



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **Interventions early in school as a means to improve higher education outcomes for disadvantaged (particularly low SES) students**

## **Component A: A review of the Australian and international literature**

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COMMISSIONED BY

THE DEPARTMENT OF EDUCATION, EMPLOYMENT  
AND WORKPLACE RELATIONS

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## About this report

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## Executive summary

This review identifies early interventions in schooling aimed at increasing students' participation in higher education after completing school. The review constitutes Component A of the DEEWR funded research project *Interventions early in school as a means to improve higher education outcomes for disadvantaged (particularly low SES) students*.

For the purposes of this review, 'early' refers to the school years up to Years 11 and 12; that is, before the last two years of post-compulsory or senior secondary schooling. 'Interventions' refers to organised and strategic programs 'purposely designed to manoeuvre a population in particular directions' (Alloway et al. 2004: 218). While early interventions in Australia are of particular interest, these are complemented by information about and analysis of interventions in other OECD nations (including the United States, Canada, the United Kingdom and New Zealand).

The review is prefaced by a brief overview of the policy environment informing access and participation in Australian higher education, from immediately following the Second World War until late 2007. It traces the shifts over time in thinking about equity in this context, including shifts in what constitutes Australian higher education. Emphasis is given to issues related to students from low SES backgrounds.

The review identifies four major barriers to student participation in higher education: (i) the restrictions of distance and time; (ii) the cost of higher education; (iii) non-completion of schooling and low academic achievement; and (iv) student expectations, motivations and aspirations. These barriers are directly correlated in the review with Anderson and Vervoorn's (1983) four conditions of entry to university: availability, accessibility, achievement and aspiration.

The review identifies the approaches that are likely to make a positive difference for disadvantaged students, particularly for low SES background students. Specifically, it concludes that interventions which foster higher participation are characteristically: (i) collaborative; (ii) early, long-term and sustained; (iii) people-rich; (iv) cohort-based; (v) communicative and informative; (vi) experiential (familiarising students with university sites and how they operate); (vii) cognisant of difference; (viii) academically challenging; and (ix) financially supportive.

Analysis of these characteristics and of the literature gives rise to three main questions for future consideration: (i) In what ways might higher education institutions and schools collaborate on sustainable equity initiatives? (ii) How might a program of longitudinal research studies be designed to provide evidence of impact of various strategies and initiatives? (iii) How might the best practices of specific interventions be implemented in ongoing infrastructure and policy?

## Introduction

This review identifies early interventions in schooling aimed at increasing students' participation in higher education after completing school. 'Early' refers to the school years up to Years 11 and 12; that is, before the last two years of post-compulsory or senior secondary schooling. Until recently, most Australian interventions aimed at increasing student participation in university have focused on the senior secondary school. 'Interventions' refers to organised and strategic programs 'purposely designed to manoeuvre a population in particular directions' (Alloway et al. 2004: 218).

In this review, early interventions designed to improve school outcomes are used as proxies for early interventions specifically focused on university entry, given that academic achievement is a key predictor of participation in higher education. Interest in school interventions is informed by persistent data indicating that particular groups of people tend to be under-represented in university student populations and that these 'imbalances in higher education participation reflect endemic educational disadvantage that begins in the earliest years of schooling' (CSHE 2008: 3).

While early interventions in Australia are of particular interest, these are complemented with information about and analysis of interventions in other OECD nations (including the United States, Canada, the United Kingdom and New Zealand). This is because the literature suggests that student equity is also a concern overseas, with students from the lowest SES groups particularly under-represented. Given the similarities in these issues across national borders, international literature, data and policy responses are included throughout this review.

## Current imbalances in higher education participation

In 1990, the Australian Government policy statement, *A fair chance for all* (Department of Employment, Education and Training 1990), identified six groups that were under-represented in Australian higher education: women in non-traditional areas, people from non-English speaking backgrounds, people with disability, Indigenous peoples, those living in regional and remote areas of Australia, and people from low socioeconomic backgrounds. While there is evidence of improvement in the access and participation of some of these groups, the latest review of these issues commissioned by Universities Australia (CSHE 2008) indicates that three groups in particular continue to be significantly under-represented: people from low socioeconomic status backgrounds; people from regional and remote areas; and Indigenous people.

