


Barriers to Participation

Financial, Educational and Technological

A report into the barriers to societal participation among low-income Australians

Edited by
Gianni Zappalà

Orfeus research

THE SMITH FAMILY

everyone's family

List and copies of available publications may be obtained by contacting:

Research & Social Policy Team
The Smith Family
16 Larkin St
PO Box 10500
Camperdown NSW 1450

Tel: (02) 9550 4422
Fax: (02) 9557 5079

Further information may also be found at www.smithfamily.com.au

ISBN: 1 876833 26 2

March 2003

Barriers to Participation

Financial, Educational and Technological

A report into the barriers to societal participation among low-income Australians

Edited by
Gianni Zappalà

Contents

Figures and Tables

Figures

Tables

Preface

Research from many different sectors is confirming the positive role that education/lifelong learning can have in developing people's capacity to move beyond current financial disadvantage and enhance their social and economic participation. Last year, for instance, a study by the Department of Family and Community Services (FaCS) found that young people who obtain either tertiary qualifications or complete Year 12 have superior labour force outcomes to those who do not (Pawagi 2002). Another study by the Department of Education, Science and Technology (DEST) affirmed that socio-economic background is the major factor in the variation in student perspectives on the value and attainability of higher education (James 2002). This study complements the research commissioned by The Smith Family in 2001 from the National Centre for Social and Economic Modelling (NATSEM) (Harding et al 2001).

The NATSEM analysis reaffirmed the relationship between education and financial disadvantage - namely, poverty rates among those aged 15 years and over declined sharply as educational qualifications increased. Furthermore, the study found the poverty risk among those with university education to be less than half the rate compared to those with no post secondary qualifications. Furthermore, other research now confirms that low high school completion rates are inversely related to negative social outcomes like crime (Chapman et al 2002). In contrast, there is much to be gained by attracting early school leavers into further education and training programs by developing learning systems that can respond flexibly to diverse learning needs not being presently met by the majority of school and university programs available for the general population (Applied Economics 2002; Spierings 2002). These findings have also been supported by the release of several reports commissioned by the Business Council of Australia that quantify the costs of early school leaving at an economic and individual level and outline possible policy solutions (Allen Consulting 2003a,b; BCA 2003; Applied Economics 2003).

The relationship between education/lifelong learning and overcoming disadvantage is a complex one. As a report by UNICEF concluded, it is not possible to isolate single factors within learning systems to account for differences in educational outcomes (Innocenti Report 2002). Instead, we should consider a variety of factors within the broader context of the lives of students and their families. In particular, the UNICEF Report emphasised the relationship between educational performance and pre-existing inequalities in society and the critical contribution that can be made by broad access to quality early childhood education and care programs. Such programs are important for overcoming barriers to educational performance. The growing body of evidence in this area highlights that good education and learning experiences are critical in overcoming disadvantage at all stages of the lifecycle, including those addressed outside periods of compulsory education.

The Smith Family's major research report for 2003, *Barriers to Participation: Financial Educational and Technological, a report into the barriers to societal participation among low-income Australians,* edited by Dr Gianni Zappalà,

makes a significant contribution to expanding the evidence base on the role that education/lifelong learning can play in overcoming disadvantage. It does so by addressing a number of other interrelated barriers to participation that can lock people into a cycle of disadvantage.

It brings together the findings from several important research projects commissioned or undertaken by The Smith Family as part of its ongoing research and social policy agenda. The Smith Family's societal change agenda commits us to working closely with researchers who can complement our own in-house research capacity. Through a number of alliances, we carry out research that contributes to an evidence base for our strategic focus on education/lifelong learning. Research alliances also provide evidence for our community programs supporting greater participation in education and lifelong learning as keys to preventing current hardship turning into long-term disadvantage.

The first chapter is a continuation of The Smith Family's working relationship with NATSEM. This previously commissioned research, published as stand-alone reports, has focused on trends in financial disadvantage in Australia. A key finding of the 2002 report, noted above, was the linkage between increased educational qualifications and reduced poverty risk. The analysis presented in Chapter one of this report, examines the expenditure patterns of low-income households and enhances our understanding of the impact of financial disadvantage on accessing opportunities for education and lifelong learning, as well as for other goods and services such as housing, food and information technology.

The second chapter brings together research that is part of an Australian Research Council SPIRT grant by ACIRRT and The Smith Family (see Smyth et al 2002). It compares a cohort of *Learning for Life* (LFL) students with a control group of students from the Longitudinal Survey of Australian Youth (LSAY). A key finding was that LFL students had more positive attitudes about school and learning than did the comparable group of LSAY students.

The third chapter builds on recently published research by The Smith Family and focuses on the 'digital divide' among families and students on the LFL program. It also provides a preliminary illustration of the need for the 'ABC of the digital divide' - access, basic training, and content - as an effective way of overcoming the barriers to computer and Internet usage that many students from low-income households experience.

In offering a multidimensional analysis of the barriers to social and economic participation, we hope that this Report will contribute to the growing body of evidence pointing to the critical importance of education/lifelong learning in building capacity for greater social and economic participation for all Australians. Indeed, our assessment of the timeliness of the report prompted The Smith Family to incorporate it as the major focus of our submission to the Senate Inquiry into Poverty in Australia.

Dr Rob Simons
National Manager Strategic Research and Social Policy
The Smith Family

References

Allen Consulting (2003a) *Overview of Transition Programs: Policies and Programs*, Melbourne: Business Council of Australia.

Allen Consulting (2003b) *The Economy Wide Benefits of Increasing the Proportion of Students Achieving Year 12 Equivalent Education: Modelling Results,* Melbourne: Business Council of Australia.

Applied Economics (2002) *Realising Australia's Commitment to Young People - scope, benefits, cost, evaluation and implementation*, Dusseldorp Skills Forum.

Applied Economics (2003) *Young Person's Education, Training, and Employment Outcomes with Special Reference to Early School Leavers*, Business Council of Australia and Dusseldorp Skills Forum.

Business Council of Australia (BCA) (2003) *The Cost of Dropping Out: The Economic Impact of Early School Leaving*, Melbourne: Business Council of Australia.

Chapman, B., Weatherburn, D., Kapuscinski, C.A., Chilvers, M., and Roussel, D (2002) *Unemployment duration, schooling and property crime*, NSW Bureau of Crime Statistics and Research.

Harding, A., Lloyd, R. and Greenwell, H (2001) *Financial Disadvantage in Australia: The Persistence of Poverty in a Decade of Growth*, Camperdown: The Smith Family.

Innocenti Report (2002) *A League Table of Educational Disadvantage in Rich Nations,* Card Issue No. 4, Florence, Italy: United Nations Children's Fund Innocenti Report Centre.

James, R (2002) *Socioeconomic Background and Higher Education Participation: An analysis of school students' aspirations and expectations,* Canberra: Department of Education Science and Training.

Pawagi, V (2002) *Youth in Focus: Interaction between Educational Participation, Educational Attainment and Labour Force Activity*, Canberra: Department of Family and Community Services.

Smyth, C., Zappalà, G., Considine, G (2002) 'School to adult life transitions through work and study: A select review of the literature', Background Paper No.4, Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Spierings, John (2002) *Honouring Our Commitment - a policy paper about Realising Australia's Commitment to Young People*, Dusseldorp Skills Forum.

Notes on contributors

Gillian Considine is a Research Fellow at the Australian Centre for Industrial Relations Research and Training (ACIRRT), University of Sydney. Gillian has degrees in Psychology and Organisational Psychology from Macquarie University and is currently working on a Doctorate at the University of Sydney on youth in the labour market. Prior to joining ACIRRT over three years ago, she worked as a consultant to various public and private organisations on issues of change management, performance management, training, and selection. Her work at ACIRRT has included projects related to disadvantaged youth, vocational education and training, skill development and working hours.

Harry Greenwell is a policy analyst at the Commonwealth Treasury. Harry has degrees in Arts and Science from the Australian National University. Prior to his current role, Harry worked as a Research Officer at the National Centre for Social and Economic Modelling (NATSEM) at the University of Canberra from October 2000 to June 2002. While at NATSEM he worked on several projects examining poverty, inequality and other aspects of income distribution, including the chapter in this report. His other research interests include labour market assistance and education policy.

Dr Ann Harding is Professor of Applied Economics and Social Policy at the University of Canberra and inaugural Director of the University's National Centre for Social and Economic Modelling (NATSEM). Ann has degrees in Economics from the University of Sydney and the London School of Economics. In 1996 Ann was elected a Fellow of the Academy of Social Sciences of Australia, becoming one of the youngest ever Fellows. Prior to joining NATSEM in 1993, Ann worked on major policy reviews in several Federal government departments. She is an internationally recognised expert in the fields of micro-simulation modelling, income distribution, and tax/transfer policy.

Rachel Lloyd is a Principal Research Fellow at NATSEM. Rachel has degrees in Economics and Asian Studies from the Australian National University. Prior to joining NATSEM in July 1999, Rachel worked at the ANU and in the Department of Prime Minister and Cabinet. While at NATSEM, she has worked on a variety of projects including models of the aged care and childcare systems, development and maintenance of STINMOD - NATSEM's static micro-simulation model, the Centrelink regional forecasting model, and several reports on poverty, financial disadvantage, and the factors affecting the use of telecommunications.

Jennifer McLaren is a Research Officer at the National Drug and Alcohol Research Centre, at the University of New South Wales. Jennifer has a degree in Psychology from the University of New South Wales and completed one year of a combined PhD/Masters in Neuropsychology at Macquarie University. Prior to joining the NDARC this year, Jennifer was a Research Assistant in the Research & Social Policy Team, The Smith Family from March 2002 to March 2003.

Dr Ian Watson is a Senior Researcher at ACIRRT. He has degrees in Sociology and Education from the Australian National University. Prior to joining ACIRRT in 1994, he was a Research Fellow in Sociology at Macquarie University. His work at ACIRRT has included projects on immigrants from non-English speaking

background in the labour market; labour market inequality and the problem of the 'working poor'; and the development of a Health of the Labour Market index. He has recently been working on large-scale workplace surveys of earnings, industrial coverage and other industrial relations issues for several State governments.

Dr Gianni Zappalà is Director of *Orfeus Research*, a consultancy specialising in the provision of research and evaluation services, policy analysis and training to socially responsible organisations. He has degrees in Economics, Industrial Relations and Political Science from the Universities of Sydney, London and Cambridge. Prior to establishing *Orfeus Research* in January 2003, he was the Research Manager at The Smith Family for three years and has also held various teaching and research positions at the Universities of Sydney, Cambridge (Fellow of Emmanuel College), Wollongong, the Australian National University, and Parliament House, Canberra. He has published widely in the areas of labour markets and industrial relations, immigration and citizenship, Australian politics, economic and social policy, education and disadvantage, volunteering, and corporate citizenship.

Executive Summary

This report brings together the findings from several important research projects that were either commissioned or undertaken by The Smith Family as part of its ongoing research and social policy agenda. The report contains three main chapters that focus respectively on aspects of the financial, educational and technological barriers to participation.

Financial barriers

In Chapter one, Harding, Lloyd and Greenwell use data from the 1998-99 Australian Bureau of Statistics (ABS) Household Expenditure Survey to examine the spending patterns and other characteristics of low-income households. Households were ranked by their equivalent disposable income and then divided into five equally sized groups or quintiles. 'Low-income' households were defined as those in the bottom quintile, while the top quintile was defined as 'high-income' households.

The key findings were:

- Low-income households devoted proportionately more of their total budget to the necessities of life. More than half of the entire weekly budget of low-income households is devoted to just three spending categories - food, housing and transport. Just over a fifth of the weekly spending of low-income households is devoted to food, compared with about 18 per cent for the average Australian household and 15.7 per cent for high-income households. Housing is also a major cost for low-income households, comprising about 17 per cent of total spending on goods and services. For middle to high-income households it comprised only 13 to 14 per cent of total expenditure.
- Low-income sole parent households devoted almost half of their total weekly spending to just two of the necessities of life - housing and food. Almost half of them were in housing stress, in the sense that their housing expenditure equals more than 30 per cent of their after-tax income. The spending of low-income sole parents on the little luxuries of life is remarkably low in comparison with the average Australian household. Just less than nine per cent of their total weekly budget is devoted to entertainment and recreation, well under the 12.7 per cent of the average household. Spending on alcohol is only one per cent of total spending, again the lowest of any of the household types examined. Spending on transport is again extremely low at 9.1 per cent of the total budget, almost half the 16.8 per cent of the weekly budget devoted to transport by the average Australian household. This low spending reflects dependence upon public transport, with only half of all low-income sole parent households reporting car or motorcycle ownership (compared with 73 per cent of households generally). Low-income sole parent households are saving very little, devoting less than $4 a week to paying off the principal on the mortgage on their home, to investment properties or home renovations, and to superannuation or life insurance - compared with almost $83 for the average Australian household. These findings accord with recent research that has shown it is difficult for sole parents to accumulate wealth. Given that 94 per cent of low-income sole parent households reported receiving

pensions or allowances, the results provide an insight into the living standards of those dependent upon the social security safety net.

- Low-income single persons living by themselves and aged less than 30 years were in severe financial disadvantage, with almost 47 per cent of the total weekly budget being devoted to housing and food. Almost four out of every five young singles were in housing stress, with their housing costs taking more than 30 per cent of their after-tax income. This was a higher rate of housing stress than for any of the other low-income household types examined. The results for middle-aged singles were also suggestive of financial disadvantage, with 40 per cent of the total weekly budget being devoted to housing and food. Spending on recreation by middle-aged singles was also remarkably low, at 8.7 per cent of total spending. This was the lowest proportion of the weekly budget devoted to recreation of any of the household types examined. A high 90 per cent of low-income middle-aged singles reported receipt of pensions and allowances. Overall, this seems to suggest a profile of high unemployment, hidden unemployment and disability among this group.
- While older Australians comprised 43 per cent of all low-income households, they recorded a lower degree of housing stress than any of the other low-income household types examined, reflecting the importance of home ownership in supporting living standards. Low-income older Australians, however, devoted a much higher proportion of their total weekly budget to food and a much lower proportion to transport and recreation than the average Australian household.
- Spending on schooling increased steadily with household income. With respect to couples with children, for low-income households schooling costs about $11.10 a week, taking up 1.8 per cent of the total weekly budget for goods and services. For high-income couples with children, schooling costs about $51.30 a week, comprising a higher 3.9 per cent share of the weekly budget.
- Spending on the Internet and computers was another area to which higher income households devoted a greater proportion of their weekly budget than lower income households. In sharp contrast, having a telephone was clearly perceived by low-income households as one of the essential components of modern living, with spending on telecommunications showing relatively little variation between low and high-income households and spending as a percentage of the total budget falling steadily as income increased.
- Finally, the chapter explores the value to households of the government provision of free subsidised social services, such as education, health and housing, given that these services (often also referred to as the 'social wage') play an important role in supporting the living standards of Australians with low incomes. After looking at both government cash transfers (such as the age pension), income taxes, selected indirect taxes and health, education, housing and welfare indirect benefits, the incomes of low-income households were raised from nothing for low-income households to $392 a week after inclusion of these transfers, taxes and

services. In contrast, the incomes of high-income households were reduced from $1820 before the receipt of any government cash benefits or services and before the payment of taxes to $1313 a week after taking account of all these government programs. It thus demonstrates the important role that government policy plays in assisting all Australians participate in the many facets of everyday life.

Educational barriers

In chapter two, Watson and Considine examine the learning experiences of The Smith Family's *Learning for Life* (LFL) students. They make use of the initial data from a three-year longitudinal study of LFL students to provide preliminary analyses on how the students who were in Year 11 in 2001 compared with those from a comparable group of Year 11 students. The results for students in the 'control group' are from Year 11 students that participated in the Longitudinal Survey of Australian Youth (LSAY), a major national survey conducted annually since 1995 by the Australian Council for Educational Research (ACER).

The Watson and Considine study focuses on two subgroups:

- Those students with positive learning experiences (reflected in students' strong positive attitudes towards school and learning); and
- Those students with negative experiences of learning (reflected in students' subjective accounts of serious learning difficulties).

While this chapter provides the first quantitative comparison of students on the *Learning for Life* program with students from the general population, it draws no conclusions concerning the efficacy of the *Learning for Life* program.

The key findings were:

- The students on the LFL program had more positive attitudes about school and learning than did the comparable group of LSAY students. These differences were even stronger once controlling for a range of background factors and other attitudes. It is important to note that while these preliminary findings are encouraging, they do not provide any evidence for the assumption that being on the LFL program has brought about better attitudes to school and learning. While this may be the case, data is not yet available to test this assumption.
- The students on the LFL program did not differ from the LSAY students with respect to learning difficulties. Controlling for all other factors, students on the LFL program were no more likely than the comparable group of LSAY students from financially disadvantaged backgrounds to report experiencing serious learning problems.

Other interesting findings were:

- Students from single-parent households were much less likely to experience learning difficulties than were students from other households. These results challenge other findings, as well as commonly held stereotypes, that students from single-parent households experience greater educational disadvantage and poorer learning outcomes than do students from two-parent households.
- There was a strong association between the parent's education level and student's positive attitudes towards school and learning. This link weakened, however, with the use of multivariate analysis. Instead, the

analysis found that a stronger association existed between post-school intentions and attitudes, with students who planned to study at university being twice as likely to express positive attidudes towards school and learning compared to those who did not plan to study at university.

- Students on the LFL program living in a metropolitan location were more likely to express strong positive attitudes towards school than were students living in non-metropolitan locations.

In conclusion, and contrary to prevailing assumptions, students from low socio-economic status (SES) backgrounds do not form a homogenous group in which a one-size-fits-all approach is useful in dealing with particular educational issues that may arise. The range of factors influencing differences in attitudes and learning difficulties among students from low SES backgrounds highlights the need for the continued diversification of programs aimed at alleviating some of the negative educational outcomes associated with financial disadvantage.

Technological barriers

In the final chapter, Zappalà and McLaren present data on the access and usage of Information and Communications Technology (ICT), in particular, computers and the Internet, by low-income households. The data come from a survey of computer and Internet access and usage among students and families on The Smith Family's *Learning for Life* (LFL) program. In general, research suggests that people from higher socioeconomic backgrounds have greater access to ICT compared to those from lower socioeconomic backgrounds. The existence of unequal access and usage of ICT across the population - the 'digital divide', is compounding disadvantage for some, because having access to ICT is becoming so central to being able to participate in the economic, social, political and cultural spheres of society. The chapter's focus is on what has been termed the 'A' of the 'ABCs of the digital divide' - Access, Basic Training and Content.

The key findings were:

- Fifty-nine per cent of families had a computer at home. This suggests that LFL families are significantly below the national average, as almost three-quarters (74%) of all Australian households with dependent children have a home computer.
- Just under one-third (32%) of families were connected to the Internet at home. Again, this is below the national average for Internet access among households with dependent children (48% according to the ABS, and 58% according to a more recent study).
- ICT access was not affected by whether the household was situated in a metropolitan or non-metropolitan area. In terms of ethnic/cultural background, Indigenous households and households from 'Pacific Islands' background were much less likely to have a computer or Internet access at home compared to other groups. Households where the parent/s were either Australian-born or born overseas but from English speaking backgrounds had similar levels of computer and Internet access to the overall mean. In contrast, households from non-English speaking background (NESB) (especially European) had higher levels of computer and Internet access. One-parent households had lower levels of access to a home computer (55%) and the Internet (28%) compared to two-parent

households (66% and 39% respectively). Households that were located in the most disadvantaged areas were less likely to have a home computer (52%) and home Internet access (27%), compared to households situated in the least disadvantaged areas (67% and 35% respectively). Households that owned or were purchasing their homes were more likely to own a computer (73%) than households that were renting privately (58%) or living in public housing (53%). Owners/purchasers were also more likely to have Internet access (43%) compared to those renting privately (33%) or in public housing (26%).

- In terms of socioeconomic status factors, households whose main source of income was social security were far less likely to have a computer at home compared with those whose main source of income came from employment (58% v. 72%). Similarly, home Internet access was higher for households whose primary income was from employment (44%) compared to those on social security (31%). A striking finding was the strong association between the level of parental education and computer and Internet access. When comparing households where the parent/s had less than ten years of education with households where the parent was university educated, the rate of home computer access was 43 per cent for the former and 88 per cent for the latter. The rates for Internet access were similarly disparate (18% and 57% respectively). This finding is consistent with previous studies that have found education level to be the key driver of Internet access, followed in importance only by income level.
- An overwhelming majority of students (98%) indicated that they used a computer. This is comparable to Australia-wide surveys. Most students stated that they use a computer 'sometimes' (33%) or 'often' (28%), with one quarter of students stating that they use a computer 'regularly'. Older students use computers more frequently than younger students. None of the other demographic characteristics seem to be strongly associated with the frequency of computer use. Regular usage was also higher for students who lived in a house that was owned or being paid-off compared to those in private or public rental accommodation, and for those who lived in the more advantaged areas compared to those in more disadvantaged areas.
- In terms of socioeconomic factors, parental level of education again had the most influence, with over one-third (35%) of students whose parents were university educated using a computer 'regularly' compared to only 23 per cent of students whose parents had not completed Year 10. Students whose parents' main source of income was from employment were more likely to state they used a computer regularly (29%), compared to students whose parents' main source of income was from social security (24%).
- Just over four-fifths of students (82%) indicated that they had used the Internet. The Internet was used less frequently than computers. Older students were significantly more likely to state that they had used the Internet, and use it more frequently, compared to younger students.
- Once again, the level of parental education was a key factor in whether students used the Internet. Students whose parents had a university degree,

for example, were almost three times more likely to have ever used the Internet than those whose parents did not have a university degree.

- Almost three-quarters (70%) of students that used the Internet did so at school. The next most common location for Internet use was at home (29%). This finding suggests the important role that schools have as a means of providing access and training in ICT for students of disadvantaged backgrounds. Using the Internet at school was also related to the level of parental education - the higher the level of parental education, the more likely the student was to use the Internet at school.

