. Nevertheless, the review indicates that important issues remain to be resolved in measuring financial literacy, including achieving a better understanding of the relationship between financial literacy and low income levels, and the influence of attitudinal and psychological factors. Furthermore, research in Australia into the interaction between the financial literacy levels of employees and employer costs and rates of return has yet to be fully exploited. There is a need for better understanding of the costs and benefits for unemployed people as well as those who are employed, and a case for more research on the links between financial literacy levels and mental and physical health.

Other key issues include the importance of multi-disciplinary and multi-method approaches to determining and measuring benefits and costs, including the need to integrate human and social capital approaches and to embrace both rigorous quantitative and qualitative methodologies. The importance of longitudinal cohort studies as a source of data for measuring benefits and costs is also apparent from the review of the research. The overall preferred approach would be to use a combination of methods, including sophisticated statistical analysis on longitudinal datasets, pre- and post-test and control group designs for quantitative surveys, and case studies to explore and tease out important issues.

Despite the potential usefulness of estimates of benefits and costs in making the case for increased investment in literacy, assessing social and economic costs and benefits is unfortunately not a straightforward undertaking as the following issues highlight.

- ✧ There are underlying conceptual issues which should be addressed in each of the areas and in relation to the overarching notion of multiple literacies.
- ✧ Current measures of literacy and numeracy need to be refined, particularly in light of changing knowledge demands in life and work in the twenty-first century.
- ✧ Some areas are less amenable to quantifiable measurement than others. The use of a combination of rigorous qualitative and quantitative methodologies, as advocated above, will best capture the range of costs and benefits.

- ✧ A 'one-size fits all' approach to measuring costs and benefits is not sufficient. There are likely to be variations according to age, gender, life circumstances, and level of literacy and numeracy disadvantage.
- ✧ There are substantial challenges in meeting the ideal of encompassing the whole range of costs and benefits for individuals, families and communities across social domains and across an individual lifespan.

Available information for modelling and assessing costs and benefits

The previous chapter identified some possibilities for modelling and assessing costs and benefits in each of the three selected areas, including buying into existing longitudinal studies by surveying a sample of a cohort. The Adult Literacy and Lifeskills survey to be conducted in 2006 will be a key source of data on literacy and numeracy in the future. While there are valid criticisms to be made of current measurement approaches and the interpretation and use made of various literacy 'levels', the survey will provide the best available large-scale source of information about literacy and numeracy in Australia. Its potential use is discussed in the Adult Literacy and Lifeskills Survey below.

Establishing frameworks for ongoing monitoring of costs and benefits

The consultations suggested that establishing fully fledged frameworks for ongoing monitoring and analysis of costs and benefits is, at present, some way off. Achieving this will ultimately depend on the availability of ongoing funding and the establishment of appropriate datasets over time. Nevertheless, steps that could be taken towards this outcome are outlined below.

Agenda for future research

Establishing the conditions

Developing a useful research agenda for the future will depend on the following:

- ✧ convincing government and other research funding bodies that adult literacy and numeracy costs and benefits is an important individual, community and national issue
- ✧ getting commitment from researchers and other relevant parties in financial literacy, health literacy, and literacy and numeracy in small business, and other areas if possible
- ✧ finding realistic and viable means of moving forward, through partnerships between the adult literacy field, researchers and other stakeholders in the three sectors, and researchers with particular expertise in modelling and longitudinal study research. To some extent, achieving collaboration across different disciplines and areas of interest will take time and a willingness to understand each other's worlds. However, there is much to be learnt from such cooperation. There are already examples of collaboration on a small scale, for example, health literacy researchers are seeking advice from adult literacy practitioners.

The next steps

To further develop an agenda for research, the following steps could be taken.

- ✧ Small working groups could be established and comprise representatives from the adult literacy field, the relevant social domain, other relevant areas such as the ABS, economic modellers, longitudinal researchers, and qualitative researchers, as appropriate. Their tasks would be to obtain agreement on priorities and appropriate methodologies and to jointly seek funding for further research.
- ✧ There would be benefit on practitioners in the adult literacy field agreeing on some appropriate survey questions/ items for use in longitudinal studies. Benefit would also be realised by further exploring the potential to buy into longitudinal studies such as the Australian Temperament

Project by surveying the literacy and numeracy levels of a sub-sample of the cohort. The latter approach would be in line with that taken in the United Kingdom.