### *People from low socioeconomic status backgrounds*

Despite a significant increase in student numbers in recent years, people from low socioeconomic (SES) backgrounds continue to be under-represented in higher education. While 25 per cent of the Australian population can be defined as low SES (according to the ABS Index of Education and Occupation in the Socio-economic Indexes for Areas (SEIFA) suite), this group continues to represent just under 15 per cent of Australian university students. This under-representation is more acute in courses with high demand and in prestigious universities. For example, the proportion of low SES students in the Group of Eight universities is currently around 11 per cent. Similarly, people from low SES backgrounds are particularly under-represented in prestigious and competitive courses such as 'medicine, law and architecture but are less under-represented in teacher education and agriculture' (CSHE 2008: 25).

The distribution of students from low SES backgrounds across courses is also imbalanced. In the period between 1992 and 2002, these students comprised the largest group at the pre-degree level but only 8.6 per cent of undergraduate students and an even smaller proportion of research (masters and doctoral) degree students.

In short, at various levels of student engagement with higher education, students from low SES backgrounds are disadvantaged in relation to higher SES students. In particular, recent research by the Centre for the Study of Higher Education (CSHE) (2008) notes that:

- In 2006, Year 12 completion rates were significantly lower for low SES students (at 59 per cent, as opposed to 78 per cent for high SES students).
- Low SES students are more likely to aspire to and adopt a non-higher education pathway after leaving secondary schooling, including vocational education and training (VET) or entry into the labour market.
- Poor academic achievement increases the likelihood of early withdrawal from secondary school and thus non-entry into higher education.

#### *People from regional and remote areas*

A second and often overlapping group under-represented in higher education is from regional and remote areas. That these students are less likely to complete Year 12, and thus go on to higher education, than their metropolitan counterparts is indicative of the barriers to higher education experienced by non-metropolitan students.

People from regional and remote areas are also more likely to enter into non-higher education pathways after secondary school completion. They are more likely to view VET as a more appropriate pathway, and have more positive attitudes towards VET than students from cities (Alloway et al. 2004: viii). The alternative aspirations of non-metropolitan students are linked to a lack of encouraging factors that make higher education appear attractive, attainable and appropriate.

#### *Indigenous peoples*

Indigenous peoples are significantly under-represented in Australian universities, with similar although perhaps more acute circumstances to others from regional and remote areas, and from low SES backgrounds. While Indigenous peoples constitute about 2.4 per cent of the Australian population (according to the 2006 census), they comprise only 1.25 per cent of commencing domestic students. This participation rate has remained more or less constant since 2001. Providing some explanation, a disproportionately large number of Indigenous secondary students do not complete Year 12. In particular, Indigenous participation in secondary education drops markedly between Years 10 and 11 with a corresponding increase in VET participation. The difference in secondary school retention rates between Indigenous and non-Indigenous students is significant, and this gap widens during the latter years of high school.

Issues worth noting in the CSHE (2008) research include the following:

- While 30 per cent of Indigenous students obtain a high school certificate, only one-sixth of these students continue on into higher education. This contrasts with the national average of approximately 50 per cent of completing Year 12 students continuing on into higher education.
- Indigenous students obtain lower levels of academic achievement and are less informed about higher education opportunities than non-Indigenous students.
- Indigenous people are more likely to choose non-higher education pathways in post secondary schooling.

Lack of confidence in their own academic ability is also said to be a major impediment to Indigenous students' education success (Craven et al. 2005; Ferrari 2006). According to the Centre for the Study of Higher Education (2008: 48):

As a result of the educational disadvantage experienced, many Indigenous students have 'low academic self-concepts'. Consequently, Indigenous students often lack the adaptive and striving behaviour associated with higher academic self-concepts that enables individuals to try harder when confronted with the possibility of not achieving their goals. Anecdotal evidence that teachers have low expectations of academic potential and educational prospects of Indigenous students, perhaps unconsciously, compounds the low aspirations and decision not to pursue higher education.

Such comments suggest that the most formidable barrier to overcome in the process of increasing student equity may be located outside the influence of students themselves.

