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The wider social benefits of higher education: what do we know about them?

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A B S T R A C T

There has recently been a shift towards private expenditure in the tertiary education sector accompanied by a shift of public subsidies to students themselves. Implicit in this shift is the message that tertiary education is a private rather than public good, belonging to individual students rather than society. This paper explores the research on the wider social benefits of higher education and the data and methodologies that exist to underpin it. Its focus is on benefits to society but, since individual social benefits are entangled with wider benefits, both are discussed. The paper finds that little research has been undertaken in Australia even though understanding the wider social benefits of higher education is considered important to policy development. Longitudinal survey data do exist that could be extended and harnessed for such research

Background

Businesses recognize that their social outcomes underpin their license to operate (Corporate Responsibility Index, 2009) but little is said of the wider social outcomes of education, even though universities are being entreated to 'evolve so that their leadership and management capacity matches that of modern enterprises' (Organization for Economic Co-operation and Development [OECD], 2007b, p. 14).There has been a general increase in tertiary-level skills in the population of OECD countries. Simultaneously there has been a decline in public funding to tertiary institutions. The proportion of private funding varies from less than 4 per cent in Denmark, Finland and Greece to over 50 per cent in Australia, with households in Australia covering 70 per cent of all private expenditure (OECD, 2006a; 2008). It is impossible to say how, or even if, the shift from public to private funding will affect the wider social benefits of education that could be expected to accrue to society in general rather than to individuals.

Preston and Hammond (2003) defined the wider benefits of learning as: encompassing both non-pecuniary private benefits pertaining to the individual (such as improved self-esteem, health and quality of life) and those social benefits (or externalities) impacting on society as a whole (such as community regeneration and cultural development). (p. 211)

> McMahon defined externalities as: the social benefits from education that spill over and benefit others, and society as a whole, as distinguished from directly benefiting those that made the investment. The social benefits can be monetary, raising GDP and the money income of others, or they can be the non-monetary satisfactions from living in an educated society. (1998, p. 322)

He argued that individuals may not consider the wider social good when allocating time to education and, unless there is public investment in education that encourages people to spend more time therein, the wider benefits for society gained through additional time in education by individuals may be jeopardized. He suggested that being able to access the goods that accrue to society will not affect an individual's decision to invest time in education because these goods are generally available, unaffected by the decision of one person (McMahon, 1999). Johnston clarified the difference between individual and social benefits (see Table 1).

Preston and Green (2003) noted that macro-social benefits are not necessarily observable within a single country context, cannot be attached to individuals or communities, and are benefits that operate at a system level or that of social integration. Examples of macro-social benefits, such as individual civic participation or health improvements, pertain to social cohesion, crime and trust. Although these may impact as social capital on communities and individuals, they do not necessarily aggregate to a societal level.

In 2007 the OECD determined to deal with the issue of limited data on the outcomes of higher education. Such data, it noted, should inform national policy and institutional strategic planning; cross-institutional data on student learning were required as well as data connecting learning with individual and aggregate social and economic outcomes. A feasibility study was proposed (OECD, 2007a; 2009).

This paper reviews the literature on the wider social benefits of higher education and the data sources that support it. It was prompted by the perceived lack of information on the outcomes of higher education at a time of declining public funding to tertiary institutions. The paper's focus is wider social benefits of higher education but, because social and individual benefits are often entangled, individual benefits are also discussed.

Table 1 Categories of benefits of education

	Earnings-related benefits	*Wider benefits*
Individual benefits	Higher wages	Healthier individuals Greater life satisfaction
Social benefits	Higher national income	Healthier population Better functioning society

Source: Johnston, 2004, p. 9

Literature Review

In 2006 the OECD reported that Australia spent below the OECD average on education and that public expenditure on education had declined since 1995, with the private share increasing by 9 percentage points between 1995 and 2005 (OECD, 2006b; 2008).The increase in private spending on tertiary education since 1995 was largely attributed to the Higher Education Contribution Scheme (HECS) introduced in 1997. The shift towards private expenditure at tertiary level has been accompanied by a fall in public expenditure in real terms and by increased public subsidies provided to tertiary students themselves (32 per cent of the public budget) rather than to the institutions in which they are enrolled (OECD, 2006b, p. 217; 2008, p. 271).

The Commonwealth Department of Education, Science and Training (DEST) said that the key reason for requiring a student contribution through the HECS scheme was the 'substantially greater lifetime earnings enjoyed by graduates relative to non-graduates' (2007, p. 57), which seems to underline the economic advantages of higher education and reinforce the view that the benefits of higher education accrue to the individual rather than to society as a whole.