- ✧ The resources available for consultations in the present project were very modest. Further targeted consultations to reach a wider range of people in the three areas are needed to broaden understanding of and interest in literacy and numeracy costs and benefits.
- ✧ This report has gathered a considerable body of information about the benefits and costs of literacy across a range of areas, and offers different approaches to the task of assessing literacy and numeracy costs and benefits. Wide dissemination of the reported findings may go some way towards establishing greater interest and a broader base for research in Australia.

The Adult Literacy and Lifeskills Survey

The Adult Literacy and Lifeskills Survey will provide a valuable Australian dataset. Strategic use of the information could add considerably to understanding of literacy and numeracy costs and benefits. The following suggestions are made in relation to the survey.

- ✧ Final planning for the survey needs to ensure that the scope of the sample and the demographic information collected will enable the best strategic use of the findings. For example, the International Adult Literacy Survey sample had an age cut-off point of 75 years, and in light of an ageing population, there are arguments for raising this.
- ✧ The potential of the Adult Literacy and Lifeskills Survey needs to be widely promoted (by government and literacy and numeracy organisations) amongst government departments, funding bodies, researchers, employers, and the community, and across-sector use of the data and findings encouraged.
- ✧ The possibility of using the MONASH model of the Australia economy in conjunction with the Adult Literacy and Lifeskills Survey to model the costs of poor literacy and numeracy to the Australian economy, or the benefits of improving these skills, should be explored.
- ✧ A thorough analysis of numeracy data from the Adult Literacy and Lifeskills Survey should be undertaken.

Research directions

Better information is needed about the impact of poor numeracy. While the recognition given to the importance of numeracy has grown considerably in recent years in Australia, historically, it has suffered as well as benefited from its definition being incorporated in literacy (Johnston 2002). There are also some indications that difficulties with numeracy may be more widespread than literacy difficulties, and that attitudinal and emotional factors play a large role in this. However, numeracy skills are as critical as literacy skills to individual functioning within society in the twenty-first century, and they are an integral part of the three areas selected as the focus for further research. An obvious starting point arising from this project is research on the effects of poor numeracy skills and costs to clients and providers in the small business sector.

Collaboration across sectors and research partnerships seems crucial to take forward the assessment and measurement of the social and economic costs and benefits associated with literacy and numeracy. Funding bodies can facilitate and encourage this, as they have done in other areas of research, by building it into requirements for funding. In addition, interested researchers can explore the possibilities of using existing research funds for cross-sector partnerships.

The unchartered nature of research into benefits and costs associated with multiple literacies in Australia, together with the research possibilities revealed in the diversity of overseas literature reviewed here, leave the way open for some focused initiatives which will ultimately contribute to a broader understanding of the social and economic costs and benefits of literacy and numeracy and to strong policy development.

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Appendices

A The literature search

A relatively wide-ranging search for relevant research on the costs of poor literacy and the benefits of improving literacy, together with examples of frameworks that might be applicable was undertaken using the following sources and methods.

- ✧ Keyword searches of Google and Google Scholar were conducted.
- ✧ Keyword searches of academic literature databases were conducted (including ERIC, Academic Search Elite, British Humanities Index, Sociological Abstracts, Australian Education Index, Australian Public Affairs Index, Family and Society Plus, Dissertation abstracts, EBSCO online, Proquest digital dissertations, Proquest education journals, Econlit, Social Services abstracts, World Bank Magazine, Expanded Academic ASAP).

Key words such as ‘adult literacy’ and ‘cost(s)’ and/or ‘benefit(s)’ and/or ‘measurement’ and/or ‘valuation’ and/or ‘investment’, ‘financial literacy’ and ‘cost(s)’, ‘health literacy’ and ‘cost(s)’ and/or ‘benefit(s)’ were used to search these databases.
- ✧ Literacy and broader education websites and websites of institutions known to be interested in the area were investigated, including:
 - ◆ in Australia: ARIS, National Centre for Vocational Education Research, Department of Education, Science and Training, Literacynet, EDNA
 - ◆ in Canada: the National Literacy and Health Program, Statistics Canada, Health Canada
 - ◆ in the United States: National Centre for the Study of Adult Learning and Literacy, the National Literacy Advocacy list sponsored by the American Association for Adult and Continuing Education, the Department for Education
 - ◆ in the United Kingdom: the Centre for the Study of the Wider Benefits of Learning, the Department for Education and Skills, the National Foundation for Educational Research, the National Research and Development Centre for Adult Literacy and Numeracy and the National Institute of Adult Continuing Education
 - ◆ in Ireland: the National Adult Literacy Association.
- ✧ The websites of other relevant institutions, such as the Agency for Healthcare Research and Quality in the United States and the National Association of Citizens Advice Bureaux and the Financial Services Authority in the United Kingdom were also reviewed, as searches on Google and Google Scholar highlighted that they would potentially be of use.
- ✧ Publications using data from the International Adult Literacy Survey. Publications using data from the survey were reviewed for research related to impacts and costs and benefits of literacy.
- ✧ The development literature was briefly explored. Some of the literature concerned with literacy and numeracy in developing countries suggested that it was not a key resource for the types of frameworks and methodologies that this project was interested in, although many of the broader costs and benefits associated with literacy are reflected in this literature.