#### *The international experience*

As discussed in more detail later in this review, the literature demonstrates similar trends in accessing higher education internationally (see, for example, Gorard et al. 2007). In most OECD countries, 'social class is a reliable indicator of the likelihood that individuals will participate in higher education at some stage of their lives' (CSHE 2008: 71). In the United Kingdom, for example, young people from the highest social groupings are five to six times more likely to attend university than those from the most disadvantaged backgrounds (Higher Education Funding Council for England 2006). In 2005–06, low SES students in the United Kingdom represented 29.1 per cent of higher education students while comprising approximately 50 per cent of the total population. Prestigious UK universities enrolled an even lower proportion of low SES students, with the Oxford student body consisting of 11.4 per cent low SES students and St Andrew's consisting of 15.2 per cent.

The experience of Indigenous Canadians is somewhat similar to that of Indigenous Australians. Non-Indigenous Canadians are much more likely to have completed or be in higher education by the age of 20 (60 per cent as opposed to 28 per cent). Overall, only 65 per cent of young Indigenous Canadians graduate from high school, compared with 80 per cent of non-Indigenous youth. The rate of non-completion of secondary school is particularly high among First Nations Indigenous Canadians living on reservations. This equity gap is thought to be widening and is a primary cause of the low representation of First Nations Peoples in higher education.



Inequitable access to the more prestigious universities, a problem identified in Australia and in the United Kingdom, is also evident in the United States. Not only is there a 'paucity of students from low SES backgrounds at the most prestigious universities' (CSHE 2008: 78), these students are more likely to enrol in community colleges that often only offer shorter (two-year degrees) and do not award doctorates. In other words, 'the most prestigious institutions [in the United States] are also the least equitable, and ... the most equitable institutions, the community colleges, are the least prestigious' (CSHE 2008: 79). Other barriers for low SES students entering higher education in the United States, which replicate those in Australia, include: lower aspirations towards higher education; lower levels of high school retention; and diminished academic success. All of these lessen the chances of low SES students entering higher education.

## **Barriers to participation in higher education**

Particular attention in this review is given to early interventions directed at students from low socioeconomic backgrounds, because these students are significantly and persistently under-represented in Australian universities and have been since the introduction of *A fair chance for all* (Department of Employment, Education and Training 1990). While university enrolments in Australia have more than doubled in the last two decades, students from low SES backgrounds are three times less likely to enter university than those from high SES backgrounds.

The barriers that stand in the way of these students participating in higher education can vary from context to context. However, there are considerable similarities between barriers to university entry experienced in Australia and those evident in other OECD nations. The literature identifies four main obstacles that limit the involvement of disadvantaged groups. These barriers are persistent and endemic, in that they characterise the experiences of almost all of these students before they reach school leaving age. They are barriers to the *availability* and *accessibility* of higher education and to the *achievement* and *aspirations* of students.

### *The restrictions of distance and time*

The distance to travel to a university has often been regarded by students as a barrier to their participation. While geographical distance is often a significant deterrent, socio-cultural differences, family expectations and peer pressure can also 'distance' students from aspiring to higher education. Employment, family demands, and social and peer pressures are also barriers that compete for a potential student's available time to attend classes and for private study (see Gorard et al. 2007: 59–61).

### *The cost of higher education*

The actual and perceived costs of attending higher education are also considered by some as barriers to participation in higher education. These include tuition fees, costs of living while studying, stationery and textbooks, the risks associated with establishing long-term debt to finance education, and loss of income. Governments have attempted to address these barriers by addressing the costs; for example, through the availability of loans, scholarships and other financial incentives. While some suggest that the introduction of and increases to tuition fees have not deterred the enrolment of low SES students (Cardak & Ryan 2006; Andrews 1999), Gorard et al. (2007: 57–59) argue that

increased availability of financial aid has not significantly increased the participation of low SES and other disadvantaged groups either.

#### *Non-completion of schooling and low academic achievement*

An obvious barrier to a student's entry into higher education is non-completion of secondary school and general poor academic achievement. As noted above, the literature identifies that secondary education non-completion rates are much higher for low SES, Indigenous, and regional and remote student groups than they are for others. The evidence points to a strong negative correlation between low SES and secondary school completion and thus entry to higher education. Gaps in school achievement exist well before a student enters their final year of high school. Hence, there would appear to be some justification for interventions during the earlier years of secondary schooling to assist students from all backgrounds not only to complete Year 12 but to do so sufficiently well to gain access to higher education.