Initiatives introduced through the Our Universities: Backing Australia's Future policy (DEST, 2003; Nelson, 2008) include performance-based programs to improve outcomes. Performance on 'accountability, planning, outcomes, quality and compliance with legal obligations' is analyzed annually (DEST, 2007, p. xiii). According to the accountability framework (DEST, 2008), quality outcomes include graduate destinations, students' course experience, student attrition and progress. There is no provision for investigating the wider social benefits of education, even though the government believes that one of the significant drivers for maintaining higher education in regional areas is the contribution that education makes to social aspects of regional development (DEST, 2007). In this context three sources are quoted: Cabalu, Kenyon & Koshy (2000); Garlick (2000); and Phillips Curran Pty Ltd (2001), all of which appear to deal mainly with the economic impact of participation in tertiary education. A further reference, the Atlas of higher education (DEST, 2001), describes benefits that it says tertiary institutions bring to regional communities, assuming contributions to cultural activities, quality of life, health and well-being. It does not investigate the wider social benefits of time spent in education.

Materials and Methods

Apart from a body of work from the UK, a major study in New Zealand and some studies based in the USA, quantitative research on the wider social benefits of higher education is difficult to find. Most of the quantitative work has come from the University of London's Wider Benefits of Learning Research Centre. The lack of quantitative research is probably due to lack of suitable data and because 'the methodological challenges to establishing causality are significant' (OECD, 2006b, p. 157). Bynner and colleagues maintained that use of 'sophisticated techniques of analysis that control for variables that might otherwise be confounded with higher education in producing its apparent effects' is essential if researchers are to isolate the effect of higher education itself (2003, p. 55). Recent methodological improvements rely on three major types of data sources, all of which are rare. One is naturally occurring experiments, such as changes in school leaving age or different leaving ages in different states (Temple, 2000).A variation on this is the comparison between countries. Preston and Green (2003) examine the cross-national comparative literature for benefits of learning at a societal level, looking for differences and similarities between countries and systems. They note that their work needs to be complemented by longitudinal, micro-social studies.

Twin and sibling studies provide a second source of data, allowing researchers to control for family background and, in the case of identical twins, innate ability (Johnston, 2004;Temple, 2000). Such studies are useful in providing information on the productivity effect of education.

The main source for examining the wider social benefits of education is longitudinal national population survey data. In the UK, two such studies exist: the National Child Development Study of 17 400 individuals born in a single week in 1958 and followed up at age 7, 11, 16, 23, 33 and 42 with 11 500 people still participating; and the 1970 British Cohort Study similarly followed up, both used extensively in examining the wider benefits of education (Bynner & Egerton, 2001; Bynner et al., 2003; Chandola et al., 2006; Feinstein et al., 2008; Feinstein & Hammond, 2004; Preston & Hammond, 2003). New Zealand's longitudinal studies, used by Johnston (2004) are the Christchurch Health and Development Study of 1265 children born in mid-1977 and the Dunedin Multidisciplinary Health and Development Study of 1037 children born between 1972 and 1973. These data sources assist in isolating the effects of time spent in higher education. For example, in the case of the UK studies, use of both studies enabled Bynner and colleagues to compare benefits of learning identified by 33-year-olds in 1991 with benefits identified by 30-year-olds in 2000, helping 'to reveal cohort effects, i.e. whether any changes in the higher education student population, such as its expansion, have increased or diminished the benefits of HE' (Bynner et al., 2003, p. 6).

In Australia some longitudinal surveys do exist with the potential to support quantitative research. The Women's Health Australia (2009) study began in 1996, examining the health and well-being of more than 40 000 women. It conducts surveys with women who were aged 18–23, 45–50 or 70–75 when the project began and is scheduled to continue until at least 2016. It could support research into the wider benefits of higher education for women.

The Tasmanian Longitudinal Health Study (2009), the world's largest and longest-running respiratory health study, began in 1968 by surveying 8500 children born in Tasmania in 1961. In 1974, 7130 children were followed up and, in 1992, when the participants were aged 31, 1500 responded. In 2004, 5729 of original participants responded. In 2007 a further survey involving siblings of the original participants was conducted. It is possible that within this study there is potential for data relevant to researchers investigating the wider benefits of education.higher education.