B The consultations

The three domains

The following broad issues provided a general framework for the consultations:

- ✧ perceptions of the ‘state of play’ regarding health literacy/financial literacy/literacy and small business
- ✧ what would be required to determine costs and benefits of literacy in a particular area
- ✧ any useful data or databases which might be available
- ✧ levels of interest in taking forward the measurement of costs and benefits
- ✧ new data that might need to be collected to measure benefits and costs
- ✧ realistic assessments of the possibilities of taking the research further, either at this stage or in the future
- ✧ constraints and difficulties in obtaining better measurements of costs and benefits.

Economic modellers

The core questions were:

- ✧ Have you done any work, or are you aware of any existing work, on estimating the economic and social costs of poor literacy or the benefits of improving literacy?
- ✧ How would you describe the ‘state of play’ regarding research into the costs of poor literacy and the benefits of improving literacy across different economic and social areas?
- ✧ Do you know of any useful data/existing databases?
- ✧ How interested would you be in taking forward the measurement of costs and benefits?
- ✧ What sort of new data would have to be collected to measure benefits and costs?
- ✧ What is your realistic assessment of the possibilities of taking the research further, either at this stage or in the future?
- ✧ What constraints and difficulties would there be in taking it further?
- ✧ Any suggestions regarding one or two key people in the area to consult with (as a check to see if we were talking to the key people)?

Longitudinal study researchers

If literacy and numeracy *were not* measured within the cohort:

- ✧ What variables are measured within the longitudinal study?
- ✧ Are literacy and numeracy measured? Or any proxy measures?
- ✧ Background to the longitudinal study and conditions of use.
- ✧ Would it be possible to add questions to a forthcoming survey to measure literacy and numeracy?

If literacy and numeracy *were* measured within the cohort:

- ✧ How have literacy and numeracy been measured?
- ✧ How many years worth of data does the study have?
- ✧ Are there any methodological issues with the cohort data?

C List of people consulted

The project brief included consultations with 20–30 people. They were selected for their known interest in a particular area and/or on recommendation from a variety of sources. Three groups of people were included:

- ✧ people with expertise and/or interest in health literacy, financial literacy, and small business
- ✧ people with expertise in economic modelling
- ✧ people who had knowledge of relevant longitudinal studies in Australia.

The second and third groups were included because the use of advanced statistical analysis on large datasets, including longitudinal surveys, was relatively common in the literature across the different economic and social domains.

The following people participated in a relatively extended telephone consultation. We are very grateful for their contributions to this project.

Health literacy

Dr Rachele Buchbinder, Department of Epidemiology and Preventative Medicine, Monash University
Kirsten McCaffery, Post Doctoral Research Fellow, School of Public Health, University of Sydney
Dr Kryss McKenna, School of Health and Rehabilitation Sciences, University of Queensland
Professor Don Nutbeam, Head, College of Health Sciences, University of Sydney
Dr Richard Osborne, Senior Lecturer, Department of Medicine, University of Melbourne
Marilyn Wise, Executive Director, Australian Centre for Health Promotion, University of Sydney

Financial literacy

Dr Diana J Beal, Associate Dean (Research), Faculty of Business, University of Southern Queensland
Simon Cobcroft, Manager, Taskforce, Consumer and Financial Literacy Taskforce
Professor Peter Dixon, Director, Centre of Policy Studies, Monash University
Jeremy Pooley, Commercial Director and Chief Financial Officer, Money Solutions
Patricia Toohey, ANZ Bank
Sue Wagland, Honours student, Faculty of Business and Law, University of Newcastle