Some argue that the circumstances of Indigenous students warrant separate treatment due to the unique social and cultural conditions they face (Smith 2003). Even so, the issues concerning non-completion of low SES students identified above are also those experienced by Indigenous students, albeit more acutely. In particular, in the last two years of secondary school the participation of Indigenous students falls away dramatically. When combined with poor rates of academic achievement, these trends suggest a greater need for interventions to increase participation in higher education by Indigenous students.

#### *Expectations, motivations, aspirations*

Even if all the barriers of time, lack of proximity and academic achievement are removed, entry to higher education can be restricted due to preconceived notions about further study. Perceptions regarding the worth of higher education, and for whom it is best suited, play a large role in students' choices to go on to further study. For example, if a potential student is from a background where higher education is not regarded as an appropriate career path, then there is greater likelihood that they will not consider higher education as a realistic option. Gorard et al. (2007: 62) write that in the United Kingdom:

Learners may be perceived as younger, better educated, and from higher income groups than they really are. To some extent this image becomes self-realising. People with these characteristics tend to be selected for learning so that social practice becomes reproductive and education is seen as middle class and 'not for the likes of us'.

The Centre for the Study of Higher Education (2008) expands on this issue further, illustrating how such attitudes and aspirations work in Australia to shape patterns of access to higher education. Potential university students from regional and remote, low SES and Indigenous groups tend to have lower expectations of and negative views towards higher education and are thus less likely to participate in it. A corollary of this is that students from disadvantaged backgrounds tend to choose pathways other than higher education. This may include other post-secondary education (such as TAFE or other VET) or employment. In terms of designing interventions, what is of interest here is how aspirations are produced.

## Framing the review

The complex nature of barriers to the participation in higher education of low SES students is of particular interest in this review. Access to fewer financial resources is not the only constraint on university participation for this cohort (Anderson et al. 1980; Cardak & Ryan 2006; CSHE 2008). Low SES students are also distinguishable as a group by their lower academic achievement, which is clearly evident by Year 3. Test results in Years 6 and 9 indicate that this difference in measurable achievement is exacerbated as students move through school. In other words, the ‘under-representation [in university] of people from low SES backgrounds is the result of patterns of social and educational disadvantage that are experienced well before people reach the point of considering whether or not university is possible or relevant for them’ (CSHE 2008: 7).

There is a clear need to consider the complexity of under-representation by students from low SES backgrounds and address the issues earlier in schooling rather than later.

This review of early interventions is framed by Anderson’s conception (Anderson et al. 1980; Anderson & Vervoorn 1983) of the ‘four conditions [that] must be met for a student to enter higher education:

- an adequate number of places must be *available*
- the institution must be *accessible* to the student, both geographically and financially
- the student must have the necessary scholastic attainment (or academic *achievement*) to qualify for entry
- the student must want to enter [*aspiration*]' (Anderson & Vervoorn 1983: 3; emphasis added).

While Anderson’s conception of the issues has been in circulation for some time, it continues to dominate research, policy and practice in the field. Often framed negatively as barriers to higher education participation, as outlined above, the conditions governing entry to university have remained constant for at least the last thirty years and probably longer. At the same time, our review of early school interventions brings new understandings to Anderson’s university entry conditions, which are expressed in the review’s characterisation of these interventions.

This ‘reworking’ of entry conditions, albeit constrained, is necessary for at least two reasons. First, while the Anderson model is cognisant of ‘the education system as a whole ... [operating] as a series of filters’ (Anderson & Vervoorn 1983: 2), its conditions of entry to higher education were originally conceived with the post-compulsory school years only in mind. Secondly, the four conditions for entry are closely interrelated. As Anderson and Vervoorn assert, all ‘four conditions must be met for a student to enter higher education’ (1983: 3). For example, simply increasing the number of places, improving affordability through the removal of fees or the addition of scholarships, or even increasing attainment with the help of adjustments to university entrance scores, will not necessarily lead to increases in participation if aspirations are not addressed. Similarly, there seems little point in increasing aspirations if there are no places available, the places are not physically accessible or affordable, or the attainment levels required are too high.