The Longitudinal Survey of Australian Youth provides data on movement from school into post-secondary education and work (Australian Council for Educational Research [ACER], 2009).The project has three cohorts from:Year 9 students in 1995 and 1998; and 15-year-old participants in the 2003 OECD Program for International Student Assessment. It builds on the ACER Youth in Transition project that ended in 2002, and the Australian Youth Survey 1989–1997. It provides information on educational participation, occupation and earnings.

The Household, Income and Labour Dynamics in Australia survey began in 2001, with funding for 12 years. Conducted annually by the University of Melbourne, the survey collects information on well-being, and labour market and family dynamics from more than 7000 households. Graduate Careers Australia (2008) provides some data on employment outcomes and the Australian Bureau of Statistics annual reports Education and Work (Australian Bureau of Statistics, 2006) provide useful data on labour force characteristics and participation in education.

The most promising population study for this kind of research, the Growing Up in Australia project launched in 2004 by the Australian Institute of Family Studies (2009), is relatively short term. It will examine participants' health and wellbeing focusing on factors that influence life-course outcomes. Data are being collected biennially over seven years from two cohorts.The first cohort of 5000, aged less than 12 months in 2003/04 will be followed up until they reach six to seven years of age.The second cohort, comprising 5000 children aged four years in 2003/04, will be followed until they reach 10 or 11 years.

Benefits of time spent in education: what the literature says

Feinstein and Hammond (2004), Bynner and colleagues (2003) and Vila (2005) agreed that there is much known about the economic returns on education and less about other returns. McMahon (1998) reported on research involving identical twins, which, while controlling for innate ability, noted differences in earning capacity that could relate to time spent in education. While increased earnings relates to demand for goods and services and thence to contributions to taxes, there is a lack of quantitative evidence to link time spent in education and wider social benefits.

Preston and Hammond (2003) used survey data from 2729 educators in UK tertiary institutions, tapping into their observations of the wider benefits of their students' learning. They asked questions about health, esteem, civic participation and values, which had been identified by earlier studies as wider benefits of education (Bynner & Egerton, 2001). Preston and Hammond

concluded that, while wider benefits in these categories are observed by many tertiary educators, 'practitioners do not consider that vocational subjects lead to wider benefits' (2003, p. 220). This point was also made by Feinstein and Hammond when they concluded:

> [although] early moves in the direction of the lifelong learning scenario were driven by concerns with upgrading skills and meeting qualification targets, the wider agenda of enhancing quality of life both personally and in the community suggests the need for a broader set of learning options. These need to build on the best traditions of non-vocational adult education emphasising accessibility and learner-centeredness. (2004, p. 218)

> These researchers suggested that time spent in education may not be a predictor of wider social benefits but that time spent in particular types of education may be crucial to societal benefits. Preston and Green (2003) in their cross-national study concluded that policies that aim to reduce inequalities and increase social mixing have the greatest potential for societal level benefits.

Social capital

According to Johnston:

> Social capital refers to the stock of active connections between people, as constituted by participation in, and knowledge of, civic affairs; trust in other people; and reciprocal help and support in the community. (2004, p. 21)

Population studies in the UK and USA link length of time spent in education with membership of organisations (Brehm & Rahn, 1997; Bynner et al., 2003), which in turn builds connections between people—one of the major elements of social capital. But Preston and Green (2003), in their cross-country comparisons, failed to find correlation at the macro level between education and civic participation.They felt that allocation of causality between the two was misplaced, suggesting that the effects of time spent in education on civic participation are indirect and conditional on contextual factors like history and culture.They pointed out that what holds at the micro-social level of wider benefits doesn't necessarily hold true at the societal level.Their work indicated, for example, that racial tolerance can be related to history, immigration policy, political climate or perceived interference in individuals' lives rather than, or as well as, with education.

Feinstein and Hammond (2004) drew on the UK longitudinal studies to quantify the effects of time in education and the wider social benefits to health and social capital. In the case of societal benefits, they believed that adult education played a role in social capital and interest in civic activity, which served the democratic goals of active citizenship.They did not see this as a causal relationship but as one of cyclical feedback between learning and development.