Implications of the findings include:

- Considering the importance of having home Internet access for children's educational performance, the fact that almost three-quarters of students in this study did not use the Internet at home is of concern, particularly given that almost half of the comparable Australian population has home Internet access. Finding ways to increase the home access of low-income families to the Internet should therefore remain a policy priority for all sectors (government, private and nonprofit) aiming to bridge the digital divide.
- Previous studies have shown that the level of parental education is strongly associated with factors such as investment in resources that promote learning. Having access to the Internet and computers is now a key educational resource that influences educational outcomes. This has at least two further implications:

i) The costs of these resources, as with other educational costs in general, are increasingly being pushed onto individual families. This further compounds the problem for families in financial disadvantage who often struggle to meet the basic costs of their children's education. It therefore reinforces the need for programs, such as *Learning for Life* that aim to assist families in financial disadvantage, to meet some of the costs associated with their children's education;

ii) Policies aimed at bridging the digital divide should not only focus on reducing the cost of ICT but also on ensuring that programs that provide appropriate parenting support also emphasise the educational importance of having home access to computers and the Internet. This may mean that access and training programs should focus just as much on parents as they do with children. Once again, the dual-generation approach (focus on parents and children) of programs such as *Learning for Life* provide an appropriate framework within which to embed such initiatives.

- Finally, schools are important in closing or leveling the access gap, as most students use computers and the Internet at school. Reinforcing the role of parental education, however, the likelihood of students using the Internet at school also increased in line with the educational level of their parents. Greater research and policy attention needs to be given to the role of schools, teachers and parents in the 'ABC of the digital divide'.

Chapter One

The spending patterns and other characteristics of low-income households

Ann Harding, Rachel Lloyd and Harry Greenwell [1]

Introduction

While there may be disagreement on how financial disadvantage is best measured, there is little doubt that the lack of financial resources is a significant barrier to people's ability to participate in society. This chapter complements our previous research on trends in financial disadvantage in Australia by using measures that go beyond income alone (Harding & Szukalska 2000; Harding et al 2001). The chapter attempts to enhance our understanding of financial disadvantage in Australia today, by focusing on the spending patterns and other characteristics of low-income households.[2]

The analysis reported here is based on the 1998-99 Household Expenditure Survey (HES) confidentialised unit record file, released by the Australian Bureau of Statistics (ABS) in September 2002. For this sample of just under 7,000 households, the ABS collected information on households' incomes, spending, debts, financial stress and other socio-demographic characteristics. Further details on the data source and methodology used are contained in Appendix one.

The first section of the chapter divides all Australian households into five equally sized groups, and looks at the spending patterns of low and high-income households and the average Australian household. Different types of households are not equally likely to be represented among low-income households, with households containing older Australians aged 65 years and over and single people living alone dominating the bottom of the income distribution. Accordingly, the next section examines the spending patterns and degree of housing stress experienced by different types of low income households, including single Australians, sole parents, couples with and without children, and older Australians.

The chapter then examines spending on education by Australian households, including spending on tertiary fees and HECS by different types of households. Our previous research has noted the important link between education and lifetime economic outcomes (Harding et al 2001). Rates of financial disadvantage among those aged 15 and over decline sharply as educational qualifications increase, with the poverty risk among those with university education being less than half that for those with no post-secondary qualifications. A recent report commissioned by the Department of Family and Community Services stated that young people who obtain tertiary qualifications have superior labour force outcomes to those who do not, highlighting that young people who complete Year 12 achieve better outcomes than those who do not (Pawagi 2002: 3).

In the light of recent debate on the existence of a 'digital divide', the subject of Chapter three, the next section explores the spending of different types of households on telecommunications, the Internet and computers.

The final section explores the value to households of the government provision of free or subsidised social services, such as education, health and housing, given that these services (often also referred to as the 'social wage') play an important role in supporting the living standards of Australians with low-incomes.

Expenditure Patterns of Low-income Households

This section compares the expenditure patterns of average households with those on low and high incomes. To do this, households were ranked according to their 'equivalent incomes' - that is, incomes were adjusted using an equivalence scale in order to take account of differences in the household size (see Appendix 1 for details). Once households were ranked by income, they were then divided into five equal groups, or quintiles, so that the spending patterns of each group could be compared. Households in the bottom and top quintile are referred to respectively as 'low-income' and 'high-income' households.

In 1998-99, the average expenditure on current goods and services by Australian households was $699 per week (Table 1.1). In contrast, low-income households spent an average of $348 a week while high-income households spent about $1040 a week. In other words, high-income households spent about three times as much as low-income households.

There are some categories of expenditure where low-income households spend much less than the average Australian household. Spending by low-income households each week on alcohol and miscellaneous goods and services, for example, is about one-third of that spent by the average Australian household. Spending on clothing and footwear, household furnishings and equipment, medical care and health and recreation is less than one-half that of the average household.

Some of the most striking differences, however, are not in the domain of spending on goods and services but in saving. The ABS has warned that the difference between the income and spending of households shown in the Household Expenditure Survey cannot be regarded as a measure of saving (ABS 2000: 12). While there are several reasons for this, a key reason is that income does not cover all current receipts as it is collected on a 'usual receipts' basis (so that capital gains and inheritance are not included). While the difference between income and spending shown in Table 1.1 can thus not be regarded as a measure of saving, the results nonetheless paint a clear trend of higher income households saving more than lower to middle income households.

The HES does, however, provide additional detail on three other sources of investment or saving. The ABS records repayments of the principal of the mortgage on the home, other capital housing costs (such as renovations and investment properties), and superannuation and life insurance. These 'investment expenditures' can also be viewed as saving, as they result in the accumulation of an asset. Nevertheless, it must be emphasised that many other forms of saving - such as through bank deposits or share purchase - are not covered here, so that the analysis is only partial.

Low-income households are spending only $4 a week on paying off the principal in their housing loan and less than another $1 on capital housing costs (Table 1.1). This is about one-seventh of the spending by the average Australian household on these items. Low-income households are also devoting only $2 a week to superannuation and life insurance, which represents only about one-tenth of the

Table 1.1 Estimated weekly average household expenditure for households, ranked by quintile of equivalent disposable income, 1998-99

	Quintile of Equivalent Disposable Income[a]					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
	$	$	$	$	$	$
Current Housing Costs	59.6	72.1	97.5	113.2	145.3	97.6
Domestic Fuel And Power	13.7	17.0	19.4	19.3	20.1	17.9
Food and Non Alcoholic Beverages	75.3	109.9	139.1	147.9	163.0	127.1
Alcoholic Beverages[b]	6.8	12.9	18.9	26.1	37.5	20.4
Tobacco Products[b]	8.8	10.0	12.2	11.7	11.0	10.7
Clothing And Footwear	13.5	21.1	35.1	37.3	51.9	31.8
Household Furnishings and Equipment	17.8	34.2	41.0	52.5	65.4	42.2
Household Services and Operation	26.8	36.0	43.6	48.3	51.7	41.3
Medical Care and Health Expenses	15.2	26.4	35.5	37.2	48.2	32.5
Transport	47.2	78.9	130.6	152.2	179.2	117.7
Recreation[b]	36.6	64.0	90.7	103.2	149.2	88.8
Personal Care	7.0	10.0	13.9	16.2	21.5	13.7
Miscellaneous Goods And Services	19.5	37.3	61.2	73.7	95.0	57.4
Total Expenditure on Goods and Services	347.7	529.9	738.6	838.6	1039.0	699.1
Mortgage repayments of principal on own home	3.9	11.4	25.3	41.4	56.1	27.7
Other capital housing costs	**0.7	*22.7	*32.9	43.5	59.7	31.9
Superannuation & life insurance	*2.2	5.0	18.1	28.5	61.1	23.0
Total Expenditure	354.5	568.9	815.0	952.1	1215.9	781.7
Difference between disposable income and total expenditure	-121.8	-150.8	-148.7	-52.3	96.0	-75.4
Gross income	232.7	418.2	666.3	899.8	1311.9	706.3
Income tax [c]	0.9	22.3	121.2	232.3	514.8	178.5
Disposable Income	233.6	440.4	787.4	1132.2	1826.7	884.8

Source: 1998-99 Household Expenditure Survey

Notes

a) The equivalent disposable income for each household was calculated using the modified OECD equivalence scale.

b) Expenditure on alcohol, tobacco and gambling (recreation) are known to be understated (ABS 2001: 44).

c) Income tax data are estimated by the ABS.

* Estimates are marked with a single asterisk in cases where the relative standard error is between 25 and 50 per cent and a double asterisk where the relative standard error exceeds 50 per cent.

spending of the average household on superannuation. This is partly due to lifecycle factors, with the bottom quintile containing a large proportion of older Australians.

These results accord with a recent study of wealth inequality in Australia, which found that wealth was much more unequally distributed than income, with the richest 10 per cent of Australians owning 45 per cent of total household wealth (Kelly 2001). While inherited wealth plays an important part in determining the distribution of wealth, another key factor is the much higher investment expenditures of high-income groups, demonstrated again in Table 1.1.

A clearer picture of relative spending patterns by income is obtained by looking at spending on different items as a percentage of total spending. Because of the difficulties created by sampling error, we have focused here on spending on goods and services, and ignored the 'savings' items discussed above. Table 1.2 shows that, as expected, low-income households devote proportionately more of their total budget to the necessities of life. More than half of the entire weekly budget of low-income households is devoted to just three spending categories - food, housing and transport. Just over a fifth of the weekly spending of low-income households is devoted to food, compared with about 18 per cent for the average

Australian household and 15.7 per cent for high-income households. Housing is also a major cost for low-income households, comprising about 17 per cent of total spending on goods and services. For middle to high-income households it comprises only 13 to 14 per cent of total expenditure.

Consistent with earlier studies while low-income households spend fewer dollars each week on tobacco products than middle and high-income households, those dollars still amount to a higher proportion of their total expenditure (Harding and Percival 1997). Low-income households, for instance, spent 2.5 per cent of total spending on these products compared with 1.1 per cent for high-income households (Table 1.2).

High-income households devote a greater slice of their total spending to recreation than do low-income households, while transport costs are more important for middle and high-income households than for low-income households. The overall figures for transport, however, disguise the very different spending patterns by households in the different income groups. High-income households have almost twice as many registered cars and motor cycles as low-income households (1.88 cars and cycles per household for high-income versus 0.86 cars and cycles for low-income households). Accordingly, transport spending for high-income households is skewed towards cars. Despite this, expenditure on public transport ranges from $1.40 a week for low-income households to $5 a week for high-income households, making it a slightly more significant item in the weekly budget for high-income than for low-income households.

Table 1.2 Estimated average percentage of household expenditure on goods and services devoted to different expenditure items, by quintile of equivalent disposable income, 1998-99

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
	%	%	%	%	%	%
Current Housing Costs	17.1	13.6	13.2	13.5	14.0	14.0
Domestic Fuel and Power	3.9	3.2	2.6	2.3	1.9	2.6
Food and Non Alcoholic Beverages	21.6	20.7	18.8	17.6	15.7	18.2
Alcoholic Beverages	1.9	2.4	2.6	3.1	3.6	2.9
Tobacco Products	2.5	1.9	1.7	1.4	1.1	1.5
Clothing and Footwear	3.9	4.0	4.7	4.4	5.0	4.5
Household Furnishings And Equipment	5.1	6.5	5.6	6.3	6.3	6.0
Household Services and Operation	7.7	6.8	5.9	5.8	5.0	5.9
Medical Care and Health Expenses	4.4	5.0	4.8	4.4	4.6	4.7
Transport	13.6	14.9	17.7	18.1	17.3	16.8
Recreation	10.5	12.1	12.3	12.3	14.4	12.7
Personal Care	2.0	1.9	1.9	1.9	2.1	2.0
Miscellaneous Goods and Services	5.6	7.0	8.3	8.8	9.1	8.2
Total Expenditure on Goods and Services	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1998-99 Household Expenditure Survey

Table 1.3 Household types by quintile of equivalent disposable income, 1998-99[a]

	Quintile of Equivalent Disposable Income						
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All	Proportion of all households
	%	%	%	%	%	%	%
Single person <30	19	9	15	36	22	100	2.8
Single person 30 +	28	12	12	22	26	100	12.6
Couple no children	11	11	18	21	40	100	16.2
Couple with children	7	16	30	27	19	100	32.3
Sole parent	30	32	19	11	8	100	8.1
Other family types	10	19	21	24	26	100	8.7
Older Australians	45	36	11	5	3	100	19.4

Source: 1998-99 Household Expenditure Survey

Notes

a) A particular household can only fall into one of these groups. Households were first allocated to the Older Australians category (where either the head or spouse was aged 65 years or more) and any household meeting this criteria was thus excluded from the other categories. In other words, 'Couple no children' only includes households where neither member of the couple is aged 65 or over.

Expenditure Patterns by Household Type

There are some strong correlations between low-income households and certain household types - particularly single people, older Australians and sole parents (Table 1.3). In contrast, a disproportionate number of couples without children and mixed households can be found in the upper income quintiles. This suggests that our understanding of the needs and preferences of low-income households can improve by studying the spending behaviour of various household types.

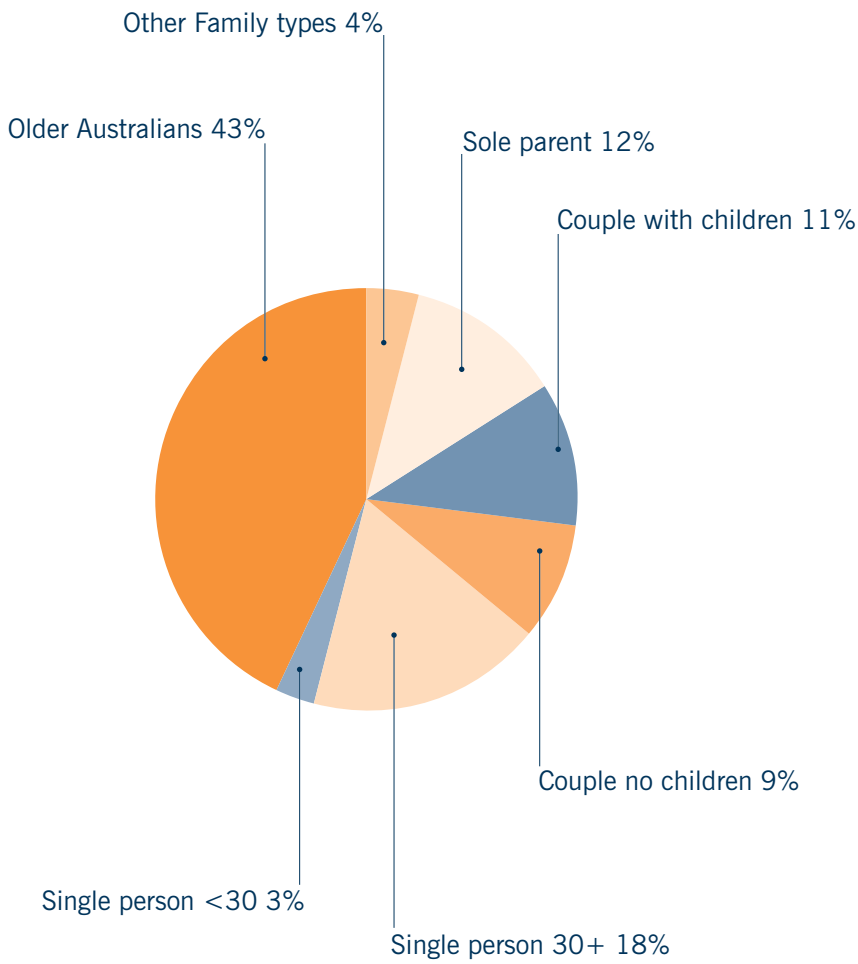
According to the HES data, there were 7.1 million households in Australia in 1998-99. Table 1.3 shows the distribution of different household types in Australia. It shows that almost one-third of households consist of couples with children, while another one-fifth are households containing older Australians. It should be noted that there are relatively few single persons aged less than 30 years living by themselves, as this group represents only 2.8 per cent of all households. We have separately analysed this group below because they are of interest to policy makers, but it is important to remember that there are relatively few such households and some of the results may be affected by small sample size.

Figure 1.1 shows the types of households that are in the lowest income quintile. This emphasises again how older Australians are concentrated at the bottom of the income spectrum, with such households making up 43 per cent of all low-income households. Just over another fifth of low-income households are single person households - both younger singles under age 30 and middle-aged singles. Couples with children, couples without children and sole parents each make up about another one-tenth of those households with low incomes.

This section provides an overview of the spending patterns of particular household types by quintile. In the earlier analysis we looked at the capital expenditure of all Australian households. Here, however, we are mainly concentrating upon spending on goods and services. This is partly

because negative 'other capital housing' spending was recorded for some of our smaller population sub-groups. This appeared to be due to one or two households having sold an investment property during the time that they were included in the HES survey.[3] While such negative expenditures are expected to average out across sufficiently large population groups, they can be a problem for the analysis of small population groups.

Figure 1.1 Types of households with low incomes, 1998-99[a]



Source: 1998-99 Household Expenditure Survey

Notes

a) The chart shows the types of households in the lowest quintile of equivalent disposable income.

Table 1.4 Estimated average percentage of household expenditure on goods and services, by spending category, income quintile and household type, 1998-99

	Single persons aged <30 years			Other single persons			Couples without children			Couples with children			Sole Parents			Older Australian Households		
	Low-income	High-income	All	Low-income	High-income	All	Low-income	High-income	All	Low-income	High-income	All	Low-income	High-income	All	Low-income	High-income	All
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Current Housing Costs	28.7	18.9	24.5	21.9	19.6	19.6	13.7	15.0	14.3	15.1	11.2	12.2	24.0	12.5	17.7	14.3	*14.3	11.1
Domestic Fuel & Power	3.1	1.8	2.3	4.2	2.2	2.8	3.4	1.9	2.3	3.4	2.1	2.5	4.3	1.8	3.0	4.4	2.0	3.5
Food & Beverages	18.2	12.6	13.0	17.7	14.4	15.3	19.9	15.6	17.0	21.9	16.7	18.9	22.4	15.2	19.4	23.2	13.3	20.5
Alcoholic Beverages	*3.8	*3.1	3.6	2.7	3.7	3.4	2.2	3.3	3.3	1.3	3.5	2.7	1.0	2.8	2.1	2.2	*1.3	2.4
Tobacco Products	*2.8	*1.3	1.8	3.5	1.4	2.2	2.1	1.0	1.4	2.2	0.9	1.3	3.6	*0.9	2.3	1.7	**0.3	1.1
Clothing & Footwear	**1.8	*4.5	2.9	*3.1	2.9	3.0	2.6	4.6	4.0	4.4	6.0	5.3	4.9	4.9	4.4	4.0	1.8	4.1
Household Furnishings & Equipment	*4.6	*6.3	7.5	6.0	5.5	6.3	6.5	7.1	7.0	4.0	6.4	5.8	3.5	4.6	4.3	5.7	*9.6	6.7
Household Services & Operation	*7.9	4.5	5.2	7.9	4.8	5.8	7.2	4.6	5.0	8.0	5.8	6.0	8.5	4.1	7.2	7.6	5.5	7.0
Medical Care & Health	*1.2	*3.5	2.2	3.5	4.5	4.3	4.3	4.9	5.1	3.3	5.0	4.5	2.0	5.2	3.4	6.7	6.0	7.3
Transport	*10.7	*16.8	14.2	14.0	15.4	14.6	15.7	16.5	16.9	17.1	15.9	17.5	9.1	22.3	15.8	12.7	**23.4	15.1
Recreation	11.5	16.2	14.0	8.7	14.7	12.2	12.4	14.5	13.7	10.4	14.6	12.6	8.9	13.1	11.0	11.1	14.9	13.6
Personal Care	*1.3	*1.2	1.3	1.6	1.4	1.6	1.9	2.3	2.1	1.9	2.1	1.9	1.7	2.2	2.0	2.4	*2.1	2.2
Misc Goods & Services	*4.4	*9.5	7.7	5.2	9.6	8.8	*8.2	8.6	8.0	7.0	9.9	8.9	6.0	10.4	7.4	4.1	5.5	5.3
Total Expenditure on Goods & Services	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1998-99 Household Expenditure Survey

Notes

* Estimates are marked with a single asterisk in cases where the relative standard error is between 25 and 50 per cent and a double asterisk where the relative standard error exceeds 50 per cent.

Couples with children

During the past two decades, low-income couples with children have been a particular focus of social policy, given earlier research suggesting high poverty rates among this group (Mitchell et al 1994). One policy landmark was the introduction of Family Income Supplement in 1983, which directed higher cash assistance towards low-income working families that were previously outside the social security system. This assistance, and that to families with children dependent on social security, has been reformed and enhanced several times since then, being one of the most active areas of policy reform over the past 15 years.

The living standards and expenditure patterns of couples with children are also of great interest simply because so many Australians live in this type of household. At first glance, the proportion of total spending directed towards housing by low-income couples with children does not seem particularly high. While 15.1 per cent of their total spending is on housing, this is only slightly above the figure for all Australian households of 14 per cent (Table 1.4). It is also substantially lower than for the three groups - namely low-income young singles, older singles and sole parents - for whom housing absorbs such a large proportion of total spending and income that it suggests difficulty in making ends meet. Housing costs, however, do take a much higher proportion of total spending for low-income couples with children than for all couples with children - 15.1 versus 12.2 per cent.

One widely accepted way to measure housing stress is to examine housing costs as a percentage of income. Households that spend more than a certain percentage of their income on housing are thought to be in housing stress. While studies use different thresholds for measuring housing stress, 30 per cent or more of disposable income is a widely used benchmark (Landt and Bray 1997; National Housing Strategy 1991). A related issue is that, even where households are spending more than 30 per cent of their disposable income on housing, if they have a reasonably high-income this may be a matter of choice rather than an indicator of housing stress. Accordingly, analysts often look only at those on lower incomes, such as the bottom 20 or 40 per cent of the income distribution. If we confine our analysis to the bottom quintile of the income distribution, the housing stress indicator suggests that housing costs exceed 30 per cent of disposable income for just over two-fifths of all low-income couples with children (Figure 1.2).