Business/small business

Steve Balzary, Director, Employment and Training, Australian Chamber of Commerce and Industry
Michael à Campo, PhD candidate, Faculty of Business and Law, Newcastle University
Dr Michael Schaper, Small Business Commissioner for the Australian Capital Territory

General

Professor Joy Cumming, School of Cognition, Language and Special Education, Faculty of Education, Griffith University

Economic modellers

Professor Gerald Burke, Executive Director, Centre for the Economics of Education and Training, Monash University

Professor Paul Miller, Head of the School of Economics and Commerce, University of Western Australia

Dr Chris Ryan, Research Fellow, Social Policy Evaluation and Research Centre, Research School of Social Sciences, Australia National University

Longitudinal cohort studies

Dr Sheldon Rothman, Longitudinal Study of Australian Youth Project Director, Australian Council for Educational Research

Carol Soloff, Project Manager, Longitudinal Study of Australian Children, Australian Institute of Family Studies

Diana Smart, Research Fellow and Project Manager of the Australian Temperament Project, Australian Institute of Family Studies

We are also grateful to the following people who did not participate in a formal extended consultation but who provided responses to some of the consultation issues and questions by email or telephone, or who were helpful in providing other information related to the project.

Wayne Carey, Centrelink

Dr Michael Dockery, Research Fellow, Curtin Business School, Curtin University of Technology
Professor Peter Kenyon, Professor of Economic Policy, John Curtin Institute of Public Policy, Curtin University of Technology

Professor Mark Wooden, Director of Household, Income and Labour Dynamics in Australia Survey, Melbourne Institute of Applied Economic and Social Research, University of Melbourne

Dr Matthew Knuiman, University of Western Australia

Dr Stephen Lamb, Associate Professor, Department of Education Policy and Management, University of Melbourne

Dr Peter McDonald, Australian National University

Tony Stephens, Council of Small Business Organisations of Australia

D Overview of relevant Australian longitudinal studies

This section provides a brief overview of relevant Australian longitudinal studies. Only one longitudinal cohort study within Australia, the Longitudinal Survey of Australian Youth, routinely collects data on literacy and numeracy. The others listed here do not.

Longitudinal Survey of Australian Youth

(Incorporates data from the previous Youth in Transition survey and Australian Youth Survey cohorts.)

Managed by: Australian Council for Educational Research and the Department of Education, Science and Training.

Funded by: Department of Education, Science and Training.

Description and main objectives: Understanding the transitions of young adults between education, training and work. More detailed investigations have examined the links between social characteristics, education and training, and employment. Issues investigated in the Longitudinal Survey of Australian Youth project include school achievement and school completion, participation in vocational and university education, gaining and maintaining employment, and household and family formation.

Methodology: Uses annual telephone interviews to track the progress of cohorts. Postal surveys and other research instruments (see below) are used as required.

Measurement of literacy and numeracy: Yes. Reading and numeracy tests are administered to each new Longitudinal Survey of Australian Youth cohort (in Year 9).

Details of cohorts: The first cohort comprised people born in 1961 (from the previous Youth in Transition survey). Data were last collected from this group in 1995. The project is currently following three cohorts: two groups of young people who were in Year 9 in 1995 and 1998 (13 000–14 000 students in each cohort), respectively, and a group of young people who turned 15 years of age in 2003 and participated in Organisation for Economic Co-operation and Development Programme for International Student Assessment (PISA) 2003.

Measures/variables: See description and main objectives.

For further details go to: <<http://www.acer.edu.au/research/LSAY/overview.html>>.

Australian Temperament Project

Managed by: Australian Institute of Family Studies.

Funded by: Australian Institute of Family Studies.

Description and main objectives: A longitudinal study of the psycho-social development of a large and representative sample of Australian children born in the state of Victoria between September 1982 and January 1983. The study aims to trace the pathways to psycho-social adjustment and maladjustment across the lifespan, and to investigate the contribution of personal, family and environmental factors to development and wellbeing. The broad issues addressed include the contribution of temperament to a child's emotional, behavioural and school adjustment; genetic influences on temperament and behaviour; the development of healthy, socially competent functioning; the development of civic-mindedness and social responsibility; the transition to young adulthood; pathways to occupational and educational participation; the development of interpersonal relationships; and family formation.