Brehm and Rahn (1997) found that time spent in education was related to feeling that others could be trusted, another attribute of social capital. On the other hand, Preston and Hammond (2003), reporting the views of tertiary educators, concluded that trust was not gained

through higher education. Nonetheless, Preston and Green (2003) consider trust to be an important property of social capital as well as being important to a healthy society. Because of its importance, trust has been measured for several years across countries and although there is 'no significant correlation cross-nationally between levels of education and levels of trust . . . there is a strong correlation between distribution of educational outcomes and trust' (Preston & Green, 2003, p. 22).They concluded that there are clear relationships between educational inequalities, income inequalities and trust, where the greater the inequality the less trust citizens have for institutions and other people.

Preston and Hammond (2003) reported that higher education influences relations with others through encouraging tolerance and expanded social networks: both elements of social capital (Putnam, 2000). Bynner and colleagues (2003) and Vila (2005) found that voluntary and charitable work was greatest among people holding a degree or higher credential. The Australian Universities Community Engagement Alliance position paper (2006) states that community engagement in the life of the university yields direct commercial benefits to private sector organisations as well as improved health in the community, less dependence on welfare and an increase in volunteering.

Citizenship and values

While social capital accrues to the individual, a spin-off societal benefit of social capital is said to be social cohesion. Bynner and colleagues believed that 'Graduates not only contribute to the economy but to the cohesiveness of society and demonstrate the attributes of active citizenship' (2003, p. 44).Their research suggested that time in education is related to being active in the community; racial tolerance; reduced willingness to blindly accept authority; and less political cynicism (also Bynner & Egerton, 2001). They suggested that a degree is a 'powerful antidote to political cynicism' (Bynner et al., 2003, p. 47); graduates have more faith in the political process (Bynner & Egerton, 2001).They concluded that at the very least graduates cost the community less and are likely to contribute to social cohesion.

Vila (2005) found that reduced political cynicism was linked to political participation and increased voting (in countries with optional voting). Racial tolerance in particular was seen by Vila (2005) and Bynner and colleagues (2003) as an important indicator of social cohesion. But Preston and Green (2003), in their cross-national comparative study, cautioned that racism and intolerance have thrived in educated societies. They reported that intolerance of immigrants had risen recently across EU countries despite rising levels of education.They suggest that more powerful contextual effects may be at play rather than 'any direct effect of average education levels on aggregate levels of tolerance' (Preston & Green, 2003, p. 17). One suggested contribution is the provision of courses that 'stress individuals' critical capacities [which] seem to have a greater effect [on acquisition of tolerance] than other courses' (Preston & Green, 2003, p. 17). Feinstein and colleagues (2008), in summarizing the literature, noted that there is no established relationship between increased individual tolerance and reduced racism at a societal level.

Preston and Green (2003) also stated that, although there is strong evidence of a relationship between education and participation in community at an individual level, this is weaker at a societal level. Educated societies do not always possess an active citizenry. In fact, they noted, in some countries where levels of education have been rising, voting has been falling.

Research conducted by Bynner and colleagues (2003), based on longitudinal data from the UK National Child Development Study, indicated that although people were becoming more authoritarian between 1991 and 2000, those with higher education were generally moving in the opposite direction and those with degrees were less likely to accept unqualified support for authority, linking it to the feeling that an individual can make a difference. For these reasons, Bynner and colleagues concluded that, if the government policy agenda was to enhance social cohesion, then investment in higher education would contribute towards this goal. In summarising the research, Feinstein and colleagues (2008) concluded that equitable distribution of educational opportunities might have a significant effect on social cohesion. The Australian Universities Community Engagement Alliance position paper (2006,p.1) includes comment on the engagement of students in learning.Drawing, presumably, on the work of overseas researchers in the absence of local studies, the paper states that active and knowledgeable citizens can drive social cohesion and societal change, leading to improved quality of life for all.

Health and wellbeing

Hammond (2002) in reviewing the mostly qualitative literature on the connections between education and health concluded that education indirectly plays a part in health primarily through individual empowerment and socialization that encourages social cohesion. Feinstein and Hammond (2004) pointed out that qualitative studies suggest there are long-term benefits to health and self-efficacy through, for example, more fulfilling use of leisure time.

Vila (2005) noted that most education and health studies deal with benefits to the individual and that part of the benefit of higher education to an individual's health is likely to be reflected in higher income and will be captured by an analysis of economic returns to graduates. An OECD report (2006b), summarizing recent research on education and health, stated that in the USA economic factors are estimated to be responsible for about half of the impact of education on health. These factors are said to be things like avoidance of stress linked to financial hardship and access to better health care. The report also found that people with higher levels of education are likely to have less hazardous and therefore less stressful jobs.