Food is again a very important part of the budget for low-income couples with children, taking 21.9 per cent of total weekly spending (Table 1.4). Low-income couples with children also place much less emphasis upon recreation in their spending than the average Australian household (10.4 per cent of total spending in comparison with 12.7 per cent on average).

Couples with children are somewhat less likely to own a car than couples without children or middle-aged singles (see Table 1.6). However, three-fifths of adults living in low-income couple with children households own a car or motorcycle, and the proportion of weekly spending devoted to transport is much the same for low-income couples with children as for all Australian households, at about 17 per cent.

Sole parents

Previous research has shown that sole parents have particularly high poverty rates (Harding et al 2001). The expenditure patterns of low-income sole parents provide another indication that many of them find it difficult to make ends meet. Almost one-quarter of the total weekly spending of low-income sole parents is devoted to current housing costs. This is substantially higher than the 17.7 per cent reported by all sole parent households and the 14 per cent recorded by the average Australian household. According to Figure 1.2, almost half of all low-income sole parents are in housing stress.

The slice of total spending devoted to food is also high for low-income sole parents, at 22.4 per cent (Table 1.4). Overall, therefore, housing and food absorbs just under half of the total weekly spending of low-income sole parents. The slice of weekly spending devoted to alcohol by low-income sole parents is the lowest among any of the household groups examined, at only one per cent of total spending. Smoking, however, features more prominently, taking 3.6 per cent of total weekly spending.

As a result of the dominance of housing and food, expenditure on many other goods and services by sole parent families is much lower than the Australian average. Only nine per cent of the total spending of low-income sole parent households is devoted to recreation. This particularly low figure for households where there are children suggests that once the money for necessities is put aside there is little left for other commodities and services.

The proportion of total spending allocated to transport, at only nine per cent, is also particularly low. Only one in every two adults living in a low-income sole parent household owns a car (Table 1.6) suggesting the need for low-income sole parent households to rely on public transport because of the prohibitive costs of owning a vehicle. The proportion of sole parents owning cars increases rapidly as income increases suggesting that, as soon as income allows, sole parents purchase a car to ferry their family around.

The financial stress hinted at by the spending patterns of sole parents becomes more understandable when patterns of pension and allowance receipt are studied. Fully 94 per cent of all adults in low-income sole parent families are receiving pensions or allowances - a proportion that is higher than that for almost all of the other low-income household groupings examined in this chapter (Table 1.7). For middle and higher income sole parents, the proportion receiving social security is higher than for any of the other household types, except for older Australians. This points to the high dependence of sole parents upon income support.

Single people

In this analysis, we divided single people into those aged less than 30 years and those aged between 30 and 64 years.[4] Previous research has shown that young singles are a group with particularly high poverty rates (Harding et al 2001), so the expenditure patterns of low-income young singles are of particular interest. Particular caution has to be attached to the results for this group, however, as there are comparatively few such households and the results are thus less statistically reliable. By analysing households here, we have avoided one possible further

problem apparent in earlier research of independent singles still living with their parents being counted as financially disadvantaged. Nevertheless, there may still be substantial ad hoc transfers from parents to their children in their twenties which are not captured in this analysis, even though such children have left the family home and are living by themselves.

The results in Table 1.4 suggest that younger singles, perhaps more than any other group considered, place maintaining a roof over their heads ahead of many other needs. On average low-income younger singles, spend an estimated 29 per cent of their total weekly spending on current housing costs. In most cases this group is struggling in the private rental market, with 70 per cent renting privately.

Using the housing stress indicator discussed earlier, low-income young singles have the highest rate of housing stress of any of the household types considered here, with almost four in every five low-income young singles reporting housing costs that exceed 30 per cent of their disposable income (Table 1.5 and Figure 1.2).

Table 1. 5 Estimated percentage of households in housing stress, by household type, 1998-99

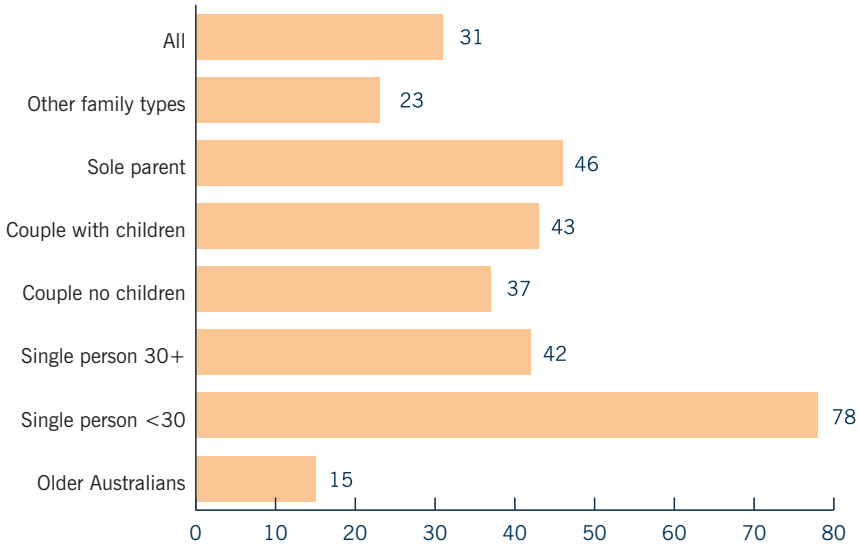
	Quintile of Equivalent Disposable Income		
	Bottom 20%	Next 20%	Average for all households [a]
	%	%	%
Single person <30	78	64	42
Single person 30 +	42	29	24
Couple no children	37	20	11
Couple with children	43	19	10
Sole parent	46	34	29
Other family types	23	26	14
Older Australians	15	8	11
All	31	19	15

Source: 1998-99 Household Expenditure Survey

Notes

a) The final column shows the proportion of all households for whom current housing costs exceed 30 per cent of disposable income, irrespective of whether those households are confined to the bottom quintile. It should not be considered a measure of housing stress, in the same way that it is for low-income households.

Figure 1.2 Estimated percentage of low-income households in housing stress, by household type, 1998-99[a]



Source: 1998-99 Household Expenditure Survey

Notes

a) This graph only refers to households in the lowest quintile of equivalent disposable income.

Low-income younger singles spend the same proportion of their weekly budget on food as the average Australian household, but direct far less towards transport and recreation. The transport results again appear to be strongly linked to car ownership, with just over half of all low-income young singles reporting car or motorcycle ownership, compared with 100 per cent of all high-income young singles (Table 1.6).

Just over four-fifths of all low-income young singles report receiving pensions and allowances while, as Table 1.7 indicates, the top 40 per cent of young singles receive essentially no social security payments.

What about other low-income singles - those aged 30 to 64 years? They are again devoting a high proportion of their total spending to housing (22 per cent), although not as much as younger singles. Another key difference compared with younger singles is the much higher proportion of spending directed towards transport. This is directly linked with car ownership patterns. Almost three in every four low-income older singles own a car, compared with only half of low-income younger singles. In an interesting pointer to the lifestyle that one can afford when children are not present, high-income older singles often have two or more cars or motorcycles, as they report, on average, more than one car or motorcycle per household (Table 1.6).

As Table 1.7 indicates, a striking 90 per cent of low-income older singles receive some pension or allowance - a rate exceeded only by low-income sole parents

and older Australians, where the incidence of receipt reaches 94 and 96 per cent respectively. While we are accustomed to images of sole parents and older Australians being heavily dependent upon social security payments, there is perhaps less understanding that the economic reforms and shifts in the labour market of the past two decades have affected many middle-aged single Australians.

Couples without children

Couples without children tend to be at both ends of the lifecycle, with many being in the life phase before they have children and others being 'empty nesters' whose children have left home. Low-income couples without children again devote a somewhat higher proportion of their weekly budget towards food than the average Australian household (Table 1.4). Just over one-third of low-income couples without children are in housing stress, with their average current housing costs exceeding 30 per cent of their disposable income - a relatively low rate of housing stress (Table 1.5).

Transport costs again loom large in the budget of low-income couples without children, absorbing just under one-fifth of total spending. Just fewer than 60 per cent of the adults living in these low-income couple households own their own car or motorcycle, rising steadily to 91 per cent of those adults living in high-income couples (Table 1.6).

Table 1. 6 Estimated average number of registered cars or motorcycles per 100 adults

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
Single person <30	51	87	70	83	100	79
Single person 30 +	71	82	95	98	115	93
Couple no children	59	79	86	87	91	85
Couple with children	61	66	75	77	84	75
Sole parent	53	64	67	74	74	65
Other family types	45	52	57	67	83	64
Older Australians	50	62	69	76	94	60
All	55	65	74	78	89	73

Source: 1998-99 Household Expenditure Survey

Table 1.7 Estimated percentage of adults within each household that receive pensions or allowances

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
Single person <30	84	35	16	0	0	21
Single person 30 +	90	59	14	2	1	34
Couple no children	84	50	11	2	1	17
Couple with children	80	53	36	23	6	32
Sole parent	94	71	51	34	11	61
Other family types	86	61	36	21	5	34
Older Australians	96	92	56	28	24	83
All	90	67	35	18	5	40

Source: 1998-99 Household Expenditure Survey

Eight in every 10 adults living in low-income couples report receiving some pensions or allowances, dropping very sharply to only one per cent of those living in high-income couples without children (Table 1.7).

Older Australians

The final group that we have focused on is older Australians, defined as households where either the head or the spouse is aged 65 years or more. As Table 1.3 shows, just over two-fifths of all households headed by older Australians are in the lowest income quintile and four-fifths are concentrated into the two lowest income quintiles. Older Australian households are thus more heavily concentrated into lower income households than any of the other household types examined in this analysis. Only three per cent can be found in the highest income quintile. This does not necessarily mean that all such households are struggling financially. Older Australians have high home ownership rates and many have greater wealth than younger generations (Harding et al 2002).

There are some differences between the expenditure patterns of low-income older Australians and those of all older Australians and all Australian households generally. Older Australians generally have lower housing costs than younger aged Australians, as in many cases they have fully paid-off their home. This explains why older Australians on average devote only 11.1 per cent of their total spending to their home, while the average for all Australian households is 14 per cent. Interestingly, however, both low and high-income older Australians devote a relatively high proportion of their total spending to their home (14.3 per cent), while the middle 60 per cent of older Australian households devote well under 10 per cent of their total spending to housing.

Figure 1.2 and Table 1.5 suggest that comparatively few low-income older Australians are in housing stress, with less than one in every seven experiencing current housing costs that exceed 30 per cent of their after-tax income. This is a lower rate of housing stress than for any of the other low-income household categories examined in this study. For the second bottom quintile of older Australians the rate of housing stress falls rapidly, with only eight per cent recording current housing costs that exceed 30 per cent of their after-tax income - again a very much lower rate than for any of the other family types considered.

Focusing again on low-income older Australian households, 23 per cent of their total weekly budget is devoted to food, well above the Australian average of 18.2 per cent (Table 1.4). In contrast, the proportion of their total spending directed towards transport and recreation is lower than the Australian average. Providing an indication of a very different lifestyle, high-income older Australians spend proportionally more than the average Australian household on transport and recreation - for example, 14.9 per cent versus 12.7 per cent of total spending on recreation.

A very high 96 per cent of all adults living within low-income older households report that they receive pensions and allowances, falling sharply to only 24 per cent of all high-income older households (Table 1.7). While Table 1.7 suggests that most older Australian households whose income places them in the top two income quintiles are self-funded retirees, the extent of movement off the age pension should not be overstated.

As Table 1.3 shows, a mere eight per cent of all older Australian households have sufficient income to gain entry to the top two quintiles, with most older Australian households being confined to the bottom two income quintiles.

Education

Education is one of the key factors affecting lifetime economic opportunity, with the risk of being in poverty declining sharply and lifetime earnings increasing as the level of educational qualifications rises (Harding et al 2001: Machin 1998). As is discussed in the next chapter, education and schooling can also play a very important role in socialising children and developing a sense of social inclusion and participation. In addition, there are inter-generational effects, with evidence that children from families with a low socio-economic status do not perform as well as they potentially could at school compared to children from families with a high socio-economic status (Considine and Zappalà 2002; Zappalà and Parker 2000).

About 95 per cent of school age children in high-income households live in the households we have classified as 'couple with children', with only the remaining five per cent of children in high-income households living in sole parent households. Looking just at high-income couple with children families, three-fifths of the children go to government schools and the remaining two-fifths go to non-government schools (ABS 2001b).

Table 1.8 indicates that attendance at a non-government school is strongly correlated with household income. Low-income sole parents are the group least likely to place their children in private schools, with 85 per cent of all children living in such families attending government schools. Conversely, high-income sole parents are the group most likely to send their children to non-government schools, with 45 per cent of children in such families attending non-government schools and the remainder attending government schools. It should be remembered, however, that there are relatively few sole parents in the top income quintile, so these results are based on a small sample size. In addition, non-government schools include Catholic schools, which traditionally have a high proportion of students from low-income families and fees often relate to ability to pay.

Table 1.8 Estimated percentage of school children in government and non-government schools, by household type and income, 1998-99

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
	%	%	%	%	%	%
Couples with children						
% of children in government school	83	79	70	63	58	69
% of children in non-government school	17	21	30	37	42	31
Sole parents						
% of children in government school	85	82	75	61	55	80
% of children in non-government school	15	18	25	39	45	20
All households with children						
% of children in government school	84	80	71	63	58	72
% of children in non-government school	16	20	29	37	42	28

Source: 1998-99 Household Expenditure Survey

Spending on schooling increases steadily with household income, reflecting the higher proportion of children in non-government schools as household income increases. Looking just at couples with children, for low-income households schooling costs about $11.10 a week, taking up 1.8 per cent of the total weekly budget for goods and services. For high-income couples with children, schooling costs about $51.30 a week, comprising a higher 3.9 per cent share of the weekly budget (Table 1.9).

There has recently been extensive debate about the Higher Education Contribution Scheme (HECS) burdens facing tertiary students as the government has floated proposals for reforming the higher education system (Nelson 2002a,b). Table 1.9 also examines HECS repayments made by each income quintile and tertiary fees and costs. Both HECS repayments and tertiary costs increase steadily with household income. This may not tell us much, however, about how important such imposts are upon those actually facing them, as the proportion of households facing such charges may vary systematically by income. Accordingly, the final two lines in Table 1.9 examine such tertiary charges only for those households who reported paying them. The results show that HECS repayments increase strongly with income and average tertiary fees and costs also increase (though not as strongly) with household income.

Table 1.9 Estimated average spending on schooling by households with school children and spending on tertiary fees and HECS by all households and by households spending on tertiary charges, 1998-99[a]

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
Costs of schooling						
Couples with children						
* weekly spending on schooling $	11.1	18.0	23.2	30.3	51.3	27.5
* as % of total spending %	1.8	2.6	2.7	3.0	3.9	2.9
Sole parents						
* weekly spending on schooling $	*5.5	5.9	*16.8	**32.4	**70.6	11.7
* as % of total spending %	1.5	1.2	2.6	4.2	7.0	2.1
Costs of tertiary education						
All households						
* HECS repayments $	**0.0	0.4	1.4	2.2	4.6	1.8
* tertiary fees and costs $	0.7	2.5	5.8	6.3	9.8	5.0
Households paying tertiary charges						
* HECS repayments $	**0.6	*3.6	8.0	11.0	17.4	10.6
* tertiary fees and costs $	10.1	21.6	32.3	31.1	37.1	30.3

Source: 1998-99 Household Expenditure Survey

Notes

a) The expenditures include average primary and secondary school fees (government and non-government) for couples and sole parents with children in either primary or secondary (government or non-government) schools.

* Estimates are marked with a single asterisk in cases where the relative standard error is between 25 and 50 per cent and a double asterisk where the relative standard error exceeds 50 per cent.

The 'Digital Divide'

As Chapter three explores in greater detail, there has been much discussion in Australia about the 'digital divide' - disparities in the use of the Internet and other new technologies across different social groups. It points out that large proportions of Australians do not participate in the knowledge economy because of their economic and social circumstances. The most important drivers of Internet access are educational qualification and income (Lloyd et al 2000). Consistent with this research, Zappalà and McLaren (in Chapter 3) find that the most important driver of Internet access among *low-income* households is educational qualification. Unfortunately, the HES does not directly report use of telephone services, computers and the Internet - only the estimated expenditure by household on relevant products and services.

The possible sale of the rest of Telstra has prompted great interest in the telecommunications usage patterns of the disadvantaged. As Table 1.10 shows, even low-income households spend considerable amounts each week on telephone services and equipment,[5] deeming access to a phone as one of the essentials of modern day life. At just under $10 a week, low-income older Australians spend less each week on telephone services and equipment than any of the other household groups examined, although this partly reflects the lower average number of people in older households. Low-income middle-aged singles, couples without children and sole parents all spend around $15 a week, while the spending of low-income couples with children approaches $23 a week. For couples with children, the $23 spent by low-income households is only slightly less than the $28 a week spent by high-income households.

This suggests that for low-income households, telecommunications charges are a more significant part of the weekly budget than for high-income households. This is confirmed by the results in Table 1.10 showing spending on telephone services and equipment as a percentage of total spending for households generally. For low-income households, telephone charges average 3.8 per cent of total weekly spending. This proportion declines smoothly with rising income, falling to only 2.3 per cent for high-income households.

While spending on computers and the Internet is less essential to survival, having home access to them, as Zappalà and McLaren highlight, is becoming increasingly important to enable all people to fully participate in society (see also Zappala et al 2002). Table 1.10 indicates that there is much greater variation between high and low-income households in terms of spending on computers and the Internet. Older Australians spend the least in this area, confirming the results of earlier research showing that older people are much less likely to use the Internet and computers than younger people (Lloyd et al 2000). Unfortunately, small sample size allied with highly variable expenditures in this area prohibited analysis by household type and quintile. For all older Australian households, however, average weekly spending on the Internet and computers is $1.50 a week, well below the Australian average of $5 a week.

Perhaps once again pointing to the financial stress faced by sole parents, sole parent households spend very little on computers and the Internet, with their average spending of $2.90 also being well below the Australian average. Higher Internet spenders tend to be those households with higher incomes and/or

children, with the average spending of couples without children reaching $5.10, couples with children $6.70 and 'other family types' attaining the highest average spending of $10.60 a week.

Considering all household types together, high-income households spend more than six times each week on computers and the Internet compared to low-income households. As the total weekly spending of high-income households is only three times as much as that of low-income households, high-income households devote a greater proportion of their total budget to computers and the Internet.

The Distribution of Government Taxes and Benefits

Considering only the cash incomes of families does not take account of the 'social wage' - the highly significant spending by governments on the infrastructure and services that benefit all Australians. In the absence of a high social wage, much higher individual incomes are necessary for community participation to take place. People in financial disadvantage, for example, can still attain a good education or access health care if the provision of public schools, universities, and the public health system are of high quality and easily accessible.

An important issue is thus the extent to which government supports the living standards of low-income groups, via the provision of free or subsidised social services, such as health, education and housing. The following estimates rely on the imputation by the ABS of the value of the usage of these services (ABS 2001a). It should be noted that there are some questions about how well the ABS imputation of health benefits reflects the real world, given growing evidence that usage of hospital and doctor services varies systematically with income (Schofield 1998; Thurect et al 2002).

Ignoring these possible issues about data quality for the moment, Table 1.11 summarises the redistributive impact of

Table 1.10 Estimated average weekly spending on telephone services and equipment, computer and the Internet, by household type, 1998-99

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
Spending on telephone services and equipment - $ per week						
Single person <30	*16.8	15.9	*20.8	15.3	25.9	18.8
Single person 30 +	13.2	15.3	16.3	15.0	17.3	15.3
Couple no children	15.8	16.2	16.8	19.1	22.3	19.3
Couple with children	22.5	21.5	23.1	23.9	28.3	24.0
Sole parent	14.4	20.3	24.6	25.2	24.1	20.2
Other family types	17.8	24.3	29.1	35.3	30.3	28.9
Older Australians	9.6	10.2	15.3	18.5	18.0	11.2
All						
- $ per week	13.4	16.6	21.5	22.4	24.3	19.6
- as % of weekly spending	3.8	3.1	2.9	2.7	2.3	2.8
Spending on computers and the Internet - $ per week						
- $ per week	1.4	2.8	6.5	5.3	8.8	5.0
- as % of weekly spending	0.4	0.5	0.9	0.6	0.8	0.7

Source: 1998-99 Household Expenditure Survey

Notes

* Estimates are marked with a single asterisk in cases where the relative standard error is between 25 and 50 per cent and a double asterisk where the relative standard error exceeds 50 per cent.

government upon households at different income levels. Direct cash benefits, such as age pension and unemployment allowances, are heavily skewed towards lower income groups. Indirect benefits, via the usage of free or subsidised social services, are also skewed towards lower income groups but are not nearly as targeted towards lower income groups as the direct cash benefits. In particular, the second lowest and middle income quintiles receive higher indirect benefits than the lowest income quintile. One of the key causes of this is that we are not taking direct account here of the major variations in household size within each of the quintiles. Even though older Australians are concentrated in the lowest income quintile and they have high health benefits, average household size leaps from about 2 people for the bottom quintile to 2.7 people for the second quintile. In general, larger households receive more indirect benefits than smaller households.

While we looked earlier at the private expenditures of households upon their children's schooling, Table 1.11 emphasises again the importance of the public contribution to education. For low-income households, education benefits amount to an estimated $43.50 a week - almost one-fifth of the disposable income of such households. Clearly, low-income households would experience great difficulty in educating their children and themselves in the absence of the public education system.