The main body of this review is organised according to Anderson's four conditions of entry. Where intervention intentions are primarily characterised by one condition more than another, the intervention is described under that heading and referenced under other conditions where appropriate. Each of the sections begins by naming and describing early interventions relevant to the condition under consideration. These are accompanied by an account of the broader issues influencing the particular condition, including contemporary socio-cultural, political and economic understandings.

Preceding this review of early interventions is a brief overview of the policy environment informing access to and participation in Australian higher education. It traces the shifts over time in thinking about equity in this context, including shifts in what constitutes Australian higher education. Emphasis is given to issues related to students from low SES backgrounds.

## **Equity policy and Australian higher education**

The Centre for the Study of Higher Education notes that 'internationally, Australia has been a leader in establishing an equity policy framework' (CSHE 2008: 13). The reference is primarily to the Australian Government's 1990 policy statement *A fair chance for all*, and to the take-up of its conception of student equity in higher education by governments overseas. From an Australian government perspective, the current commitment to equity is informed by the belief that university student populations should reflect the composition of the wider national population.

In 1990, six population groups were identified as under-represented in Australian universities. Since then, at least three of these groups—regional and remote (originally rural and isolated) students, Indigenous students, and students from low SES backgrounds—have shown little or no improvement in their representation in higher education. Other nations vary in terms of which groups are under-represented in their higher education systems. They also vary in the success they have had in redressing these imbalances (CSHE 2008).

Nevertheless, shared among most nations is the low participation of students from low socioeconomic backgrounds: 'internationally, social class is a reliable predictor of the likelihood that individuals will participate in higher education at some stage in their lives'. In developed nations, 'people from low SES backgrounds who do reach higher education are less likely to find places in the most prestigious institutions and fields of study' (CSHE 2008: 71). These international comparisons are constrained by the differences and difficulties relating to how low SES is measured and how higher education is conceived (Gorard 2008; CSHE 2008).

The difficulties in making equity comparisons across nations are also evident across time. Equity and higher education have not always been defined in Australia as they are now. There seems to have been little regard for the social background of Australian university students before the Second World War (Anderson & Vervoorn 1983). After the war, as Australia entered a new period of nation building, access to higher education emerged as an issue when the Australian government sought to enable suitable returning servicemen to gain entry to it. At the same time, there was a massive expansion of secondary schooling accompanying the 'baby boom', informed by a university-led competitive academic curriculum (Gale 1994).

By 1964, Australia recognised the need to increase the qualifications profile of its population and public expectations of the right to access education at all levels became prevalent: 'in Australia it is widely accepted that higher education should be available to all citizens according to their inclination and capacity' (Martin 1964: 1). In these circumstances, equity meant that there should be places available to accommodate these citizens.

The 1964 Martin Report paved the way for the creation of these extra places, albeit through establishing a binary system of higher education (universities and colleges of advanced education (CAEs)). As a result, from 1965 to 1973 student enrolment in higher education more than tripled to 273,000 (100,000 in CAEs) (Marginson 1997), including enrolments in the new interdisciplinary universities of Murdoch, Flinders, La Trobe, Macquarie and Griffith, which in part were established to accommodate an expanded 'baby boomer' population. Higher education had become differently conceived, with the introduction of a stratified system and a potential diluting of equity in accessing university (the more elite form of higher education) and particular universities (the more elite ones established before 1964).

In 1972, the incoming Whitlam government was of the view that 'education is the key to equality of opportunity' (Whitlam policy speech, in Marginson 1997: 17). At that time, two hurdles were thought to stand in the way of this opportunity for Australians wanting to access higher education:

- tuition fees (affordability)
- limited availability of places.

The abolition of fees and the introduction of a means-tested allowance (the Tertiary Education Assistance Allowance) in 1974 were directed at the first hurdle, particularly for people from low SES backgrounds. The second, availability of places, was addressed when the federal government assumed full financial responsibility for Australia's higher education sector and increased its funding by almost 176 per cent in its first two budgets.