Vila (2005) also linked health indirectly to education through work, suggesting that some non-monetary returns on education investment, such as well-being, can be captured through analysis of job satisfaction. He concluded that better education across all social groups is linked to economic growth and social development 'and consequently, to the promotion of well-being for the whole population' (Vila, 2005, p. 8). Temple noted the difficulties inherent in measuring well-being in a meaningful way and observed that 'economists are only just starting to investigate well-being and its determinants' (2000, p. 5).

Quantitative work in New Zealand, based on population studies, also concluded that better educated citizens are more likely to be healthy (Johnston, 2004). Johnston (2004) reviewed the literature on wider benefits of education and suggested a relationship between years spent in education and smoking even after controlling for other socio-demographic factors such as gender and disadvantage. He also noted that, according to studies using data from the Dunedin Multidisciplinary Health and Development study, anxiety declines with higher education attainment.

But he also noted that governments are interested in the benefits and costs of education to society as a whole, not the benefits that accrue to individuals; thus it is important to be able to differentiate between causation and coincidence.

> Johnston also reported on studies in the USA, including a six-year study of 10 000 adults aged between 51 and 61 years which found that years of education was significantly associated with chronic diseases after controlling for age, gender, race and wealth. He also reported on a study using state compulsory schooling laws and census data that found a statistically significant association between years of education and mortality independent of socio-economic status.

Johnston summarized that the evidence from a range of studies from several countries using different methodologies all indicate that 'better educated people experience better health' (2004, p. 20) and that studies seem to show that better educated people have a greater reported level of well-being (see also Hammond's review of the literature, 2003). Bynner and Egerton's (2001) study found that graduates were more likely to see themselves as in excellent health and less likely to show depression or become victims of accidents or assaults. The 2006 OECD report summarises the findings of research into the health benefits of higher education to individuals as healthier diet, less smoking and less alcohol consumption, more exercise, greater use of health services and greater use of seat belts while driving (OECD, 2006b). But education that benefits the health of an individual may not always translate into wider social benefits. Health benefits attributable to health care access through economic status, for example, may signal societal divisions that could leave other citizens worse off. Education that underpins such economic-related health benefits may be failing to challenge socio-economic inequalities that are responsible for poor health of some communities (Hammond, 2003). Education that targets marginalised groups is more likely to contribute to the health of society through development of social cohesion and resilience. Education that promotes critical awareness and social inclusion can lead to 'the challenging of social and economic inequalities and the generation of a more socially cohesive and health-inducing society' (Hammond, 2003, p. 74)

Crime

Johnston (2004) noted that anti-social behaviour is lowest among those who attend university. Johnston also reported studies of US census data from 1960, 1970 and 1980 that indicated that years of education are negatively associated with imprisonment. He noted that the

Christchurch and Dunedin studies suggest that time spent in education, not qualifications, is negatively associated with crime.

Feinstein's study (2002) included vocational and academic education. He concluded that the direct effect of learning is on income. Through income, there is an indirect effect on crime and the possibility of a further indirect effect through parenting because crime tends to run in families. He argued that a higher income provides less incentive for crime and full-time education and work provide less opportunity. He also reported that there was some research to suggest that higher education increases risk aversion and patience—people value their future earning potential—which reduces the propensity to commit crime. Feinstein and colleagues in their summary of research findings suggest that a '16 percentage point rise in those educated to degree level could save more than £1 billion annually in reduced crime costs' (2008, p. 11). Vila (2005) added that a longer time spent in education appeared to be linked to reduction in violent crime. Reduction in crime through more time spent in education would appear to benefit society as a whole but once again it seems that the benefit is largely attributable to increased income. In their cross-national study, Preston and Green (2003) concluded that the links between education systems and labour markets play an important role in criminality at the national level. They found there was 'a clear relationship between unemployment, social-disorganisation, inequality and crime' (Preston & Green, 2003, p. v)

Parenting

Bynner and colleagues (2003) suggested that participation in higher education is linked to parents reading more to children and children owning more books. Parents with higher education, they suggested, promote a stronger educational environment than parents with lower levels of education (also Bynner & Egerton, 2001). Bynner and colleagues (2003) suggested that there is probably some 'intergenerational transfer' of what they refer to as 'human capital'.

Johnston (2004), in his review of the literature for the New Zealand Treasury, concluded that most of the studies of the wider benefits of education find some link between length of time in education by either parent and their children's educational attainment.