The ABS fiscal incidence study suggests a far less progressive distribution of indirect benefits than that shown here (ABS 2001a:12). This is because the ABS ranks households into quintiles of gross income, rather than equivalent disposable (after-income-tax) income, as is done here. In determining which households are high-income and low-income, the ABS thus only looks at the total income of the household, and not how many people that income supports. Families with children tend to consume significant amounts of government-provided social services - but also tend to have middle to high-incomes, as the parents are generally in their peak working years. This is why using an equivalent income measure, adjusted for the number of people within each household, produces such a different profile of benefits relative to an income measure that takes no allowance of household size.

The next section of Table 1.11 traces the impact of those indirect taxes that the ABS has been able to model, including petroleum, alcohol and tobacco taxes.[7] Such taxes are regressive, taking a greater proportion of the income of low-income households than of high-income households. Indirect taxes paid by low-income households, for example, amount to an estimated $38.80 a week - or just under 17 per cent of disposable income. For high-income households, indirect taxes are much higher at $114.70 per week but this represents only 14 per cent of disposable income.

The row of 'Final income' in Table 1.11 is the last income measure considered and incorporates private earnings, social security cash payments, indirect benefits such as education and health and the impact of indirect and income taxes. The relationship between disposable income and final income shows the net impact of the indirect benefits provided by the government and the indirect taxes paid by households. As the final row in Table 1.11 shows, low-income households are net winners from these indirect taxes and benefits, with such indirect benefits and taxes increasing final income by 70 per cent relative to disposable income. For

high-income households, indirect taxes paid exactly cancel out indirect benefits received, leaving both their disposable and final income at the same level. Overall, the final effect of all of the benefits and taxes included below is more progressive than found in the ABS Fiscal Incidence Study (2001:12) because, as noted above, we are ranking households by a needs-adjusted measure of income rather than just gross income unadjusted for household size.

Table 1.11 Estimated average value of benefits received and taxes paid by equivalent income quintile, 1998-99[b] [c]

	Quintile of Equivalent Disposable Income					
	Bottom 20%	Next 20%	Middle 20%	Next 20%	Top 20%	All
	$ pw	$ pw	$pw	$ pw	$ pw	$pw
Direct cash benefits [a]	252.3	202.4	68.8	25.5	6.5	111.0
Gross income	233.6	440.4	787.4	1132.2	1826.7	884.8
Disposable income	232.7	418.2	666.3	899.8	1311.9	706.3
Selected indirect benefits						
- Education	43.5	85.8	106.8	81.0	51.0	73.6
- Health	92.8	106.2	87.6	74.0	61.8	84.4
- Welfare	49.3	45.6	26.4	12.1	2.3	27.1
- Housing	12.6	3.4	1.0	0.4	0.2	3.5
Total indirect benefits	198.3	241.0	221.8	167.5	115.3	188.7
Disposable income + indirect benefits	431.0	659.2	888.0	1067.3	1427.2	895.0
Selected indirect taxes	38.8	60.8	86.1	95.4	114.7	79.2
Final income	392.2	598.3	802.0	971.9	1312.5	815.8
Ratio of final income to disposable income	1.7	1.5	1.2	1.1	1.0	1.2
Average number of usual residents	2.0	2.7	3.1	2.8	2.4	2.6

Source: 1998-99 Household Expenditure Survey

Notes

a) For low-income households average cash benefits are higher than gross income because some households have negative private incomes (e.g. small businesses with losses).

b) The results for the average household differ slightly from those reported in ABS (2001:12). This is because our results are estimated from the publicly released data file for the HES, which has had some amendments made to it by the ABS to ensure protection of the confidentiality of respondents to the survey.

c) Disposable income equals gross income minus income tax. Final income equals disposable income plus indirect benefits minus indirect taxes.

Conclusion

This chapter complements and builds on our earlier research on trends in financial disadvantage in Australia (Harding et al 2001). It enhances our understanding of financial disadvantage in Australia today, by focusing on the spending patterns and other characteristics of low-income households.

In earlier research, sole parents were identified as being the family type with the greatest risk of being in poverty (Harding et al 2001). The analysis presented in this chapter has confirmed that the spending patterns of low-income sole parent families hint at the impact of their straitened financial circumstances upon their lives. Low-income sole parent households devote almost half of their total weekly spending to just two of the necessities of life - housing and food. Almost half of them are in housing stress, in the sense that their housing expenditure equals more than 30 per cent of their after-tax income.

The spending of low-income sole parents on the little luxuries of life is remarkably low in comparison with the average Australian household. Just less than nine per cent of their total weekly budget is devoted to entertainment and recreation, substantially less than the 12.7 per cent of the average household. Spending on alcohol is only one per cent of total expenditure, again the lowest of any of the household types examined. Spending on transport is again extremely low at 9.1 per cent of the total budget, almost half the 16.8 per cent of the weekly budget devoted to transport by the average Australian household. This low spending reflects dependence upon public transport, with only half of all low-income sole parent households reporting car or motorcycle ownership (compared with 73 per cent of households generally).

The children of low-income sole parents are overwhelmingly in public schools rather than non-government schools. Telecommunications charges appear to be a significant issue for low-income sole parents and for low-income households generally, with spending on telecommunications absorbing a higher proportion of total household spending for low-income than for high-income households. Sole parent households spend an average of $2.90 a week on the Internet, compared with $5 for the average Australian household.

Low-income sole parent households are saving very little, devoting less than $4 a week to paying off the principal on the mortgage on their home, to investment properties or home renovations, and to superannuation or life insurance - compared with almost $83 for the average Australian household. These findings accord with recent research that has emphasised how difficult sole parents find it to accumulate wealth (Kelly 2002). Given that 94 per cent of low-income sole parent households report receiving pensions or allowances, the results essentially provide an insight into the living standards of those dependent upon the social security safety net.

Another group identified in previous research as being at particular risk of financial disadvantage was single people, with the risk of such people being in income poverty having increased steadily over the course of the 1990s (Harding et al 2001). In this study we have analysed separately single people who are aged less than 30 years and those aged 30 to 64 years. Particular caution has to be attached to the results for singles aged less than 30 years, as there are comparatively few such households and

the results are thus less statistically reliable.

The results for low-income single persons living by themselves and less than 30 years of age suggest severe financial disadvantage, with almost 47 per cent of the total weekly budget devoted to housing and food. This clearly left relatively little for other spending. Almost four out of every five young singles were in housing stress, with their housing costs taking more than 30 per cent of their after-tax income. This was a higher rate of housing stress than for any of the other low-income household types examined.

The results for middle-aged singles were also suggestive of financial disadvantage, with 40 per cent of the total weekly budget being devoted to housing and food. Spending on recreation by middle-aged singles was also remarkably low, at 8.7 per cent of total spending. This was the lowest proportion of the weekly budget devoted to recreation of any of the household types examined A high 90 per cent of low-income middle-aged singles reported receipt of pensions and allowances. Overall, this seems to suggest a profile of high unemployment, hidden unemployment and disabilities among this group.

While older Australians comprised 43 per cent of all low-income households, they recorded a lower degree of housing stress than any of the other low-income household types examined, reflecting the importance of home ownership in supporting living standards. Low-income older Australians, however, devoted a much higher proportion of their total weekly budget to food and a much lower proportion to transport and recreation than the average Australian household.

In terms of education, the proportion of children attending non-government schools increased steadily with household income, rising from 17 per cent of children for low-income couples with children to 42 per cent of children for high-income couples with children. Spending on schooling reflected these trends, rising from $11.10 a week (1.8 per cent of the weekly goods and services budget) for low-income couples with children to $51.30 a week (3.9 per cent of the weekly budget) for high-income couples with children.

Finally, this chapter underlined the significant contribution made by government in supporting the living standards of lower income Australians. After looking at government cash transfers (such as the age pension), income taxes, selected indirect taxes and health, education, housing and welfare indirect benefits, the incomes of low-income households were raised from nothing for low-income households to $392 a week after inclusion of these transfers, taxes and services. In contrast, the incomes of high-income households went from $1820 before the receipt of any government cash benefits or services and before the payment of taxes to $1313 a week after taking account of all these government programs. It thus demonstrates the important role that government policy plays in assisting all Australians participate in the many facets of everyday life.

Appendix 1 Data and methodology

The data source for the analysis presented in this chapter is the 1998-99 Household Expenditure Survey Confidentialised Unit Record File (CURF) (hereafter, the HES or 'the expenditure survey') conducted by the Australian Bureau of Statistics and released in September 2002. The CURF contains information about each household's expenditure on goods and services, income, household characteristics and indicators of financial stress. Inevitably, limitations in the scope and methodology of the expenditure surveys affect the accuracy of expenditure analysis. The following discussion outlines the nature of the data collected in 1998-99 and some of its limitations. For further information, see the Household Expenditure Survey 1998-99 User Guide (ABS 2000b).

The ABS collected information about the gross income of each household in the study, with such income generally being measured as the usual weekly cash income of the household. The ABS then imputed income tax. Disposable income equals gross income minus income tax, and we have used the equivalent disposable income of each household as the measure of their economic well-being. 'Equivalent' means that we have used an equivalence scale - in this case the new OECD scale - to adjust the incomes of each household to take account of household size and composition.

For much of the analysis in this chapter we have ranked all households by their equivalent disposable income and then divided them into five equally sized groups, called quintiles. We have referred to the bottom quintile as 'low-income' households, while the top quintile as 'high-income' households.

The income unit used in this study is the household. While studies of income inequality frequently use a more restricted definition, such as the nuclear family, information on many of the expenditures considered in this study is only collected at the household level. In contrast to some of our earlier studies (Harding et al 2001), results are for households not for persons (i.e. results are household-weighted rather than person-weighted). Because of the focus on expenditure in this study, it seemed more meaningful to look at estimated actual weekly spending on some items by each household. Where the results are likely to have been affected by household size, however, we have flagged this within the text.

The expenditure survey is a sample of the Australian population and consequently, estimates derived from the survey are subject to sampling error. This sampling error will vary with the size of the sample - larger samples produce a lower error - and also with the variability of the relevant item of income or expenditure. Only estimates with a relative standard error of less than 25 per cent are considered sufficiently reliable for most statistical purposes. In the expenditure tables we have followed the practice of the ABS and placed a single asterisk next to estimates with a relative standard error of between 25 and 50 per cent, and a double asterisk next to estimates with a relative standard error of greater than 50 per cent (ABS 1996).

Survey design

The 1998-99 expenditure survey data were collected from interviews with 6 893 households that were conducted

throughout the year. The households were asked to maintain an expenditure diary for a fortnight, in order to record day-to-day spending on, for example, food and clothing. Households also completed a questionnaire detailing spending on expensive or infrequently purchased items such as cars, holidays or school fees. While the expenditure diary was maintained for a fortnight, the questionnaire asked the household to recall their expenditure on items over a period ranging between 3 and 24 months. Questions on income and other household characteristics were also included in the questionnaire.

The scope of the expenditure survey included all private dwellings (for example, houses, flats, units, caravans and garages) but excluded special dwellings (for example, hotels, boarding houses and institutions). Overseas visitors, diplomatic personnel and members of foreign defence forces and persons living in remote and sparsely settled parts of Australia were also excluded.

Survey concepts and definitions

Expenditure

The goal of expenditure analysis in this chapter, as in most other studies of standards of living (see, for example, Barrett et al 2000: 117; Saunders 1997: 12; Bradbury 1996: 14), is to study household consumption. In many cases it is easier to measure expenditure than consumption because, for example, it is hard to place a value on the consumption of a refrigerator or car over a given period. By contrast, surveys can readily find the amount spent on refrigerators in a given period and when these expenditures are averaged over a sufficiently large group of households, this average will also reflect average consumption (ABS 2000b: 5).

This method of measuring expenditure involves collecting the full cost payable of a good or service by each household and is called the 'acquisitions approach'.

When measured in this way, expenditure will differ from consumption for consumer durables such as cars, stereos and refrigerators and also for other infrequently purchased goods and services like holidays or school fees. To be more precise, expenditure and consumption will diverge for an item whenever the expenditure reporting period is shorter than frequency with which households purchase that item. As Saunders (1997:13) has pointed out, this can even apply to the purchase of supermarket groceries in the event of less frequent shopping trips.

The divergence between expenditure and consumption has two implications for the analysis in this chapter. First, when calculating average expenditures for different groups, it is necessary that the groups be sufficiently large for the average to reflect average consumption. The ABS (2000: 5) notes that their recommended method for calculating standard errors takes account of this issue and states that '[g]roups can be considered to be sufficiently large if [relative standard errors] for the expenditure estimates are less than 25%'. The second implication is that the divergence between expenditure and consumption might significantly undermine studies of expenditure distribution (for discussion of this issue see Barrett et al 2000: 117; Saunders 1997: 13; Bradbury 1996: 13-17; Wright and Dolan 1992: 3-4).

This chapter identifies low-income earners by dividing the income distribution into five quintiles. It is sometimes suggested that income is not the best indicator of a household's standard of living and so we considered dividing the expenditure distribution into quintiles for comparison.

However, we decided not to pursue this course due to the difficulties of constructing a meaningful measure of household consumption.

Several other limitations and peculiarities of the expenditure data should also be noted. First, the survey 'provides estimates of expenditure used for private purposes' and consequently, expenditures for investment or business purposes are excluded. It has been suggested by Bradbury (1996: 8-9; see also Saunders 1997: 14-15) that this might cause the expenditures of the self-employed to be understated. Despite these concerns, data for the self-employed have not been adjusted or excluded.

Second, the survey measures 'net expenditure', meaning that refunds or trade-ins of goods are deducted to give a net figure. Occasionally, negative net expenditures are recorded when, for example, a household sells a car, receives winnings from gambling or receives a Medicare refund for a doctor's visit made prior to the survey period. This is consistent with the 'acquisitions approach' adopted by the ABS and consequently these items have not been modified (for discussion of this point see ABS 2000b: 3-6).

Third, most expenditure data were collected within a two-week period during 1998-99. However, some were based on a recall of up to 12 months prior to the data of the interview. In these cases, the expenditure could have occurred at any time in the financial years 1997-98 or 1998-99. In principle, the ABS (2000b: 7) points out that price movements over this period of time could have affected expenditure levels. Given the relatively small number of expenditure items affected, however, and the small price movements that occurred during that period, no adjustment has been made to the data (The change in the annual consumer price index between 1997-98 and 1998-99 was 1.2%).

Fourth, an oft-noted problem is the understatement of so-called 'sin goods' - tobacco, alcohol and gambling. It seems likely that in some circumstances one household member may not wish others to know of their expenditure on such items and that such expenditures would therefore not be recorded in the household survey. This hypothesis is borne out by ABS analysis (ABS 2001: 44; see also Saunders 1997: 13). The data have not been adjusted for this understatement.

Income

This chapter studies, in part, the expenditure patterns of low-income households, so it is appropriate to turn to the measurement of income. The expenditure survey measures gross cash income, which includes income from wages and salaries, self-employment, government cash benefits, investments and other categories such as workers compensation, superannuation, annuities and royalties. As with expenditure, there are numerous subtleties that arise from this definition of income. As many of these issues have been in detail elsewhere, they are covered more briefly here (see Greenwell et al 2001: 6-7; ABS 2000b: 8-11).

In summary, the income measure used in the expenditure survey has the following features:

- It excludes income derived from services provided from within the household;
- It excludes most one-off payments (for example, inheritances, legacies, loans and capital gains and losses);
- It excludes intra-household transfers of income;
- It principally focuses on cash, rather than in-kind, income (although see below);

- It principally focuses on fortnightly, rather than annual, income (although see below);
- It is known that investment and own-business income are understated (ABS 2001: 44; Bradbury 1996: 4-8) and that government cash benefits are also understated (ABS 2002: 6-8). No adjustment has been made for these deficiencies.

Income and expenditure data are predominantly based on fortnightly receipts and payments. However, like expenditure, data for different components of income are collected over different time periods. For example, wage and salary income is mostly based on the most recent pay slip (although leave loading and bonuses from the previous 12 months are incorporated). By contrast, self-employment income is collected for the previous financial year or even, in some cases, the financial year prior to that. As with expenditure data, changes in incomes from year-to-year may mean that the income data are not fully comparable but no adjustment has been made for this.

The treatment of income in the expenditure survey appears to differ from the treatment in the income surveys in relation to in-kind income. In the expenditure survey, some employer subsidies are included within expenditure data and, where possible, the ABS has added corresponding amounts of in-kind income to wage and salary earnings (ABS 2000b: 6, 9). Other cases of employer subsidies, and in-kind income from government or from other households, are not collected (although the ABS does produce estimates of in-kind government benefits such as education, health and housing as discussed in this chapter).

The preceding discussion illustrates the lack of comparability of the income and expenditure concepts measured in the expenditure survey. The income and expenditure concepts differ, especially in relation to one-off expenditures like a car purchase, which are recorded, and one-off receipts like inheritances, which are not. The time periods for collection of income and expenditure data also vary in ways that are unlikely to be consistent. For these reasons, the ABS (2000b: 12-13) emphasises that the difference between income and expenditure may be due to methodological differences and is not necessarily a reflection of saving or dissaving.

The ABS gross income concept has been described above and differences between the income and expenditure concepts have been identified. For the purposes of this chapter, a separate issue that arises is the concept of income that is used for distributional analysis - for example, whether to use gross income or disposable income (that is, gross income minus income tax). The ABS calculates estimates of income tax, indirect taxes and indirect government benefits paid and received by households in the survey, providing the option for distributions to be founded on:

- market income (all earned and other income, but not including government cash benefits);
- gross income (market income plus government cash benefits);
- disposable income (gross income minus income tax); or
- final income (disposable income plus indirect government benefits minus indirect government tax).

In most distributional analyses, income is used as a proxy measure for standard of living. The decision about which income concept is most suitable is debatable. Part of the purpose of this chapter is to explore the effect of government taxes and benefits on different households. However, we have used disposable income to

classify households because it is conceptually simpler and because it is widely used elsewhere, thereby allowing our analysis to be compared with other similar studies.

We have adjusted the disposable incomes of households by an equivalence scale to reflect differences in household size and composition (essentially the number of mouths each household has to support). We have used the new OECD equivalence scale, which gives a value of 1 to the first adult in a household, 0.5 to second and subsequent adults, and 0.3 to children. For the purposes of the equivalence scale, children are defined as those aged less than 15 years.

Unit of Analysis - Household

The final significant data concept is the definition of 'the household' and the associated definition of 'dependent children'. These concepts are relevant partly because this chapter presents expenditure patterns for different household types. More importantly, income quintiles are based upon a comparison of household incomes that have then been adjusted using an equivalence scale. The ABS defines a household as 'a group of people who usually live in the same dwelling and make common provision for living essentials' (ABS 2000a: 30). The ABS justifies its choice of the household as the unit of analysis for expenditure 'because it is assumed that sharing of the use of goods and services occurs at this level'. In the past, the ABS has assumed that it is more appropriate to assume that income is shared amongst a smaller group (ABS 1999: 45), sometimes referred to as the 'ABS income unit'. Thus, there appears to be a conflict in the appropriate choice of unit of analysis in comparisons of income and expenditure. However, the ABS (2002: 5) has recently foreshadowed that it will, in future, consistently use the household as the unit of analysis and for this reason, and also because expenditure can only usefully be analysed at the household level, that is the unit of analysis adopted throughout. It has been suggested that because expenditure data for group households and mixed-family households is derived from interviewing one household member it is 'notoriously inaccurate' (Barrett et al 2000: 117-18). No adjustment, however, has been made for this possibility.

Standard Errors

The expenditure survey is a sample of the Australian population and consequently, estimates derived from the survey are subject to sampling error. This sampling error will vary with the size of the sample - larger samples produce a lower error - and also with the variability of the relevant item of income or expenditure. Thus, for example, the variability in bread expenditure is very low and so the error associated with estimates of average spending on bread are also low. By contrast, motorcycle purchases are infrequent and so estimates of this expenditure will have much higher errors associated with them (ABS 2000b: 31). The ABS (2000b: 5, 31) notes that their recommended method for calculating standard errors accounts for both sample size and sample variability. Consequently, errors resulting from the variability in expenditure on consumer durables and other infrequently purchased items can be identified and quantified. The tables and notes identify expenditure estimates with high relative standard errors.

Notes for Chapter 1

1. We thank Gillian Beer, Matthew Toohey, Agnes Walker and Simon Kelly for their assistance with earlier versions of this chapter.

2. Throughout this chapter, 'low-income' is defined as households in the lowest quintile (20 per cent) of all households, when ranked by their equivalent disposable household income. 'High-income' is defined as households in the top income quintile.

3. Sales of such properties result in a cash flow into the household and are termed negative expenditures by the ABS (in contrast to the positive expenditures that we are more used to).

4. Many other young singles live in group households, thus coming under the 'other family types' category.

5. This includes purchase of telephone handsets, mobile phones, answering machines, fixed line and mobile telephone accounts, public telephone calls, and other telephone and fax charges.

6. This includes home computer equipment, software, blank computer media and online charges (Internet).

7 Note that the survey was conducted prior to the introduction of the GST, so it is not included here.

References for Chapter 1

ABS (Australian Bureau of Statistics) (1996) *Income Distribution, Australia 1994-95*, ABS Cat. No. 6523.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (1999) *Income Distribution, Australia*, ABS Cat. No. 6523.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2000a) *Household Expenditure Survey Summary of Results*, ABS Cat. No. 6530.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2000b) *Household Expenditure Survey User Guide 1998-99,* ABS Cat. No. 6527.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2001a) *Government Benefits, Taxes and Household Income*, ABS Cat. No. 6537.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2001b) *Schools*, ABS Cat. No. 4221.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2002) 'Upgrading Household Income Distribution Statistics' in *Australian Economic Indicators 2002*, April, ABS Cat. No. 1350.0, Canberra: ABS.

Barrett, G, Crossley, T and Worswick, C (2000) 'Consumption and Income Inequality in Australia', *Economic Record*, 76(233), pp.16-38.

Bradbury, B (1996) 'Are the Low Income Self-Employed Poor?', Social Policy Research Centre Discussion Paper No. 76, Kensington: University of NSW.