At the same time, on the recommendation of the 1973 Karmel Report, the Australian government introduced the Disadvantaged Schools Program (outlined below) to improve the standard of schooling received by students from low SES backgrounds and increase these students' retention rates to Year 12. (In 1978, retention rates in government schools were 30 per cent while in non-Catholic independent schools they were 86 per cent.) Among other things, schooling was now understood as a significant factor in the production of inequities in higher education.

Towards the end of the Whitlam government, the prevailing view of political economics began to shift:

- *from Keynesianism*: responding to public demand with increased supply funded from future income
- *to economic rationalism*: responding to public demand with a more efficient supply funded from current income and/or redirecting demand into other, less costly, areas.

This shift was to have a profound effect on equity in higher education, in particular on how equity and higher education were conceived.

From the mid 1970s to the early 1980s, the growth in the education system required to meet the needs of the 'baby boom' had slowed, unemployment was growing and government policy had begun to focus more on how schools could better serve industry rather than how to improve equality of opportunity. Retention to Year 12 fell between 1975 and 1980, and school leaver demand for higher education decreased. The Fraser government moved to reduce demand for higher education further by increasing the provision of technical and further education (TAFE), where costs per student were about one-third of those in higher education. During these years, federal funding of TAFE increased by 80 per cent and enrolments increased by a third (Marginson 1997).

While data from the period is not available, one could surmise that low SES students were over-represented in TAFE, as is the case in the Australian vocational education and training sector today (Foley 2007). Conversely, a 1980 study revealed that, despite the Whitlam government's abolition of higher education fees, 'the social composition of students in higher education appears to have changed little over time ... the higher status social groups ... are consistently over represented' (Anderson et al. 1980: 197).

Whereas the creation of a binary system of higher education had the effect of *diluting* equity, the redirection of demand for higher education into TAFE had the effect of *displacing* equity. Indeed, an Australian government inquiry at the time (Williams 1979) expressed the view that the structural causes of under-representation of particular groups in higher education were more appropriately dealt with outside the sector, before students were admitted.

During the mid to late 1980s, retention to Year 12 and unmet demand for university entry began to build again and 'the need for a better educated and more highly skilled population was clearly recognised and widely accepted' (Dawkins 1988: 4). A new Australian government chose to respond with a more efficient method of supplying university places. Through a series of institutional mergers and amalgamations it upgraded CAEs to university status and created a unified national system of around 37 universities with a significant net gain in university places.

In order to defray the cost of funding these increased places, the government also introduced a user-pays system of tuition fees (the Higher Education Contribution Scheme, or HECS) collected through the taxation system and able to be deferred until a student earned a threshold income level. The introduction of HECS also served to remove the 'middle-class welfare' associated with free university tuition—given that the wealthy were more likely to attend university than the poor—without being a deterrent to entry for the poor because of the deferred nature of the scheme.

In this reconception of higher education, equity (particularly for those from under-represented groups) was reassigned as a university responsibility:

The larger and more diverse is the pool from which we draw our skilled workforce, the greater is our capacity to take advantage of opportunities as they emerge. The current barriers to the participation of financially and other disadvantaged groups limit our capacity to develop the highest skilled workforce possible and are a source of economic inefficiency.

(Dawkins 1988: 7.) In championing equity, Dawkins' White Paper foregrounded the development of 'a statement of national equity objectives [to] form the basis for further negotiations between the

Commonwealth and institutions on the development and funding of their equity proposals' (Dawkins 1988: 55). *A fair chance for all* (Department of Employment, Education and Training 1990) established the national framework discussed above. It required universities to:

- develop strategic plans and targets to achieve equity (with separate Indigenous education strategies and targets)
- report on progress towards these as part of their annual educational profile submissions to government.

The ability of the sector to meet these requirements was enhanced by the development of a set of equity indicators that could be used by an institution to measure its performance against its own targets and those of the sector as a whole (Martin 1994). Martin also established for the first time a set of system-wide definitions of equity groups named in *A fair chance for all*. By then equity as strategy had reached a level of considerable sophistication.