Labour market outcomes

Bynner and colleagues (2003) reported that, even considering the growth in graduate numbers, people with higher education are less likely to be unemployed. One of the reasons for this, they suggested, is familiarity with information technology. Although employability is seen as a good that accumulates to an individual, they suggested that it does reduce the need for income subsidies, as well as increasing the tax base. In Australia 83 per cent of people with a qualification other than a school qualification were employed compared to 63 per cent of those with only a school qualification (Australian Bureau of Statistics, 2006).

Another benefit of higher education, and hence better employment prospects, noted by Bynner and colleagues (2003) is social mobility.They pointed out that, even in today's England with general movement upwards in social class, the advantage of higher education was substantial.

They argued that higher education facilitates the development of social skills, supporting confidence and leading to advantage in the labour market.

Bynner and colleagues (2003) also saw this feedback mechanism operating in the economic returns of education (also OECD, 2006b; 2007b). They suggested that not only do graduates fill the upper levels of occupations but that their presence in the job market probably contributes towards the creation of jobs for which they are skilled. In this way the labour market benefits from the skills that graduates bring. Bynner and colleagues (2003) suggested that the returns of education to the individual—in this case in the job market—need to be seen in the broader context of society

Conclusion

Wider social benefits

The wider social benefits of time spent in education are those benefits that accrue to society rather than to individuals. The literature suggests that benefits such as better health, better job prospects and higher social status are likely to accrue to individuals but have spin-off societal benefits including less need for national spending on health and welfare and a larger tax base to provide national social benefits. Although benefits to individuals, families, community and nation are interlinked (Feinstein et al., 2008), translating the perceived benefits that accrue to individuals and communities into benefits at the societal level is not straightforward. It cannot be taken for granted that social capital, for example, will translate into social cohesion. A society may include many groups that are internally socially cohesive but exclusive and intolerant of other groups. The attributes that make up social capital may also differ with cultural context. For example, racial intolerance may be a factor in a group's social capital, depending on history and context.

What makes a difference?

Time spent in education per se may not provide wider social benefits. Research suggests that wider social benefits such as quality of life, health, trust and civic participation may not arise from participation in, for example, vocational courses and training programs (Green, Preston & Sabates, 2003; Hammond, 2003; Preston & Hammond, 2003) or in education with a narrow focus on academic achievement (Feinstein et al., 2008). They are more likely to arise through participation in courses that develop critical capacities and increase social mixing (Preston & Green, 2003).Thus increasing social cohesion at a societal level seems to require policies leading to equitable access to education that increases social equality through challenging social and economic inequalities.

Importance of national studies

Differences in wider social benefits of education between countries indicate that caution must be exercised when attributing such benefits to time spent in education (Preston & Green, 2003). Cross-national comparative studies indicate that other factors, such as historical and cultural

differences, are at play and there may be no direct causal link between time spent in education and social cohesion at the macro level.

If governments are interested in the benefits and costs of education to society as a whole rather than, or as well as, the benefits that accrue to individuals, it is important to be able to differentiate between causation and coincidence. The Growing Up in Australia study would seem to provide a strategic opportunity for Australian research to be undertaken.

Further research

Uncovering the benefits and the mechanisms at work is important particularly in light of a funding shift from the institution to the individual student, from public funding of what could be seen as a common good to private funding for what might be construed as a private good. In light of the strong likelihood that the wider social benefits are related to social cohesion at the macro level, which in turn is likely to be attributable to equitable educational outcomes across all groups of society, this work is important to society.

Feinstein and Hammond (2004) reported that there was little in the way of quantitative studies that examine the wider benefits of time spent in education. There are Australian specific longitudinal studies that can contribute the necessary data for such research. Among them is the Growing Up in Australia project. As noted by Nicholson and Sanson (2003), such a study cannot meet all research needs but parallel studies could add value. Their article noted recent advances in analytical techniques and the need to examine multiple levels of influence such as environmental factors of social and economic policy; the social environment of community, school and family; and individual characteristics. Such research needs a large sample size to disentangle multilevel influences. When other Western nations are investing in longitudinal studies (Nicholson et al., 2002), the Growing Up in Australia study would provide a strategic opportunity for similar Australian research to be undertaken.

The potential for major differences between societies indicates the need for Australian studies to draw conclusions about the wider social benefits for the Australian population. It will take a national interest and continued funding for such studies to produce the necessary large-scale longitudinal population data and analysis but it is important work because it can provide the foundation for policy decisions that may have far-reaching societal consequences.

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