Considine, G. and Zappala, G (2002) 'The Influence of Social and Economic Disadvantage in the Academic Performance of School Students in Australia', *Journal of Sociology*, 38(2), pp.129-148.

Greenwell, H, Harding, A and Lloyd, R (2001) 'An Introduction to Poverty Measurement Issues', Discussion Paper No. 55, National Centre for Social and Economic Modelling, Canberra: University of Canberra.

Harding, A., Lloyd, R. and Greenwell, H (2001) *Financial Disadvantage in Australia: The Persistence of Poverty in a Decade of Growth*, Camperdown: The Smith Family.

Harding, A., King, A and Kelly, S (2002) 'Incomes and Assets of Older Australians: Trends and Policy Implications', *Agenda*, 9(1), pp.3-18.

Harding, A. and Percival, R (1997) 'Who Smokes Now? Changing Patterns of Expenditures on Tobacco Products in Australia, 1975-76 to 1993-94', Discussion Paper No. 24, National Centre for Social and Economic Modelling, Canberra: University of Canberra.

Kelly, S (2001) 'Trends in Australian Wealth - New Estimates for the 1990s' Paper presented to the 30th Annual Conference of Economists, University of Western Australia, September.

Kelly, S (2002) *Levels, Patterns and Trends of Australian Household Saving*, Report prepared for the Financial Planning Association by the National centre for Social and Economic Modelling (available from www.natsem.canberra.edu.au) .

King, A (2001) *Superannuation - The Right Balance*?, Melbourne: CPA Australia.

Landt, J and Bray, R (1997) 'Alternative approaches to measuring rental housing affordability in Australia', Discussion Paper No. 16, National Centre for Social and Economic Modelling, Canberra: University of Canberra.

Lloyd, R., Given, J. and Hellwig, O (2000) 'The digital divide: some explanations', *Agenda*, 7(4), pp. 345-358.

Machin, S (1998) 'Childhood Disadvantage and Intergenerational Links', in Atkinson, A. B. and Hills, J (eds), *Exclusion, Employment and Opportunity,* CASE Paper No. 4, London: London School of Economics.

Mitchell, D., Harding, A. and Gruen, F (1994) 'Targeting Welfare', *Economic Record*, 70(210), pp. 315-40.

National Housing Strategy (1991) T*he Affordability of Australian Housing*, Issues Paper no 2, Canberra: AGPS.

Nelson, B (2002a) *Higher Education at the Crossroads*: an overview paper, Ministerial discussion paper, April. (available from www.dest.gov.au)

Nelson, B (2002b) *Setting Firm Foundations: Financing Australian higher education*, Ministerial discussion paper, July. (available from www.dest.gov.au)

Pawagi, V (2000) *Youth in Focus: Interaction between Educational Participation, Educational Attainment and Labour Force Activity,* Canberra: Department of Family and Community Services.

Saunders, P (1997) 'Poverty, Choice and Legitimacy', SPRC Discussion Paper No. 76, Social Policy Research Centre, University of New South Wales. (available from www.sprc.unsw.edu.au)

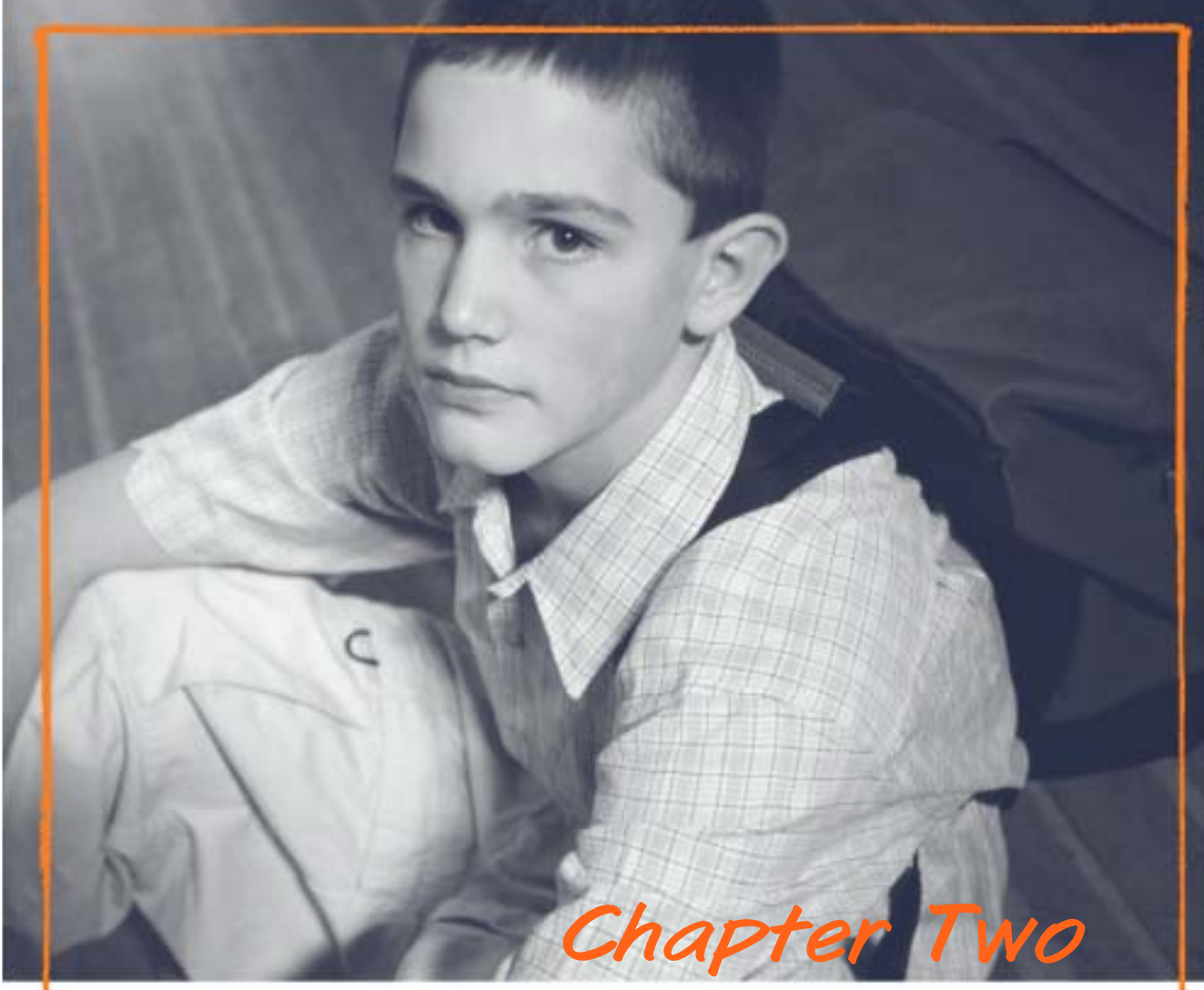
Schofield, D (1998) 'Public Expenditure on Hospitals: Measuring the Distributional Impact', Discussion Paper No. 37, National Centre for Social and Economic Modelling, Canberra: University of Canberra.

Thurecht, L., Walker, A., Bill, A., Harding, A., Gibbs, A. and Pearse, J (2002) 'Socio-Economic Characteristics of NSW Hospital Users in 1998-99', paper presented at the Health Outcomes Conference, 17-18 July, Canberra (available from www.natsem.canberra.edu.au)

Wright, J and Dolan, A (1992) 'The Use of HES Data in Distributional Analysis' Conference paper presented at the 21st Annual Conference of Economists, 8-10 July, Melbourne, Australia.

Zappala, G. and Parker, B (2000) 'The Smith Family's *Learning for Life* Program a Decade On: Poverty and Educational Disadvantage', Background Paper No 1, Research and Advocacy Team, The Smith Family, Camperdown: The Smith Family.

Zappalà, G., Green, V and Parker, B (2002) 'The disadvantaged in the new economy' in Ron Callus & Russell Lansbury (eds) *Working Futures: The Changing Nature of Employment Relations in Australia*, Sydney: Federation Press.



Chapter Two

Attitudes towards school and learning among students from low-income households

Ian Watson and Gillian Considine

Introduction

Since the mid-1960s, educational researchers have explored in detail the factors that contribute to school achievement. A landmark study by Coleman and colleagues (Coleman et al 1966) found that variations in school 'input measures' had little impact on student performance on standardized tests. Put simply, family background mattered more for school outcomes than what happened in the school. Debate on the relative importance of these factors shows little sign of abating (see Kain and Singleton 1996 for an overview of this literature; Card and Krueger 1998).

Another critical school outcome, however, is whether students become enthusiastic lifelong learners, that is, whether they learn how to learn and develop the motivation to do so. The latter is particularly important. As Schuller (2001:68) has argued, 'probably the single most important factor in effective learning is student motivation', and one of the most useful ways to measure this is to examine whether students exhibit positive attitudes towards the learning process. Students who display negative attitudes towards the learning process are more likely to leave school early and as the previous chapter by Harding, Lloyd and Greenwell noted, there is an important link between education and lifetime economic outcomes. A negative attitude towards learning at school may therefore be an indirect, but significant barrier towards participation in later life.

This chapter examines, in a preliminary fashion, how the learning experiences of students from The Smith Family's *Learning for Life* (LFL) program compare with those of other students from low socioeconomic backgrounds. The analysis reported here is based on data from a survey of 462 Year 11 LFL students conducted in 2001. The LFL program provides financial and educational support to disadvantaged families and their children. It aims to help students take part in mainstream school activities, such as excursions and school electives, so that their opportunities to participate more fully in the life of the school is enhanced (see Zappalà & Parker 2000). A key objective of LFL is to improve the 'life opportunities and self-esteem' of students from financially disadvantaged backgrounds so that 'they will have a better chance of not falling into a cycle of disadvantage' (Smyth, Zappalà & Considine 2002a:1).

In addition, we compare the findings for the LFL students with results from a comparable group of Year 11 students that participated in the Longitudinal Survey of Australian Youth (LSAY), a major national survey conducted annually since 1995 by the Australian Council for Educational Research (ACER). Further details on the data sources and surveys are contained in Appendix two.

In particular, we examine two key issues in this chapter:

- How do students evaluate their school and classroom experiences?
- Do students experience serious learning problems?

The chapter does not attempt any kind of assessment of the LFL program. At this stage of the research we do not have data on the initial educational situation of LFL students, their length of time on the program, nor the kinds of educational 'inputs' which the LFL program has provided. Therefore assessing outcomes that may have resulted from particular

program interventions is not feasible at this stage of the research.[1]

The next section examines attitudes towards school and learning among LFL students, before comparing the findings with the control group from the LSAY. This is followed by an examination, again among both LFL and LSAY student groups, of whether students experience problems with learning. The final section of the chapter discusses some of the implications of the findings.

Attitudes towards school and learning among the LFL students

Students were asked if they agreed with four attitudinal items that tapped into their feelings about school and learning. On a five-point scale ('strongly agree' through to 'strongly disagree') they were asked if their school was a place where:

- 'I feel happy';
- 'I really like to go each day';
- 'I get enjoyment from being there'; and
- 'I enjoy what I do in class'.

Three of these items are general responses to school, while the last is specific to learning. Many students enjoy the social aspects of school, friends and sporting activities, for example, and might well agree with some of these items on non-educational grounds. The inclusion of the last item ensures that an educational issue is also explored. For this reason, we give more weight to this item in our subsequent discussions. In our analysis, we regard those students as positive towards school if they answered 'strongly agree' to these attitudinal items.[2] Table 2.1 summarises the key demographic and background factors of LFL students who 'strongly agreed' with these four items.

The most pronounced differences that emerged were where:

- Parents have a tertiary education;
- Students live in metropolitan areas; and
- Students plan to study at university or undertake an apprenticeship.

Table 2.1 Attitudes towards school and learning, background of LFL students (%)

Background	Feel happy	Like to go	Enjoy being there	Enjoy class
Gender				
Male	10	9	8	10
Female	13	9	11	10
Parents' educational qualifications				
Tertiary	15	23	15	19
Non-tertiary	12	8	9	9
School sector				
Government	12	9	10	10
Non-government	17	10	10	13
Type of housing				
Public rental	13	9	12	9
Private rental, buying or ownership	11	9	8	10
Geographical location				
Metropolitan	16	10	12	12
Non-metropolitan	8	7	6	8
Family type				
Single parent	10	8	10	9
Not a single parent	14	10	9	11
Plans for when leave school				
No further study	8	9	8	6
Apprenticeship	9	9	6	17
TAFE studies	15	9	13	11
University studies	21	12	15	15

In each case, students are much more likely to report very positive attitudes towards school and learning. Nearly one fifth of students who have parent(s) with a tertiary education, for example, strongly agree that they enjoy what they do in class, whereas only one tenth of students whose parent(s) do not have tertiary qualifications feel this way. Similarly, about 12 per cent of students living in metropolitan locations strongly agree that they enjoy being at school, whereas only six per cent of students outside metropolitan areas feel this way. Finally, only about six per cent of students with no future plans for studying strongly agree that they enjoy class. In contrast, for students planning to undertake an apprenticeship the comparable figure is 17 per cent, and for those planning to study at university the comparable figure is 15 per cent.

The problem with simple cross-tabulations of the data is that compositional effects, or confounding influences, may be shaping the results. To reduce these possible influences, we used multivariate techniques. These enable us to hold the effect of all the other variables constant while examining the effect of each particular variable. This approach, which in this case makes use of logit models, is adopted throughout this chapter and the results are presented as odds ratios. These express how much more likely it is that the odds of a certain outcome - strongly feeling happy compared with not strongly feeling happy - are associated with a particular variable (such as parents' educational qualifications).

When the data in Table 2.1 is entered into a logit model, these three variables - parents' tertiary education, metropolitan location and post-school plans - emerge as statistically significant across several of the items. In order not to clutter the discussion with unnecessary technical details, Table 2.2 simply summarises the key logit results. It shows that for the important 'I enjoy what I do in class' item, the student's post-school plans is the only statistically significant variable. If the student plans to study at university or undertake an apprenticeship (compared with no further study), then she/he has about three times the odds of enjoying what she/he does in class. The results vary across the other items:

- Tertiary education of the parent(s) is statistically significant for the 'I really like to go each day' item;
- Metropolitan location is statistically significant for the 'I feel happy' and 'I get enjoyment from being there' items; and
- Plans to study at university is statistically significant for the 'I feel happy item.

Table 2.2 Attitudes towards school and learning, key logit results for background factors (odds ratios)

My school is a place where ...	Tertiary educated parent(s)	Metro location	Plans: apprentice	Plans: university
I feel happy	-	2.9	-	3.2
I really like to go each day	3.3	-	-	-
I get enjoyment from being there	-	2.3	-	-
I enjoy what I do in class	-	-	3.3	2.8

Source: LFL 2001 Survey

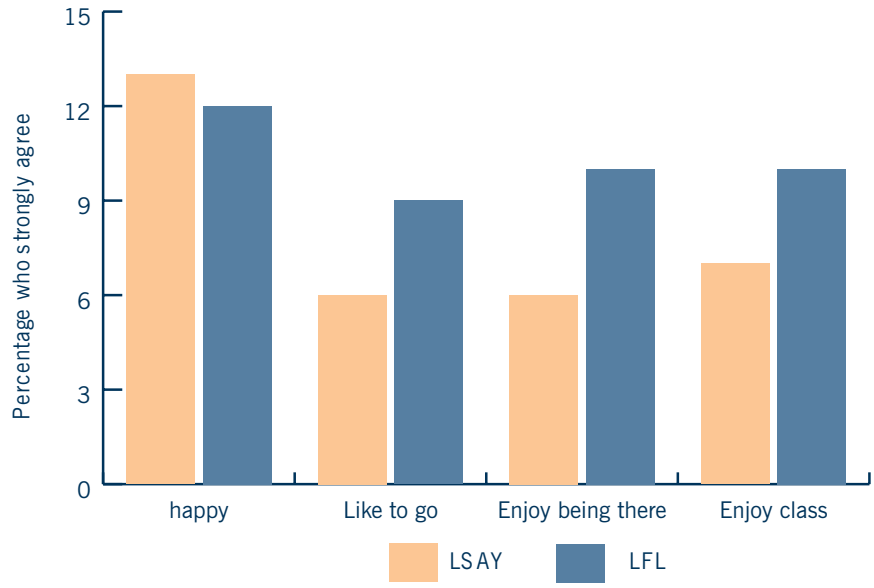
Note: All items statistically significant at 0.05.

Attitudes towards school and learning: comparison with a control group

While it is useful to know that about one fifth of students with tertiary educated parent(s) strongly agree that they enjoy what they do in class (Table 2.1), this does not tell us enough. Is this a high or low figure? It all depends on the nature of the comparison we undertake and hence, we make use of a relevant control group. While the control group we have chosen is by no means perfect (see Appendix 2), it does allow us to restrict the general student population to that subset most likely to match the LFL students. In the following discussion, we refer to this sub-set of students from the general population as the 'LSAY students'.

Figure 2.1 shows that there is little difference on the happiness item between LFL students and LSAY students, and a small margin in favour of LFL students, on the other three items. In other words, LFL students appear to be slightly more likely to 'strongly agree' with a range of positive statements about school and learning. We again modeled this data using multivariate methods in order to control for compositional effects or confounding influences. In this case, we were restricted to a smaller set of background factors, because not all of the factors discussed earlier were available in both data sets. We again present only the key results from this modeling, listing only those variables that were statistically significant.

Figure 2.1 Attitudes towards school and learning, LFL compared with LSAY



Source: LFL 2001 Survey and LSAY 1997 Survey

As Table 2.3 shows, being on the *Learning for Life* program is associated with increased odds - around a two-fold increase - in feeling very positive about three of the items concerning school and learning. Only on the happiness item is there no statistically significant difference. The other factors that emerged as statistically significant were:

- Being at a government school was associated with reduced odds of feeling happy, as was planning to undertake an apprenticeship;
- Intending to study at university was associated with increased odds - in the order of two times - across all of the items; and
- Having a parent or guardian with a tertiary qualification was associated with increased odds of feeling very positive on the important 'I enjoy what I do in class' item.

These results suggest that the initial differences shown in Figure 2.1 are sustained after we have controlled for a number of key background and contextual factors. In other words, the LFL students do indeed appear to be more positive about school and learning than are a similar group of students from the general population, taking into account the other characteristics of the students.

While odds ratios are useful for assessing the impact of particular variables, it is more useful to calculate predicted probabilities in order to assess the overall effect of all the control variables. These probabilities are presented in the form of a table of comparisons, showing 'adjusted' and 'unadjusted' probabilities. The unadjusted probabilities are simply the percentages shown in a simple cross-tabulation of student type by attitudinal item and were illustrated earlier in Figure 2.1. The adjusted probabilities, on the other hand, are a cross-tabulation in which the cells are composed of the probabilities predicted by the model, that is, the probabilities with all other factors controlled. Table 2.4 shows the comparison of these probabilities, while Figure 2.2 graphs the adjusted probabilities. This comparison confirms the analysis just discussed. Indeed, this table suggests that after controlling for the various background and contextual factors, the differences in probabilities between the LFL students and the LSAY students is actually slightly larger.

Table 2.3 Attitudes towards school and learning, key logit results for LFL/LSAY comparison (odds ratios)

Background	Feel happy	Like to go	Enjoy being there	Enjoy class
LFL/LSAY				
On LFL program	-	1.9	1.9	1.9
Tertiary qual. of parent/No tert quals				
Has tertiary quals	-	-	-	1.7
Government/non government school				
Government school	0.6	-	-	-
Post-school plans*				
TAFE	-	-	-	-
Apprenticeship	0.5	-	-	-
University	1.8	1.9	2.8	1.8

Source: LFL 2001 Survey and LSAY 1997 Survey

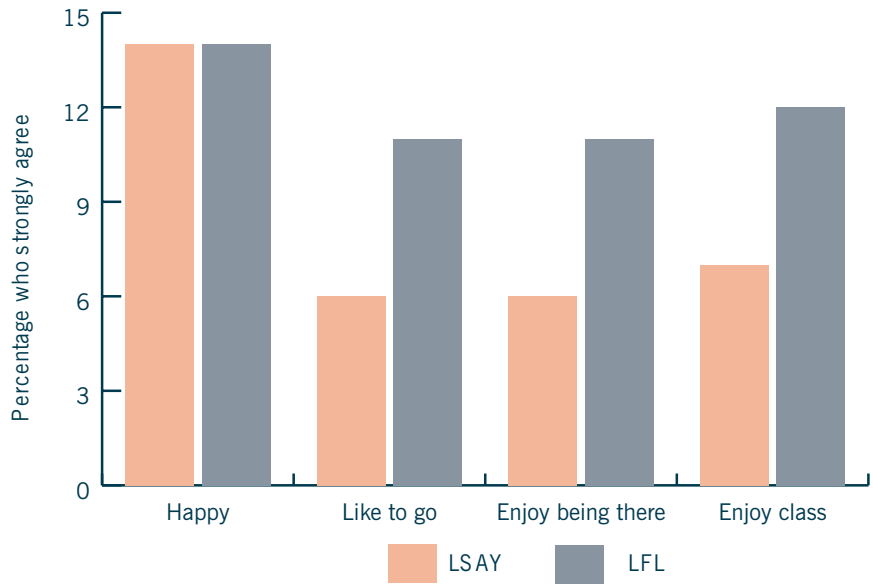
Note: *Omitted (contrast) category is "no further study". All items statistically significant at 0.05.

In summary, apart from the general sentiment of feeling happy, the LFL students are more likely than the LSAY students to report feeling strongly that they enjoy school and learning. Specifically, they feel strongly that they enjoy going to school, that they enjoy being there, and that they enjoy what they do in class. The latter item is particularly important, because it points towards the specific educational aspects of school life, rather than just the sociability of the school environment. While the overall magnitude of these sentiments is not large (about one tenth of the LFL student population), it is important to keep in mind that the sentiments expressed were at the extreme end of the scale. This ten per cent of LFL students are those who feel these positive attitudes very strongly.