Methodology: Postal and telephone surveys of parents, maternal and child health nurses, primary school teachers, and from the age of 11 years, the children themselves, on young people's development and wellbeing. A number of smaller, in-depth studies of sub-samples of cohorts, addressing specific developmental and clinical themes, have involved home visits and individual assessment of children.

Measurement of literacy and numeracy: Minimal. A brief reading test was administered to the cohort when they were seven years of age.

Details of cohorts: The initial sample comprised 2443 families from urban and rural areas of Victoria. Approximately two-thirds of the families are still participating in the study after 21 years. Thirteen waves of data have been collected by mail surveys from 4–8 months of age to 19–20 years of age. The first four waves of data were collected at annual intervals from infancy to 3–4 years of age. Subsequent data collections, dating from the commencement of primary school, have been at two-yearly intervals, with an additional assessment completed during the first year of secondary school in order to track development over this important developmental transition.

Measures/variables: Temperament, behavioural and school adjustment, substance use, antisocial behaviour, depression, health, social competence, civic mindedness and engagement, peer relationships, family functioning, parenting style and family environment.

For further details go to: <<http://www.aifs.gov.au/atp/home.html>>.

Household, Income and Labour Dynamics in Australia Survey

Managed by: Melbourne Institute of Applied Economic and Social Research (University of Melbourne). Responsibility for the design and management of the survey rests with a group comprising the Melbourne Institute, Australian Council for Educational Research, Australian Institute of Family Studies.

Funded by: Department of Family and Community Services.

Main objective: To collect information about economic and subjective wellbeing, labour market dynamics and family dynamics.

Methodology: Household-based panel study. Uses annual telephone interviews to track the progress of cohorts. Special questionnaire modules are included each wave.

Measurement of literacy and numeracy: No.

Details of cohorts: The wave one panel began in 2001 and consisted of 7682 households and 19 914 individuals. Funding has been guaranteed for eight years.

Measures/variables: See main objective.

For further details go to: <<http://www.melbourneinstitute.com/hilda/>>.

Negotiating the Life Course

Negotiating the Life Course is a longitudinal study undertaken by the Centre for Social Research, the Demography and Sociology Program of the Research School of Social Sciences, Australian National University and the School of Social Science, University of Queensland. It is designed to study the changing life courses and decision-making processes of Australian men and women as the family and society moves from male breadwinner orientation in the direction of higher levels of gender equity. Its focus on work and family trajectories over the life course, and the resources that women and men draw upon throughout their lives when making decisions about career and family, provide some potential for linking outcomes with multiple literacies. The interview schedule includes questions about education levels of respondents, partners and children, satisfaction with general health, and some items which could be related to financial literacy, for example, rating of achievement of goals in various life domains. Three waves of the study have been conducted since 1997. In theory it may be possible to pursue some use of the data with the responsible bodies; however, Negotiating the Life Course does not have ongoing funding—funding is sought for each new wave, and it is a telephone survey, which would seem to limit literacy-related questions to self-reported literacy levels.

Longitudinal Study of Australian Children

Growing up in Australia is the Longitudinal Study of Australian Children. The study is funded by the Australian Government Department of Family and Community Services and run by a consortium of organisations which includes the Australian Institute of Family Studies. The Longitudinal Study of Australian Children explores family and social issues, and addresses a range of research questions about children's development and wellbeing. Findings from the first wave of the study were released early in 2005. The study is funded for four waves and waves will occur every two years. Two cohorts of children are included: those aged between 0 and 12 months and 4 to 5-year-olds. While the focus is on the children, parent and family characteristics are of course included. Several indicative questions regarding parental literacy are included—how often they read magazines and newspapers, how often they write letters and how much time is spent reading stories to children.

It was considered that a case could be made for including additional questions. The ultimate decision rests with the Department of Family and Community Services. There is however a general concern about burden on the respondents as participation in the study already requires a relatively substantial time commitment. Data from the first wave are available for purchase on compact disc.

Support document details

Additional information relating to this research is available in *Social and economic benefits of improved adult literacy: Towards a better understanding—Support document*. It can be accessed from NCVET's website <<http://www.ncver.edu.au>>. This document contains a literature review entitled 'Mapping benefits and costs'.



This report is part of the Adult Literacy National Project, funded by the Australian Government through the Department of Education, Science and Training. This body of research aims to assist Australian workers, citizens and learners to improve their literacy and numeracy skills.

Research funding is awarded to organisations via a competitive grants process.

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