Table 2.4 Attitudes towards school and learning

	Unadjusted (%)		Adjusted (%)	
My school is a place where ...	LSAY	LFL	LSAY	LFL
I feel happy	13	12	14	14
I really like to go each day	6	9	6	11
I get enjoyment from being there	6	10	6	11
I enjoy what I do in class	7	10	7	12

Figure 2.2 Adjusted attitudes towards school and learning, LFL compared with LSAY



Source: LFL 2001 Survey and LSAY 1997 Survey

Problems with learning among the LFL students

This section of the analysis also focuses on a small sub-group of students (just under one-quarter of the student population), those who were experiencing difficulty with their learning. The bulk of students fall into middle positions, that is, they experienced difficulties sometimes, but not facing serious learning problems. Unfortunately, the definition of learning problems is not identical between the LFL students and the LSAY students, but we are confident that we are dealing with a very similar phenomenon in both groups. Specifically, we have defined LFL students with learning problems as those who answered that they had serious problems with either reading, maths or writing, either 'all of the time' or 'quite a lot of the time'. For the LSAY students, we defined students as having learning problems if they reported that they were doing 'not very well' or 'very poorly' to either of the questions dealing with the school subjects of English and Maths. On this basis, approximately 21 per cent of LFL students and 24 per cent of LSAY students were defined as experiencing learning problems.

Table 2.5 shows the percentage of LFL students who experienced learning problems by a similar range of background characteristics as discussed previously. The key findings were:

- Students whose parent(s) have tertiary qualifications are again advantaged, with only 15 per cent experiencing problems (compared with 22% among other students);
- Students at non-government school are less likely to have learning problems (17%) compared with those at government schools (22%);

Table 2.5 Problems with learning, background of LFL students

Background	Experiencing problems (%)
Gender	
Male	20
Female	22
Parents' educational qualifications	
Tertiary	15
Non-tertiary	22
School sector	
Government	22
Non-government	17
Type of housing	
Public rental	23
Private rental, buying or ownership	20
Geographical location	
Metropolitan	22
Non-metropolitan	21
Family type	
Single parent	17
Not a single parent	26
Plans for when leave school	
No further study	22
Apprenticeship	24
TAFE studies	42
University studies	16

- Students coming from homes with a single parent are less likely to have learning problems (17%) compared with other students (26%); and
- Students with plans for university are less likely to have learning problems (16 per cent) while students with plans for TAFE are much more likely to have learning problems (42 per cent).

Problems with learning: comparison with a control group

As noted earlier, there was little difference between the two student populations (21 versus 24 per cent) in terms of those defined as having learning problems. In fitting a logit model to the data, however, only post-school plans were both statistically significant and substantively significant. Specifically, an intention to study at university is associated with decreased odds (about 0.4) of experiencing learning problems. This result is not particularly illuminating, as the fact that a focus on university as a destination is the most important factor explaining an absence of learning problems is somewhat axiomatic, since students with severe learning problems are unlikely to view university as a realistic destination.

In summary, while this analysis provides very little in the way of interesting findings compared with the earlier discussion, it is important in showing that LFL students do not differ from the general student population when it comes to experiencing learning problems.

We deliberately focused on two subgroups in our analysis, those at the 'top' (in attitudinal terms) and those at the 'bottom' (in learning terms). While this has the disadvantage that only a small proportion of students are relevant (between one tenth and one quarter), it does have the advantage of allowing contrasts to be sharper. The role of planning for post-school destinations emerged as the critical factor in shaping attitudes towards school and learning. Given the orientation of schools towards university entrance, it is not surprising that this destination features so prominently. It is interesting to note, however, that among the LFL students, those with plans for apprenticeships also feel just as positively about their classroom learning. Furthermore, this comes from a group who do not appear to be enamoured of school in other respects.

Discussion and conclusions

The aim of this chapter was to describe and compare the learning experiences of Year 11 students on the *Learning for Life* (LFL) program with the learning experiences of a similar group of Year 11 students in the general population who were involved in the Longitudinal Survey of Australian Youth (LSAY). Our comparisons were drawn along two polarised issues:

- A focus on a positive aspect of the learning experience - examining the factors contributing to differences among those Year 11 students with strong positive attitudes towards school and learning;
- A focus on a negative aspect of the learning experience - examining students with serious learning problems.

When examining the positive aspect of the learning experience this study found that the there were a number of factors significantly associated with LFL and LSAY students having strong positive attitudes toward school and learning.

Post-school plans

The post-school plans of students provide an indication of the level of success in school and their subsequent attitudes towards school and learning. It is therefore not surprising that intention to study at university was associated with increased odds of having strong positive attitudes towards school and learning, especially when compared with students who had 'no plans for study' after school. Similarly, it is not surprising that students who intended to enter an apprenticeship after leaving school were also more likely to be strongly positive about learning. This would be particularly so if these students were taking VET (vocational education and training) related subjects in Year 11. This could explain why their 'classroom' sentiments differed from their more general school sentiment.

Parental education level

In an earlier study examining the factors influencing the academic performance of all students on the LFL program from kindergarten to Year 12, it was found that parents' education level significantly influenced student academic performance (Zappalà & Considine 2001; Considine & Zappalà 2002). Students who had a parent(s) with university qualifications achieved higher levels of academic performance than students who did not have a parent(s) with university qualifications. Furthermore, the authors of this study posited that parents with higher educational attainment may have been more likely to promote the value of higher levels of achievement, and to provide both the psychological and educational support students needed to excel in school (Zappalà & Considine 2001).

Similarly, another study by Zappalà and McLaren (presented in the following chapter), examined the factors associated with home computer and Internet access and usage among a large sample of LFL students. Once again, the level of parental education was prominent, with home access and usage of computers and Internet among students increasing as the level of parental education increased (see also, McLaren & Zappalà 2002).

The results of this analysis of attitudes to learning suggest a consistency with these previous studies. When controlling for all other background variables, LFL students living with a parent(s) with a tertiary education were more than three times more likely to report having very positive feelings about going to school each day, compared with students whose parents did not have tertiary qualifications. Taking the results of these three studies together suggests that parents who have pursued higher levels of education themselves may be more likely to foster a positive attitude towards school in their children.

Metropolitan location

Studies have examined the relative disadvantage suffered by students in non-metropolitan areas and found that students from rural and remote areas have poorer educational outcomes compared to students from metropolitan areas (Cheers 1990; HREOC 2000). We would argue that this is likely to influence their subjective experience of school and be reflected in their attitudes towards school and learning, something consistent with our findings. Research has also suggested a range of other issues that contribute to a relatively poorer experience of the learning environment for students in non-metropolitan areas (HREOC 2000):

- Problems with travel time;
- The availability of transport to and from school;

- The quality of educational services, including restricted subject choices; and
- Lower levels of family income support.

It is feasible to assume that these same factors are influencing the educational experiences of students on the LFL program who live in non-metropolitan areas, and hence contributing to lower levels in this measure of strong positive attitudes towards school and learning.

School sector

A number of studies have shown a 'school effect' with regard to different educational outcomes, in that students attending state government schools are less likely to stay on at school and have school scores at the lower end than do students attending non-government schools (Prior & Beggs 1989; Buckingham 2000). In addition, some researchers have suggested that the quality and attitude of teachers is poorer in state schools and that teachers in 'disadvantaged' state schools often have lower expectations of their students (Sparkes 1999; Ruge 1998). It is important to note that government schools featured adversely in our results only with regard to the 'I am happy' item, and not with respect to the other school and classroom related items. This may well reflect a compositional effect in government schools, that is, something about the student population in these schools, rather than a reflection on what happens in those schools.

The LFL program

Although a number of factors emerged from our analysis, the key issue of interest was that after controlling for all other factors, the LFL students were more likely to be strongly positive about their school and learning experiences than the LSAY students. These results show that Year 11 LFL students generally get more enjoyment out of their learning and educational experiences than do a comparable group of Year 11 students from the general population.

Why do the LFL students emerge as more likely to be strongly positive about school and learning? A possible explanation for this can be found by looking at a separate issue explored in the first of the three annual surveys conducted with the Year 11 students published elsewhere (Smyth et al. 2002a; Zappalà et al 2002). In these papers the analyses focused on student perceptions of the effectiveness of the LFL program in facilitating their ability to participate in elective subjects and in school excursions. The results showed that the majority of LFL students were either satisfied, or very satisfied, with the extent to which the LFL program helped them to participate in these school activities. An increased ability to participate more fully in school life and the influence this has on general attitudes towards school and learning warrants further attention. Additional data is required to determine the extent to which interactions between increased participation in school life and attitudes towards school and learning have been directly influenced by being on the LFL program. In other words, it cannot be inferred from these findings that being on the LFL program has caused these students to be more positive about their learning and school experience.[8]

Factors influencing negative learning experiences

Overall, our findings show that the key factor that influenced positive aspects of the learning experience, namely, intention

to study at university, also provided a buffer against the problem of learning difficulties. Most importantly, we found no difference between LFL students and LSAY students with regard to the incidence of learning difficulties.

Interestingly, when examining just the background of the LFL students (and excluding the LSAY students) students whose parents or guardians had a university qualification were less likely to have learning difficulties 15 per cent compared to 22 per cent. In the subsequent multivariate analysis including LSAY students, however, the parental education factor was no longer significant. The most likely reason for this finding is that among the LFL students there was only a very small percentage of students (approximately 5%) who had a parent(s) with university qualifications. With so few students in this category, it is difficult to determine the extent of co-variation between this variable and other factors. It is possible that in the formative years of learning, the influence of the parental education is probably very important in passing on educational aspirations to children. Once a child reaches Year 11, however, the influence of parental education becomes far less of a driving factor in decreasing educational disadvantage than does having formulated ideas for university study which may motivate learning in high school.

It could be argued that one should not mix demographic and non-demographic variables, because the latter are themselves very much the product of the former. According to this logic, our inclusion of post-school plans may have obscured the importance of parental education. Such a criticism, however, overlooks the dynamics of schooling, particularly the agency of students who formulate plans and develop various strategies for life as part of their maturing. We believe that incorporating this perspective - the agency of students - is just as important as is incorporating the more structural demographic factors.

Another issue for consideration with regard to this finding are compositional differences between LFL students and LSAY students. Our 'control group', was based on a loose wealth measure rather than a precise income measure. Moreover, the LFL students themselves might be quite unique because of the nature of the LFL program. One of the aims of the LFL program, for example, is to improve retention rates among students at risk of leaving school early. It is possible that among the Year 11 LFL cohort, there were a substantive number of students who may not have continued onto Year 11 without the support of The Smith Family and who therefore had not yet formulated their post-school plans.

Single parent households

One of the most notable findings of this analysis is that students from homes with a single parent are much less likely to experience learning difficulties compared to other students. One-parent households do not have a negative impact on the learning experiences of students, and do not increase the likelihood of a child having serious learning problems. This finding is also consistent with an earlier study that found that students from low socio-economic status (SES) single-parent households were not adversely affected with regard to academic performance (Zappalà & Considine 2001). Together these results contradict other research findings (e.g. Rich 2000) and popular stereotypes upheld in the media, that suggest that students from single-parent households are more likely to have poor

educational outcomes than are students from two parent families. This is in spite of the fact highlighted by Harding and colleagues in the previous chapter, that sole parent households generally face severe financial disadvantage.

One possible explanation for this difference in our findings is that the influence of family structure has previously only been studied in relation to all SES groups (high through to low SES). In such studies the heterogeneity that exists within any particular SES band is masked, and characteristics which dominate any particular SES band increase in significance. By way of contrast, the Zappalà and Considine (2001) and the Zappalà and McLaren study (Chapter 3), as well as the current study, have all focused exclusively on students from low SES backgrounds, and thus they provide a greater insight into the specific factors contributing to the school and learning experience of students from disadvantaged backgrounds.

In conclusion, the findings from this chapter call into question the prevailing assumption that students from low SES backgrounds are a homogenous group. The diversity of factors which influence different attitudes towards learning and education, and which impact on learning difficulties, highlights the need to continue to diversify and tailor school-based intervention programs which aim to assist students from disadvantaged backgrounds.

Appendix 2

The research presented in this chapter forms part of a three-year longitudinal study of the school-to-work transition process of students on *Learning for Life* (LFL) conducted jointly between ACIRRT, at the University of Sydney, and The Smith Family (see Smyth, Zappalà & Considine 2002b for further details). Two survey datasets were used for this analysis. The data on LFL students comes from the first of three annual longitudinal surveys conducted with students who were in Year 11 in 2001. The survey achieved a response rate of 60 per cent, a good result for a mail questionnaire (see Zappalà, Smyth & Considine 2002 for further details on the survey). In all, some 462 Year 11 students participated in the survey. The annual surveys also included questionnaires sent to Year 8 students (approximately 800 students) but this group of students is not included in this analysis.

The data for the control group come from one of the surveys that form part of the Longitudinal Surveys of Australian Youth (LSAY), the latest in a series of important longitudinal youth projects in Australia. Since 1978, longitudinal projects of youth have included the Youth in Transition Project (YIT), the Australian Longitudinal Survey (ALS), and the Australian Youth Survey (AYS) (see Thorn 2000). The LSAY has followed a number of cohorts of young people since 1995, drawing its sample from all States and Territories in Australia. The students analysed for this chapter were in year 11 in 1997 and numbered 10,307 (See Marks & Long 2000; and Marks, McMillan & Hillman 2001 for further details about the LSAY data).

Participants in the LFL program are not, of course, a representative sample of students, they come from families living in financial disadvantage. In practice, this amounts to families whose parents/guardians are overwhelmingly receiving social security benefits (mostly sole parent and unemployment benefits). Obtaining a close match for the LFL students from the LSAY control group was not straightforward. The LSAY data provides no information on income, family type or labour market status, variables that might help match the LSAY student cohort more closely to the LFL students.

Instead, we constructed an asset-based measure of family wealth, based on data like whether families own dishwashers, computers, CD players, pianos and so forth. These items were summed to delineate a 'low wealth' family, in this case, those who own four or less out of ten items. Students from these family groups were used as the control group for the LFL students. While this is not a perfect measure of financial disadvantage, in the absence of other data items, it provided the best approach for creating a relevant control group.

Finally, the chapter does not attempt any kind of assessment of the LFL program. At this stage of the research we do not have data on the initial educational situation of LFL students, their length of time on the program, nor the kinds of educational 'inputs' which the LFL program has provided. Therefore, assessing outcomes that may have resulted from particular program interventions is not feasible at this stage of the research (see Zappalà et al 2002 for a preliminary assessment of the LFL program). Instead, at the very least, this chapter can be seen as providing an educational profile of the LFL students, making use of a 'control group' to highlight the distinctiveness, or otherwise, of the LFL students.

Notes for chapter 2

1. See Zappalà, Smyth & Considine (2002), however, for a preliminary assessment of the LFL program.

2. The LFL and LSAY questionnaires used slightly different scales which makes comparison on the 'agree' categories unreliable. The 'neutral' option was offered as a middle position in the LFL questionnaire and as a residual position (at the end) in the LSAY questionnaire. As a result, across many questions, around one fifth of LFL students regularly opted to 'sit on the fence' in the neutral position, whereas only a few percent of the LSAY students opted for the residual position. In order to make the questionnaires comparable, we have assumed that all of the fence sitters among the LFL students would have opted for the 'agree' or 'disagree' option if they had confronted the LSAY scale where the neutral option was not available. They would not have changed their view to that of 'strongly agree' or 'strongly disagree'. For this reason, we would argue, restricting the analysis to a comparison of the 'strongly agree' students makes the two questionnaires comparable.

2. For example, there may be a disproportionate number of female students in the sample or an unduly strong influence coming from type of housing.

3. Type of housing, geographical location, and family type were excluded.

4. These probabilities are estimated by the logit model that was fitted to the data.

5. Unfortunately, a multivariate analysis did not further illuminate the findings, since a logit model comparable to the earlier one (Table 2.2) did not fit the data adequately.

6. While three other variables - male, government school and parent with tertiary qualifications - were statistically significant, the odds ratios were not substantively significant (reductions in the order of 0.9 and 0.8). Furthermore, when adjusted and non-adjusted probabilities were compared between the two groups of students, the original difference (21 versus 24%) further weakened (23 versus 25%).

7. It is possible, for instance, that: students with more positive attitudes towards school and learning may be more likely to participate in the LFL program; LFL students may be reluctant to report any negative attitudes on a survey conducted by The Smith Family; or their positive attitudes may be a function of merely being involved in the study. In addition, data not yet available on the length of time students have spent on the program, and the nature and extent of individually directed attention from the LFL Education Support Workers, are likely to have a significant influence on analyses of both attitudinal and academic outcomes. A further aim of this longitudinal study is to gather both quantitative and qualitative information on these data items that may assist in providing a more in-depth assessment of the LFL program.

8. Among the comparable group of LSAY students, however, there was a much larger percentage (approximately 15%) of students with a tertiary educated parent. The influence of this factor was largely subsumed by the influence of post-school plans.

References for Chapter 2

Buckingham, J (2000) 'The truth about private schools in Australia', Issue Analysis No. 13, Centre for Independence Studies, Sydney: CIS.

Card, D and Krueger, A.B (1998) 'School resources and student outcomes', *The Annals of the American Academy*, 559, pp.39-53.

Cheers, B (1990) 'Rural disadvantage in Australia', *Australian Social Work*, 43(1), pp. 5-13.

Coleman, J.S., Campbell, E.Q., Hobson, C.J., McPartland., Mood, A.M., Weinfeld, F.D., and York, R.L (1966) *Equality of Educational Opportunity*, Washington D.C.: Government Printing Office.

Considine, G. and Zappalà, G (2002) 'The Influence of Social and Economic Disadvantage in the Academic Performance of School Students in Australia', *Journal of Sociology*, 38(2), pp.129-148.

(HREOC) Human Rights and Equal Opportunity Commision (2000) *Emerging Themes: National Inquiry into rural and remote education*, Sydney: HREOC.

Kain, J.F and Singleton, K (1996) 'Equality of educational opportunity revisited', *New England Economic Review*, May/June, pp.87-111.

Marks, G. N. and Long, M (2000) 'Weighting the 1995 Year 9 Cohort Sample for Differential Response Rates and Sample Attrition', Technical Paper No. 15, Australian Council for Educational Research, Melbourne:ACER.

Marks, G. N., McMillan, J. and Hillman, K (2001), *Tertiary Entrance Performance: The Role of Student Background and School Factors*, Research Report No. 22, Australian Council for Educational Research, Melbourne:ACER.

McLaren, J and Zappalà, G (2002) 'The digital divide among financially disadvantaged families in Australia', *First Monday: Peer-reviewed journal on the Internet*, 7(11), November, 2002. http://firstmonday.org/issues/issue7_11/

Prior, H. and Beggs, J (1989) 'Influence of Family Background on Educational and Labour Force Outcomes of Year 12 School Leavers', *Australian Journal of Statistics*, 31A, pp.99-124.

Rich, A (2000) *Beyond the classroom: how parents influence their children's education*, Policy Monogaph No. 48, Centre for Independent Studies, Sydney:CIS.

Ruge, J (1998) *Raising expectations: Achieving quality education for all*, DSP Discussion Paper, NSW Department of Education and Training.

Schuller, T (2001) 'What kinds of more mean better? Continuous scholarisation or lifelong learning', *Critical Quarterly*, 43(1), pp.66-72.

Smyth, C., Zappalà, G. and Considine, G (2002a) 'Promoting participation and inclusion at school: A progress report on TSF's *Learning for Life* program', Briefing Paper No. 11, Research and Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Smyth, C., Zappalà, G., Considine, G (2002b) 'School to adult life transitions through work and study: A select review of the literature', Background Paper No.4, Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Sparkes, J (1999) 'Schools, education and social exclusion', CASE Paper 29, Centre for Analysis of Social Exclusion, London School of Economics, London: LSE.

Thorn, W (2000) 'Transition Surveys in Australia', Paper presented at *International Workshop on Comparative Data on Education-to-Work Transitions*, OECD, Paris.

Zappalà, G. and Parker, B (2000) 'The Smith Family's *Learning for Life* program a decade on: poverty and educational disadvantage', Background Paper No.1, Research and Advocacy Team, The Smith Family, Camperdown: The Smith Family.

Zappalà, G. and Considine, G (2001) 'Educational performance among school students from financially disadvantaged backgrounds', Working Paper No. 4, Research and Advocacy Team, The Smith Family, Camperdown: The Smith Family.

Zappalà, G., Smyth, C. and Considine, G (2002) *Reducing the barriers to educational participation: An initial assessment of students' views of Learning for Life*, Internal Report, The Smith Family, Camperdown: The Smith Family.

Chapter Three

Patterns of computer and internet access and usage among low-income households

Gianni Zappalà & Jennifer McLaren [1]

Introduction

An important barrier to participation in the 'new' or modern economy is the lack of access, increasingly home access to Information and Communication Technologies (ICT), namely, computers and the Internet (Zappalà 2000). The existence of unequal access and usage of ICT across the population – commonly referred to as the 'digital divide', is creating another 'great dividing range. In the age of the information economy, modems - not mountains - separate the population' (Manktelow 2001). The Census figures released late last year suggest that the 'digital divide' may be widening (Mathewson 2002).[2]

While there is some evidence that an increasing number of people have access to ICT, this is occurring more slowly than predicted by some analysts. There seems to be reason to dampen some of the more optimistic views that were being expressed about the temporary nature of the 'digital divide' (Zappalà 2001). More importantly, the evidence confirms that the probability of households and children having home access to ICT is strongly related to socioeconomic status (SES), namely access increases with higher levels of SES. We know less, however, about the factors associated with home access and usage of ICT within certain SES groups, in particular, low-income households.

This chapter presents data on the access and usage of computers and the Internet by households and children from financially disadvantaged backgrounds. The analysis reported here is based on data from almost 7,000 students from approximately 3,500 households on The Smith Family's *Learning for Life* (LFL) program. The LFL program aims to increase the participation of children from financially disadvantaged families in the educational process by the provision of financial and educational support (see Zappalà & Parker 2000; Smyth et al 2002 for an overview of the program). Further details on the data source and survey are contained in Appendix three and McLaren and Zappalà (2002).

The next section briefly outlines the concept of the 'digital divide' and its relationship to socioeconomic status. In particular, there are significant educational implications of not having home access to computers and the Internet for children from financially disadvantaged backgrounds. This is followed by a discussion of the key factors that have been found to influence access in previous studies. The remainder of the chapter discusses the main findings in terms of the factors associated with the ownership and access of computers and the Internet, the frequency of computer and Internet usage and the location of Internet usage among LFL households and students. The final section concludes by outlining some policy implications of the findings.

The ABC of the 'digital divide'

The 'digital divide' argument is well known – namely, that the unequal access and usage of ICT across the population is compounding disadvantage for some, because having access to ICT is becoming central to being able to fully participate in the economic, social, political and cultural spheres of society (Lee et al 2002). The advent and increasing sophistication of ICT has changed, and will continue to change, the way in which businesses, governments, communities and individuals operate and interact with each other. Some of the key spheres in which ICT is influencing participation (or lack thereof) in society include:

Economic participation

- Enabling people to search and apply for employment opportunities;
- Many jobs now involve having minimum levels of ICT competency as prerequisites.

Education & lifelong learning

- Opportunities for lifelong learning, especially for people who have not had experience of the formal education sector, are more easily accessed through distance and e-learning programs;
- Access to ICT is central for 'online schools' for children living in remote areas;
- Studies show that students, teachers and parents feel that computers have a positive effect on learning (Ainley et al 2000);
- Recent research from the U.S. shows that the presence of computers and Internet at home are strongly and positively associated with the academic outcomes of school children, particularly children from disadvantaged backgrounds (Wilhelm et al 2002);
- Given the increasing use of ICT by students at school, there is a risk that teachers and schools operate on the assumption that all children have access to computers and the Internet at home, which may influence their expectations of students' work and their computer literacy at school (Mathewson 2002);
- Different levels of ICT access, support and skills between private and public schools may further exacerbate public versus private school disparities.

Access to services

- Many government services are being increasingly provided over the Internet, as are billing and banking services, which often offer discounts for paying or accessing services on-line. Using the Internet for these services not only saves time but is more cost effective. A recent study found that most people (73%) who incorporated the Internet into their everyday lifestyle were able to reduce the time spent on errands by four hours per week, and many (40%) saved up to $30 per week (Centre for International Economics 2001).

Political participation & social inclusion

- Given the fact that the Internet is able to transmit information efficiently across geographical boundaries, it has the capacity to reduce some of the disadvantage associated with living in distant and remote locations;
- The Internet is becoming increasingly important for political participation and the democratic process, with several political movements or protests now occurring via email campaigns. Similarly, most political parties and several political representatives now use the Internet as a key means of communication with the electorate and constituents (Curtin 2001);
- Many cultural/leisure activities now involve or benefit from access to the Internet. In fact, the Internet is also 'promoting social inclusion of traditionally marginalised groups such as the elderly, disabled and women with children' through facilitating communication and access to support networks (Robbins 2000:14).

The unequal access to ICT not only affects the lives of individuals who happen to be on the wrong side of the divide, but society as a whole (Perri 6 with Jupp 2001). A 'technology' gap will have:

- Economic consequences - Australia will have lower productivity if fewer people have the opportunity to exploit the benefits of ICT (Lee et al 2002); and
- Social consequences - Australia will be less cohesive if the 'new' or 'information' economy/society becomes the preserve of an exclusive minority (Zappalà et al 2002).

Furthermore, while having access to the Internet can bring several benefits such as those listed above, more recently, commentators have pointed out that the 'digital divide' is more than just a simple division between those with access to the physical hardware of the new ICT and those without. The concept needs to also encompass the broader social environment within which technologies operate. As one recent critic of the 'digital divide' label has argued:

> [A]ccess to ICT is embedded in a complex array of factors encompassing physical, digital, human, and social resources and relationships. Content and language, literacy and education, and community and institutional structures must all be taken into account if meaningful access to new technologies is to be provided (Warschauer 2002:6).

A simple but useful concept that encapsulates this idea is what has been termed the 'ABCs of the digital divide' - Access, Basic Training and Content (Wilhelm et al 2002:2). It recognises that the divide is not solely about physical access to ICT, but also ensuring that people have the requisite resources and skills to use the technology appropriately. This chapter sheds most light on the access issue.[3]

The 'digital divide' in Australia: the state of play

Before we move onto examining the findings, it is useful to briefly review some of the key studies and surveys that have sought to identify the extent of computer and Internet access and usage by individuals in Australia as well as the factors that may be driving the differential access. The findings from four recent studies are summarised in Table 3.1, although comparisons are difficult because of the different sample sizes and timeframes of each particular survey.

The most reliable of the four is the survey conducted by the Australian Bureau of Statistics (ABS) in November 2000 (ABS 2000a). It showed that just over half (56%) of all households in Australia had a computer in their home, and just over one-third (37%) had home Internet access. These figures represented a sharp increase in Internet access, as 1998 estimates by the ABS suggested that only one in eight households were connected to the Internet. Furthermore, on the basis of trends at the time, the ABS projected that every second household in Australia

Table 3.1 Recent Australian data on Household ICT Access

Study	ABS (2000a)		NOIE (2002)		Casson et al (2002)		Ericsson (2002)*	
Time of survey	Nov. 2000		Sept 2001		2000-01		May 2002	
Sample	3200 households		500 households		1252 households		2000 individuals	
	% Com.	% Inter.	% Com.	% Inter.	% Com.	% Inter.	% Com.	% Inter.
All households	56	37	64	52	-	44	76	68
With children	74	48	-	-	-	58	-	-
No children	46	32	-	-	-	36	-	-
Household income			-	-	-		-	-
$0 -$49K	37	21	-	-	-	22-47	-	-
>$50K	77	57	-	-	-	67	-	-

Notes: * Cited in Connors (2002)

(or 50%) would have home Internet access by the end of 2001.Table 3.1 suggests the ABS projection was accurate, as data collected in September 2001 by the National Office for the Information Economy (NOIE) estimated that almost two-thirds (64%) of Australian households owned or leased a computer, and just over half of all households (52%) were connected to the Internet (NOIE 2002). The other two studies listed in Table 3.1 are less comparable as their samples were skewed towards people in capital cities in the case of Ericsson, and towards rural areas in the other (Casson et al 2002). The most recent study, based on a sample of 2000 individuals across five state capitals, conducted by Ericsson Australia, found that three-quarters of Australians have a PC at home and almost 70 per cent have home Internet access (Connors 2002). Overall, these surveys confirm that on a comparative basis, Australia ranks highly (3rd in the world) in adopting 'Information Economy enabling technologies' (NOIE 2002; DITR 2002).

Despite these figures that suggest Australia is a high consumer of ICT, it is well documented that the pattern of this consumption is not spread evenly across the population (Zappalà et al 2002). In brief, the 'usual suspects' of socioeconomic disadvantage are involved in the digital divide:

- *Income*: People's level of income is an important factor in determining who benefits from the new technology. In 1998/99, for instance only 6 per cent of households on incomes less than $19,000 were connected to the Internet compared to 47 per cent of those on incomes of more than $84,000 (Hellwig & Lloyd 2000). In 2000 the disparity between income groups was still relatively high, with income earners in the top bracket 3.5 times more likely to have an Internet connection at home than those in the lowest bracket. The ABS survey found that households on incomes of $50,000 or greater are twice as likely as households with incomes less than $50,000 to have a home computer and Internet access (ABS 2000a). A key reason why low-income households with computers do not have Internet access is due to the costs of connection (Curtin 2001).
- *Level of education*: The study by researchers at the National Centre for Social and Economic Modelling (NATSEM) found that all else being equal, educational attainment of an individual was a stronger predictor of having home computers and the Internet than income (Hellwig & Lloyd 2000). Individuals with a university education were 2.5 times more likely to have home access to the Internet than those without.
- *Geographic location*: Although the connection between the 'urban-rural divide' and the 'digital divide' is subject to debate, where a person lives does appear to influence their home access to the Internet. While the proportion of adults with Internet access at home in metropolitan areas grew from 24 to 30 per cent between 1998 and 1999, the corresponding increase in non-metropolitan areas was from 15 to 18 per cent (Hellwig & Lloyd 2000). The latest figures from the ABS suggest that the gap between city and country in terms of Internet access is decreasing, with 40 per cent of all metropolitan households having access compared to 32 per cent of all households in non-metropolitan areas. Furthermore, once studies control for the influence of education and income, the influence of geographic location diminishes. This suggests that the observed differences between metropolitan and non-

metropolitan areas is a function of the different sociodemographic characteristics of metropolitan and non-metropolitan populations, in particular, the lower income and qualification levels of the latter. As one researcher has stated, 'Geography may not determine it [Internet access], but there is obviously a geographical dimension to it' (Curtin cited in Manktelow 2001:4; Curtin 2001).

- *Age*: Adults aged over 55 are significantly less likely to have Internet access compared to younger groups in the population (ABS 2000a).
- *Gender*: The role of gender is unclear, with some studies finding that females have lower take-up rates for the Internet than males (ABS 2000a) while other studies find that gender plays little to no role in access (NOIE 2002).[4]
- *Occupation*: Blue-collar workers are less likely to be connected to the net at home compared to other occupational groups after controlling for income and qualifications. Those in low paid jobs are also less likely to use a computer or access the Internet at work (Hellwig & Lloyd 2000).
- *Family type*: Households with children are more likely to have home computers and Internet access compared to households without children. One-parent households, however, are far less likely to have access to the Internet (26%) than two-parent households (51%) (ABS 2000c).
- *Indigenous status*: Indigenous Australians are less likely to have home computers and Internet access compared to non-Indigenous Australians.

Most of these findings confirm that people from higher socioeconomic backgrounds have greater access to ICT compared to those from lower socioeconomic backgrounds. Another important dimension is the factors that may influence ICT access and usage within certain demographic and socioeconomic groups. In particular, the factors that may be associated with home computer and Internet access for children from low socioeconomic backgrounds.

A profile of the LFL students in the study

Table 3.2 presents the characteristics of the sample of LFL students that responded to the survey. In terms of the two main socioeconomic characteristics available, an overwhelming majority (90%) of the students came from households where social security was the main source of income.[5] Over two-thirds (69%) of the students have parents with ten or less years of education (i.e. completed up to or less than Year 10). [6]

In terms of the main socio-demographic variables, almost half (47%) of the students were in Years 7-10 with just under one-third in Years 4 to 6, and there was an even mix of male and female students. The majority (59%) of students that responded came from one-parent families, and approximately five out of every six students were from an English speaking background. Just under half of the students (44%) lived in public housing, just over one-third (36%) were from families that lived in privately-rented accommodation and one-fifth were from families that either owned or were paying-off their own homes.

With respect to geographic location, most of the students that responded (59%) lived in non-metropolitan areas. Furthermore, over two-thirds (68%) of students lived in areas that were below the median level of locational

disadvantage in Australia as measured by the Index of Relative Socio-Economic Disadvantage (IRSED). The IRSED is one of five Socio-economic Indexes for Areas (SEIFA) derived from the 1996 Census of Population and Housing. The indexes relate to socio-economic aspects of geographical areas. The IRSED is derived from features such as low-income, lack of English language fluency, low educational attainment and high unemployment. A low score on this index indicates that the area has high levels of low-income families and individuals in unskilled occupations with little training. The percentile indicates the relative extent of disadvantage compared with other communities in Australia. For example, living in an area that scored in the bottom decile indicates that the families in the area are on average worse off than 90 per cent of the rest of the families in Australia. An IRSED score was calculated for each case in the sample based on their post-code and then converted into percentile bands.

Home access to computers and the Internet

Based on the household sample (see Appendix 3), 59 per cent of families had a computer at home. At first, this appears to be a higher level of ownership than that revealed by the ABS survey cited in Table 3.1. A more appropriate comparison, given that our sample comprises only households with school-aged children, would be with computer ownership among households with dependent children under the age of 18 who have access to a computer. This suggests that LFL families are significantly below the national average, as almost three-quarters (74%) of all Australian households with dependent children have home computers.

Table 3.3 also shows that just under one-third (32%) of families were connected to the Internet at home. Once again, while this is not too dissimilar to the level of home access revealed by the 2000 ABS survey (where 37% of households had access to the Internet), making the more meaningful comparison to households with dependent children reveals a greater level of disparity, as 48 per cent of all Australian households with dependent children under the age of 18 had home Internet access. Furthermore, it is also below the 58 per cent of households with children that had home Internet access revealed by more recent surveys (see Table 3.1).

Given that our sample comprises households that are all financially disadvantaged, it is not surprising that we would find lower levels of home access to computers and the Internet compared to families in the wider population. The following sections examine the extent to which certain socio-demographic and socioeconomic factors are associated with home access of computers and the Internet within this group of financially disadvantaged households.

The influence of socio-demographic factors on home access

Table 3.4 shows the proportion of households that had computer and Internet access at home according to a number of socio-demographic variables. It suggests that the geographic location of the household had no influence in terms of having a home computer, and households in metropolitan areas were only slightly more likely to have Internet access compared to those in non-metropolitan areas. This finding may seem to go against the commonly held view that the 'digital divide' has a spatial dimension

Table 3.2 Socio-demographic & SES characteristics of the LFL students

Student Characteristic	N[a]	%
Year level at school		
1-3	886	13
4-6	2023	30
7-10	3214	47
11-12	701	10
Total	6824	100
Sex		
Male	3407	50
Female	3461	50
Total	6868	100
Location		
Metropolitan	2800	41
Non-metropolitan	4074	59
Total	6874	100
Level of locational disadvantage (IRSED)[b]		
Bottom 10%	1273	19
10-25%	1484	22
25-50%	1874	27
50-75%	1432	21
75-90%	570	8
Top 10%	195	3
Total	6828	100
Housing Type		
Public rental	2986	44
Private rental	2388	36
Owns/purchasing home	1356	20
Total	6730	100
Family type		
One-parent	3933	59
Two-parent	2787	41
Total	6720	100
Ethnic/cultural background[c]		
Anglo-Australian	5348	79
Aboriginal/Torres Strait Islander (ATSI)	100	1
English speaking background (ESB)	201	3
Europe	332	5
Asia	138	2
Middle East & Africa	517	8
Central & South America	99	1
Pacific Islands	68	1
Total	6803	100
Main source of income		
Social security	5980	90
Employment	630	10
Total	6610	100
Parental education[d]		
< Year 10	1183	22
Year 10	2592	47
Year 12	698	13
TAFE/Other post-secondary	608	11
University degree	378	7
Total	5459	100

Notes:

a Total number of cases vary for each variable due to missing data.

b Percentiles indicate level of disadvantage relative to Australia as a whole. For example, 10-25% encompasses areas that are better off than at least 10% of Australia and at most 25% of Australia. An area falling in the 50-75% band is less disadvantaged than one falling in the 25-50% band.

c Refers to both first and second generation Australians.

d Education level of most highly educated parent.

(Curtin 2001). Studies that have used multivariate techniques in examining Internet access, however, have found that the influence of geography disappears once variables such as education level and income are controlled for (Hellwig & Lloyd 2000). Given that this sample comprises only low-income households, these initial findings suggest that geographic location per se is not a significant influence with respect to access to ICT (see also Curtin 2001 on this point).[9]

Nevertheless, households that were located in the most disadvantaged areas, were less likely to have a home computer (52%) and home Internet access (27%), compared to households situated in the least disadvantaged areas (67% and 35% respectively). In terms of the type of housing that families lived in, households that owned or were purchasing their homes were more likely to own a computer (73%) than households that were renting privately (58%) or living in public housing (53%). Owners/purchasers were also more likely to have Internet access (43%) compared to those renting privately (33%) or in public housing (26%).

Table 3.3 Home computer and Internet access (LFL Households)

	Computer		Internet	
	%	N	%	N
Yes	59	2006	32	1085
No	41	1398	68	2319
Total	100	3404	100	3404

Table 3.4 ICT home access and socio-demographic variables

Characteristic	Computer (%)	Internet (%)
Overall distribution	**59**	**32**
Location		
Metropolitan	59	34
Non-metropolitan	59	30
Level of disadvantage		
Bottom 10%	52	27
10-25%	59	30
25-50%	59	32
50-75%	60	33
75-90%	67	40
Top 10%	67	35
Housing type		
Public rental	53	26
Private rental	58	33
Owns/purchasing	73	43
Ethnic Background		
Anglo-Australian	58	30
ATSI	25	15
ESB	50	30
Europe	71	53
Asia	81	43
Middle East & Africa	64	42
Central & South America	66	43
Pacific Islands	28	8
Family type		
One-parent	55	28
Two-parent	66	39

Table 3.4 also indicates that the ethnic/cultural background of the household seems to be associated with levels of ICT access. While caution is needed with respect to some groups given the small cell sizes, Indigenous households were much less likely to have a computer or Internet access at home compared to other groups, with the exception of households from 'Pacific Islands' background. Households where the parent/s were either Australian-born or born overseas but from English speaking backgrounds had similar levels of computer and Internet access to the overall mean. In contrast, households from NESB (especially European) had significantly higher levels of computer and Internet access.

Finally, family structure seems to be associated with access levels, with one-parent households having lower levels of access to a home computer (55%) and the Internet (28%) compared to two-parent households (66% and 39% respectively).

The influence of socioeconomic factors on home access

Table 3.5 shows the percentage of households with home computer and Internet access according to the two key socioeconomic status variables available. It suggests that both these measures of SES were associated with the level of ICT access.

Households whose main source of income was social security were far less likely to have computer at home compared to those whose main source of income came from employment (58% v. 72%). Similarly, home Internet access was higher for households whose primary income was from employment (44%) compared to those on social security (31%).

A striking finding was the strong association between the level of parental education and computer and Internet access. This is illustrated further in Figure 3.1. While 43 per cent of households where the parent/s had less than ten years of education had a computer at home, for instance, this increased to 88 per cent for households where the parent/s was university-educated. Similarly, while only 18 per cent of households where the parent/s had less than ten years of education had Internet access at home, this increased to 57 per cent of households with a university-educated parent/s. This finding is consistent with previous studies that have found education level to be the key driver of Internet access, followed in importance only by income level (Hellwig & Lloyd 2000).

Frequency of computer usage by LFL students

In addition to examining the ownership and access of ICT by households, we also examined how frequently students use computers and the Internet as well as where they access them. An overwhelming majority of students (98%) indicated that they used a computer. This is comparable to Australia-wide surveys that have found that 95 per cent of children aged five to 14 used a computer in the last 12 months (ABS 2000b). Of those that used a computer, Table 3.6 presents the variation in the frequency of usage by a range of socio-demographic variables. Overall, most students stated that they use a computer 'sometimes' (33%) or 'often' (28%), with one quarter of students stating that they use a computer 'regularly'.

Table 3.6 shows that student age is a key factor in discriminating among LFL

students in terms of frequency of computer usage. The older students use computers more frequently than younger students. Boys were also more likely to state they used a computer 'regularly' (28%) compared to girls (22%).

In terms of ethnic/cultural background, students from a European background were most likely (32%) to use a computer 'regularly' compared to other groups. Students from two-parent families were also more likely to use a computer 'regularly' (27%) compared to students from one-parent families (24%).

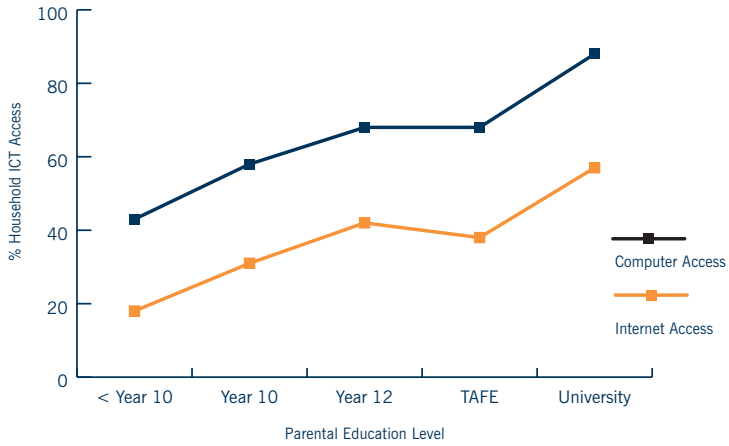
Students from metropolitan areas were slightly more likely to use a computer 'regularly' (26%) compared to those from non-metropolitan areas (24%). Regular usage was also higher for students who lived in the more advantaged areas based on the IRSED and for those who lived in a house that was owned or being paid-off compared to those in private or public rental accommodation.

Table 3.7 examines frequency of computer use by socioeconomic status. Once again, parental level of education seemed to have a strong influence, with over one-third (35%) of students whose parents were university educated using a computer 'regularly' compared to 23 per cent of students whose parents had not completed Year 10. Similarly, students whose parents' main source of income was from employment were more likely to state they used a computer regularly (29%), compared to students whose parents' main source of income was from social security (24%).

Table 3.5 ICT home access and socio-economic variables

Characteristic	Computer (%)	Internet (%)
Overall distribution	59	32
Main source of income		
Social security	58	31
Employment	72	44
Parental education		
< Year 10	43	18
Year 10	58	31
Year 12	68	42
TAFE/Other post-secondary	68	38
University degree	88	57

Figure 3.1 Households with home computers and Internet by education level of parent(s)



Frequency of Internet usage by LFL students

Just over four-fifths of students (82%) indicated that they had used the Internet. Consistent with other studies (see ABS 2000b), Figure 3.2 shows that older students were significantly more likely to state that they had used the Internet (95% for those in Years 11 and 12) compared to younger students (49% for those in Years 1 to 3).

Once again, the level of parental education was a key factor in whether students used the Internet (Figure 3.3). While 92 per cent of students whose parent/s were university educated had used the Internet, this fell to 76 per cent for students whose parents had not completed Year 10. In terms of odds ratios, students whose parents completed Year 12 were one and a half times more likely to have stated that they had used the Internet than students whose parents did not complete Year 12. Those students whose parents had a university degree were almost three times more likely to have ever used the Internet than those whose parents did not have a university degree.

Of those that used the Internet, Table 3.8 presents the variation in the frequency of usage by a range of socio-demographic variables. Overall, only a small proportion of students stated that they used the Internet 'regularly' (11%), with just over one-fifth stating they used the Internet 'often' (22%), and almost two-thirds of students stating that they used the Internet either 'rarely' or 'sometimes'. Overall then, LFL students use the Internet less frequently than computers.

Table 3.8 also suggests that student age is a key factor in discriminating between the frequency of Internet usage among LFL students, with older students using the Internet more frequently than younger students do. Male students were slightly more likely to state they used the Internet 'regularly' (13%) compared to female students (10%). In terms of ethnic/cultural background, students from a European background were most likely (17%) to use the Internet 'regularly' compared to other groups; while there was little difference in Internet usage by students according to family structure. Students from metropolitan areas were slightly more likely to use the Internet 'regularly' (14%) compared to those from non-metropolitan areas (10%).

Table 3.9 examines frequency of Internet use by our two socioeconomic status measures. In contrast to computer usage, there did not appear to be a strong relationship between socioeconomic status and the regularity of Internet usage.

Where students use the Internet

Almost three-quarters (70%) of students that used the Internet did so at school. Table 3.10 shows that the next most common location for Internet use was at home (29%). While the importance of school as a site for Internet use is consistent with other nation-wide surveys, the proportion of students who indicated they used the Internet at home is lower compared to the national average. For instance, the ABS found that 67 per cent of children aged between five and fourteen used the Internet at school and 56 per cent used the Internet at home (ABS 2000b). Looking at a similar age group among the LFL students shows that while the same proportion (67%) was found to use the Internet at school, the rate for using the Internet at home was only 27 per cent. Given the relatively low rates of home Internet access discussed earlier

Table 3.6 Frequency of computer use by socio-demographic variables

Characteristic	Frequency of computer use (%)				
	Rarely	Sometimes	Often	Regularly	N[a]
Overall distribution	14	33	28	25	6694
Year					
1-3	18	47	20	15	846
4-6	16	36	27	21	1981
7-10	12	29	32	28	3131
11-12	13	21	30	36	690
Sex					
Male	14	31	27	28	3310
Female	14	34	30	22	3378
Ethnic Background					
Anglo-Australian	14	33	28	25	5213
ATSI	12	32	29	27	96
ESB	10	32	32	26	196
Europe	12	29	26	32	325
Asia	10	30	33	27	133
Middle East & Africa	20	31	26	23	501
Central & South America	11	36	28	25	97
Pacific Islands	29	29	24	18	62
Family type					
One-parent	15	33	29	24	3824
Two-parent	13	33	27	27	2723
Location					
Metropolitan	15	32	27	26	2727
Non-metropolitan	14	33	29	24	3967
Level of disadvantage					
Bottom 10%	13	33	30	25	1239
10-25%	15	33	29	24	1446
25-50%	16	33	26	26	1831
50-75%	16	31	30	24	1382
75-90%	11	33	29	27	560
Top 10%	12	33	27	29	191
Housing type					
Public rental	16	34	27	23	2901
Private rental	14	32	29	25	2319
Owns/purchasing	10	30	30	29	1335

Notes:

[a] Number of cases may vary for each variable due to missing cases.

Table 3.7 Frequency of computer use and socioeconomic variables

Characteristic	Frequency of computer use (%)				
	Rarely	Sometimes	Often	Regularly	Na
Overall distribution	14	33	28	25	6694
Parental education					
< Year 10	18	35	25	23	1136
Year 10	14	34	29	24	2526
Year 12	16	29	27	28	688
TAFE/Other post-secondary	13	34	31	22	597
University degree	8	25	33	35	375
Main source of income					
Social security	15	33	28	24	5815
Employment	11	30	31	29	620

Notes:

[a] Number of cases for each variable may vary due to missing cases.

Table 3.8 Frequency of Internet use and socio-demographic variables

Characteristic	Frequency of Internet use (%)				
	Rarely	Sometimes	Often	Regularly	N[a]
Overall distribution	32	35	22	11	5565
Year level					
1-3	44	38	13	5	423
4-6	36	39	18	7	1606
7-10	28	35	24	13	2861
11-12	29	25	27	19	658
Sex					
Male	31	35	22	13	2731
Female	33	35	22	10	2830
Ethnic background					
Anglo-Australian	32	36	21	11	4293
ATSI	33	38	21	9	77
ESB	31	30	23	16	172
Europe	24	32	27	17	287
Asia	38	33	18	11	118
Middle East & Africa	31	31	25	13	424
Central & South America	19	38	33	10	81
Pacific Islands	36	36	21	7	58
Family type					
One-parent	33	36	21	11	3163
Two-parent	30	35	23	12	2274
Location					
Metropolitan	30	34	23	14	2301
Non-metropolitan	33	36	22	10	3264
Level of disadvantage					
Bottom 10%	32	34	22	12	1037
10-25%	32	37	21	10	1204
25-50%	32	35	22	12	1474
50-75%	31	34	23	12	1167
75-90%	31	35	21	13	481
Top 10%	29	35	22	14	162
Housing type					
Public rental	33	36	20	12	2342
Private rental	32	34	23	11	1945
Owns/purchasing	29	36	24	12	1159

Notes:

[a] Number of cases may vary for each variable due to missing cases.

Table 3.9 Frequency of Internet use and socioeconomic variables

Characteristic	Frequency of Internet use				
	Rarely	Sometimes	Often	Regularly	N[a]
Overall distribution	32	35	22	11	5565
Parental education					
< Year 10	33	38	18	11	894
Year 10	32	36	21	11	2090
Year 12	32	32	24	13	587
TAFE/other post-secondary	34	33	21	12	500
University degree	26	35	29	10	347
Main source of income					
Social security	32	35	22	11	4819
Employment	32	32	25	10	536

Notes:

[a] Number of cases may vary for each variable due to missing cases.

(32%), these findings are not that surprising, but more importantly, they suggest the important role that schools have as a means of providing access and training in ICT for students of disadvantaged backgrounds (Zappalà et al 2002).

It is also interesting to note that using the Internet at school was also related to the level of parental education. While two-thirds of students whose parents had not completed Year 10 stated they used the Internet at school, this increased to almost four-fifths of students whose parents were university educated. Apart from the level of parental education, student age was the only other variable that influenced use of the Internet at school, with usage increasing for older students (38% of students in Years 1-3 used the Internet at school compared to 76% for students in Years 11-12).

Discussion and conclusions

This chapter focused on what was termed the 'A' of the 'ABCs of the digital divide' - Access, Basic Training and Content (Wilhelm et al 2002:2). Our findings point to several preliminary research and policy implications.

Figure 3.2 Internet use by age

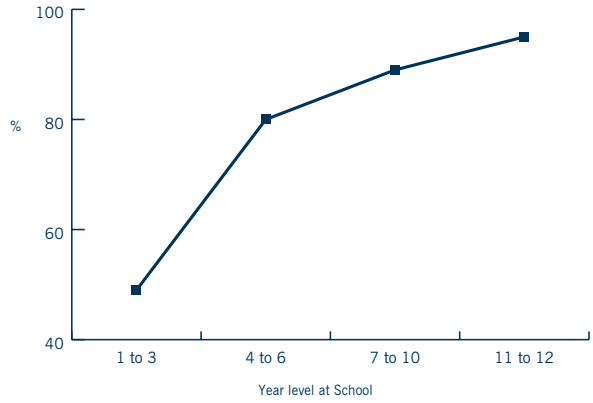


Figure 3.3: Internet use by parental education level

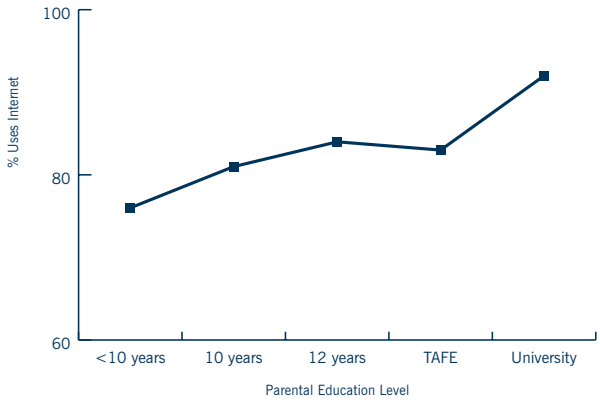


Table 3.10 Location of Internet Use

Place Internet used	N	%*
During school	4790	70
Home	2024	29
Friend's House	1466	21
Public library	1113	16
At school after hours	327	5
Youth/community centre	90	1
Other	252	4
Internet café	66	1

Notes

* Does not add up to 100% because participants could endorse more that one option

First, while the access gap has been narrowing over the last few years, only one-third of families who were on the LFL program at the end of 2001 had home Internet access. This compares to almost half of the comparable (i.e. families with children) population Australia-wide. While some may not consider this finding to be that alarming, when seen in the context that having home Internet access is increasingly important for children's educational performance, then the fact that almost three-quarters of students did not use the Internet at home is of concern. Finding ways to increase the home access of low-income families to the Internet should therefore remain a policy priority for all sectors (government, private and nonprofit) aiming to bridge the digital divide.

Second, the results are particularly interesting given that our sample controls for one of the key socioeconomic factors known to be associated with lack of access - income. All families on the LFL program are by definition low-income families. Despite this, several other dimensions of socioeconomic status seemed to be related to home access of computers and the Internet, and in some instances, the usage of computers and the Internet. In particular, the level of parental education was most strongly associated with home access to computers and Internet as well as computer and Internet usage. This finding is consistent with the key role found for educational level in home access to ICT in the multivariate analysis conducted by NATSEM (Hellwig & Lloyd 2000; see also Chapter 1).

This finding also bears a remarkable similarity to other studies that examined the relationship between the educational performance of students on LFL and socioeconomic status (Zappalà & Considine 2001; Considine & Zappalà 2002). Controlling for other variables, the authors found that a student whose parent/s were university educated had a 39 per cent predicted probability of attaining 'outstanding' results compared to 9 per cent for students whose parent/s had not completed Year 10. A key reason posited to explain that finding was that the levels of parental education acts as a proxy for the degree of educational support parents provide for their children. Similarly, the previous chapter by Watson and Considine also found that LFL students living with a parent/s that had a tertiary education were significantly more likely to have strongly positive feelings about going to school and learning. Previous studies show that the level of parental education is strongly associated with factors such as the home literacy environment, parents' teaching styles and investment in resources that promote

learning (Shonkoff & Phillips 2000). Key resources for learning in today's information society also include computers and the Internet.

This has at least two implications. First, the costs of these resources, as with other educational costs in general, are increasingly being pushed onto individual families. This further compounds the problem for families in financial disadvantage who often struggle to meet the basic costs of their children's education. It therefore reinforces the need for programs such as *Learning for Life* that aim to assist families in financial disadvantage to meet some of the costs associated with their children's education.

Second, policies aimed at bridging the digital divide should not only focus on reducing the cost of ICT, but also on ensuring that programs that provide appropriate parenting support also emphasise the educational importance of having home access to computers and the Internet. This may also mean that access and training programs should focus just as much on parents as they do on children. The lack of existing policies that address computer and Internet skills among adults was also identified as a key concern in a comprehensive review of ICT education policies in Australia (Kearns & Grant 2002). The report stated:

> [T]he focus of Australian policy for ICT in education has been on the sectors of the formal education system, and more could be done on a national level to address the needs of adults lacking ICT skills and digital literacy (p.3).

Once again, the dual-generation approach (focus on parents and children) of programs such as *Learning for Life* provides an appropriate framework within which to embed such initiatives.

Third, other key factors associated with home access were ethnic and cultural background, family structure, housing type and regional disadvantage. The findings with respect to ethnicity were also consistent with the above-mentioned study on educational outcomes of LFL students. Namely, students from NESB (with the exception of those from Middle East/Africa) were significantly more likely to achieve outstanding results compared to students from English-speaking backgrounds. Similarly, the findings with respect to access suggest that families from some NESB groups have higher levels of home access compared to those that were either Australian born or born overseas from English speaking countries.

Fourth, schools are important in closing or leveling the access gap, as most students use computers and the Internet at school. Reinforcing the role of parental education, however, the likelihood of students using the Internet at school also increased in line with the educational level of their parents. Greater research and policy attention needs to be given to the role of schools, teachers and parents in the 'ABC of the digital divide'.

Appendix 3 Data used for the study

The data used for this study come from administrative records of students and families on The Smith Family's *Learning for Life* (LFL) program. As part of developments and enhancements to the program aimed at increasing access and usage of ICT by students, a small survey was included as part of the annual communication to families in October 2001. The main aim of the survey was to collect benchmark data on computer and Internet access and usage among LFL students. Although the survey was sent to parents in 5,850 households, they were asked to pass on the survey/s to their child/children to complete. Of the total students in the population (11,948), 7,226 completed the surveys, giving a response rate of 61 per cent. Each survey contained a unique student code to enable responses to be matched to background information contained in TSF's Client Services Management Information System (CSMIS) database.

Following data entry and the matching of responses to the relevant background information, several steps were taken to clean the data and arrive at the two final samples used for this analysis. First, the 7,226 student responses were screened for internal inconsistencies. For instance, 352 cases were removed because the student had answered 'no' in response to the question 'Do you ever use the Internet?' but also answered 'sometimes' 'often' or 'regularly' to another question on how often they use the Internet. This left a final student database of 6874 students.

Second, given that almost 85 per cent of students had siblings who also took part in the survey, a database of 'households' that responded was created. Of the 6,874 students 5,818 were members of families that had more than one child on LFL. This was particularly important for examining the extent of household access to ICT. Responses to questions such as 'Do you have a working computer in your home?' for instance, would be misleading if analysed on an individual basis, since two siblings answering 'yes' to this item does not mean that there are two households with a computer. The 'household' database allows the level of analysis to be the 'family unit' rather than the individual student.

Third, creating a household database enabled us to further filter and screen the sample so that inconsistent responses between siblings from the same household could be removed. There were 114 households where the response of one sibling was inconsistent with that of another sibling for the question 'Do you have a working computer in your home'. This corresponded to 266 individual cases that were deleted from the database. There were 187 cases where the question 'Where do you use the Internet?' - 'At home' was endorsed by one sibling and not by the other. These cases were not deleted, as it is possible that one child used the Internet at home while their sibling did not. This left a final sample of 3404 households. This represents 58 per cent of the total number of households that were on LFL at the time the data were collected.

Fourth, the respondents and non-respondents did not differ greatly in terms of the key characteristics. Further details on the response rates by different characteristics are contained in McLaren and Zappalà (2002).

Notes for chapter 3

1. The bulk of the research for this chapter was conducted while both authors were members of the Research & Social Policy Team, The Smith Family. We acknowledge the support by the Microsoft eMpower Australia Campaign.

2. The Census revealed that nationally, an average of 42 per cent of Australians had used a computer at home in the week preceding the Census. With respect to the Internet, only 19 per cent of Australians had been on line at home in the week before the Census. While these figures do not tell us how many households have a computer or the Internet at home they nevertheless provide a reasonable proxy that reveals that the 'digital divide' is still a real part of the Australian landscape.

3. For an overview of TSF's Computer Clubs that while also aimed at providing access, have a focus on training and content, see Smyth & Zappalà (2002).

4. For a recent study and discussion on the role of gender in the use of ICT among higher education students in North America, see Rajagopal & Bojin (2003).

5. Socioeconomic status refers to an individual's (or in this case parent/s) achievements in education; employment and occupational status; and income and wealth.

6. Refers to the education level of the highest educated parent.

7. Geographic location coding was based on the household's post-code and refers to the classification used by Australia Post – Capital city post-codes are classed as Metropolitan and all other areas as Non-metropolitan.

8. This figure was based on responses that endorsed the option 'At home' to the question 'Where do you use the Internet?' This proxy may underestimate the level of household access as there may be cases where a household had the Internet at home but the parent/s did not allow their child/children to use it.

9. A possible reason for the apparent lack of a geographic location effect is the coding system used, which does not allow a sharper differentiation of the 'non-metropolitan' category. This category includes, for instance, all areas other than a capital city (e.g. cities such as Newcastle in NSW). This was one reason that post codes were linked to IRSED scores, thus providing another proxy for geographical location.

10. Another important dimension of usage that this data did not allow us to explore is the purpose that students use computers and the Internet. For instance, do students use ICT primarily for educational or recreational purposes and does the purpose of usage vary by socioeconomic and demographic factors? We will examine these issues in another study later this year based on data from a different sample of LFL students in order to provide a more comprehensive understanding of ICT usage among low-income households.

References for Chapter 3

ABS (Australian Bureau of Statistics) (2000a) *Use of the Internet by householders, Australia*, ABS Cat.No. 8147.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2000b) *Children's participation in cultural and leisure activities, Australia,* ABS Cat. No. 4901.0, Canberra: ABS.

ABS (Australian Bureau of Statistics) (2000c) *Household use of Information Technology, Australia,* ABS Cat. No. 8146.0, Canberra: ABS.

Ainley, M., Bourke, V., Chatfield, R., Hillman, K and Watkins, I (2000) *Computers, Laptops and Tools,* ACER Research Monograph No. 56*,* Melbourne: ACER Press.

Casson, C., MacNeill, K., and Wilding, D (2002) *One size fits none: Australian telecommunications household profiles,* Sydney: UNSW, Communications Law Centre.

Centre for International Economics (2001) *Save@Home: Valuing the benefits of home Internet access,* Canberra: National Office for the Information Economy.

Connors, E (2002) 'It's follow my leader in gizmo game today', *Australian Financial Review,* 29 May.

Considine, G and Zappalà, G (2002) 'The influence of social and economic disadvantage in the academic performance of school students in Australia', *Journal of Sociology*, 38(2), pp. 129-148.

Curtin, J (2001) 'A digital divide in rural and regional Australia?', Current Issues Brief No. 1, 2001-02. Canberra: Department of the Parliamentary Library.

Department of Industry Tourism and Resources (2002) *Australia as a Modern Economy: Some statistical indicators 2002,* Canberra: DITR.

Hellwig, O and Lloyd, R (2000) *Sociodemographic barriers to utilisation and participation in telecommunications services and their regional distribution: A quantitative analysis,* Canberra: NATSEM, University of Canberra.

Kearns, P and Grant, J (2002) *The Enabling Pillars Learning, Technology, Community, Partnership: A report on Australian Policies for Information and Communication Technologies in Education and Training*, Canberra: DEST.

Lee, L., Markotsis, D and Weir, T (2002) 'Social impacts of the New Economy', New Economy Issues Paper No. 5, Canberra: DITR.

Manktelow, N (2001) 'The digital divide', *Icon Magazine, Sydney Morning Herald*, 1-2 December, pp.4-5.

Mathewson, C (2002) 'Computer use figures reveal economic divide', *Courier Mail*, 20 June, p.12.

McLaren, J and Zappalà, G (2002) 'The new economy revisited: an initial analysis of the digital divide among financially disadvantaged families', Background Paper No. 5, Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

National Office for the Information Economy (2002) *The current state of play: Australia's scorecard*, Canberra: NOIE.

Perri 6 with Jupp, B (2001) *Divided by Information? The 'digital divide' and the implications of the new meritocracy,* London: Demos.

Rajagopal, I with Bojin, N (2003) 'A gendered world: students and instructional technologies', *first monday*, 8(1) (http://firstmonday.org/issues/issue8_1/rajagopal/index.html)

Robbins, N (2000) 'Internet', Socially Responsible Investment Position Paper*,* London: AMP Henderson Global Investors.

Scott, M (1999) 'Information access and equity', Presentation at Community Networking Conference, *Engaging Regionalism,* 29 September – 1 October, 1999. http://communityconference.vicnet.net.au/99/papers/mscott.pdf

Shonkoff, J.P and Phillips, D.A (eds) (2000) *From Neurons to Neighborhoods: The Science of Early Childhood Development,* Washington DC: National Academy Press.

Smyth, C., Zappalà, G and Considine, G (2002) 'Promoting participation and inclusion at school: A progress report on TSF's *Learning for Life* program' Briefing Paper No.11, Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Smyth, C and Zappalà, G (2002) 'The Smith Family Computer Clubs pilot program: A Progress report', Background Paper No. 6, Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Warschauer, M (2002) 'Reconceptualizing the Digital Divide', *First Monday*, 7(7), at http://www.firstmonday.org/issues/issue7_7/warschauer.

Wilhelm, T., Carmen, D and Reynolds, M (2002) 'Connecting kids to technology: Challenges and Opportunities', *Kids Count Snapshot*. Baltimore, MD: Annie E Casey Foundation.

Zappalà, G (2000) 'The economic and social dimensions of the new economy', *Australian Journal of Social Issues*, 35(4), pp.317-331.

Zappalà, G (2001) 'On the hype and pitfalls of the new economy' Invited Keynote Address at the *Ideas at the Powerhouse – a festival of ideas, innovation and invention*, Powerhouse Museum, Brisbane, August 16-19, http://www.ideasatthepowerhouse.com.au/5_highlights/paperzappala.htm

Zappalà, G and Parker, B (2000) 'The Smith Family's *Learning for Life* program a decade on: poverty and educational disadvantage', Background Paper No.1*,* Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Zappalà, G and Considine, G (2001) 'Educational performance among school students from financially disadvantaged backgrounds', Working Paper No.4*,* Research & Social Policy Team, The Smith Family, Camperdown: The Smith Family.

Zappalà, G., Green, V and Parker, B (2002) 'The disadvantaged in the new economy' in Callus, R and Lansbury, R (eds) *Working Futures: The Changing Nature of Employment Relations in Australia.* Sydney: Federation Press.

Barriers to Participation

everyone's family