Early in 1995, the Australian government asked the Higher Education Council (HEC) of the National Board of Employment, Education and Training (NBEET) to review progress in relation to Australian university equity objectives. The review found that there had been improved outcomes for some equity groups but little or no progress for students from rural, isolated or low socioeconomic backgrounds. The review also signalled a shift from focusing on particular student deficits to a new 'recognition that the academic and administrative culture of the sector contributes to the patterns of access and success of different groups in society' (NBEET/HEC 1996: 74). The review's recommendations were delivered to a new government in 1996 but they were never endorsed as policy.

These changes in thinking about equity in higher education were complemented by and related to similar moves in schooling. Between 1973 and 1996, school policy underwent substantial reform, especially in terms of social justice. Of some significance during that period was the Disadvantaged School Program, a 'poverty and education' program that provided the impetus for significant changes to:

- the way that the problem of educational inequality was understood
- post-compulsory curriculum and credentialling arrangements in many Australian states
- debates about a socially just curriculum and pedagogy more generally.

The program heralded a substantial shift in thinking, from deficit views of low SES students to an understanding that 'schooling *reproduces* the structure of inequality itself' (Connell et al. 1982: 27). During the twenty years or so of the program, the logic of local school interventions shifted from compensatory programs for low SES students to significant curriculum and pedagogical reforms; from blaming the victim to fixing up the curriculum. This shift in thinking led to a political struggle over how curriculum was designed and credentialled, especially in the post-compulsory years (Commonwealth Schools Commission 1987) and hence to a series of reviews and shifts in policy in these areas (for example, Gilding 1988, 1989; Blackburn 1985).

During this period the idea of inequality was expanded to include the education of girls, Aboriginal and Torres Strait Islander students, students with disabilities, and students from non-English-speaking backgrounds. This development led to serious debate about appropriate funding models for such a range of equity programs.

The imperative to reform the school curriculum and pedagogy was not focused only on the post-compulsory years. Curriculum reform for social justice was seen to be a matter for the entire school, giving rise to a range of policy interventions, including:

- the development of the idea of the 'core curriculum' (Curriculum Development Centre 1980)
- National Statements and Profiles
- a more general national curriculum movement.

The middle schooling movement developed in this context, with a range of changes, mainly at the local level, to school organisation, school culture and pedagogy.

The Disadvantaged School Program morphed into the Commonwealth Literacy Project in the early 1990s, partly because of the success of the 'critical literacy' movement, which had made a convincing case for the link between improving literacy and school achievement for 'disadvantaged' groups. However, equity programs of this type were disbanded in the late 1990s by the Howard government. Indigenous education policy was mainstreamed, the education of boys was put back on the agenda in reaction to gains for the education of girls, and schooling policy shifted to foregrounding the imperatives of devolution and 'choice'.

While the incoming Howard government maintained the broad equity standards for universities established in *A fair chance for all*, it did so through a neo-liberal understanding of equity and higher education. In its first budget (1996), HECS levels were increased and the income threshold for their repayment lowered; this was justified on the basis that students rather than the public were the primary beneficiaries of their higher education. Informed by this logic, Minister Vanstone also introduced discipline-related and differentiated upper limits on students' HECS obligations, determined partly on the basis of teaching costs but also on the anticipated long-term financial returns to students. For example, the low-cost law discipline attracted the highest rate of HECS along with more costly medicine and engineering disciplines, whereas the social sciences and humanities generally attracted lower HECS rates.

This increased emphasis on the user-pays principle was also central to the West Review of Higher Education (West 1998), which 'placed economic choice at the centre of decision-making' (Marginson & Considine 2000: 36). Following the West Review, Minister Nelson's *Crossroads* paper (2002) and *Backing Australia's future* (2003) moved higher education increasingly towards a demand-driven funding model, introducing the concept of fee-paying undergraduate places for domestic students who could afford to pay their way into prestigious courses. Nelson also permitted institutions to make their own judgments about how close to discipline-related HECS limits they should set their own students' contributions.

At the same time, the government placed a freeze on universities' raising students' HECS obligations in areas of national significance (teaching and nursing), fields in which low SES students have been



traditionally more heavily concentrated and in which males are now increasingly under-represented (James et al. 2004). This freeze further differentiated between discipline areas within higher education, starving areas of national significance of much-needed funds.

This marketisation of higher education was not without regulation. The differentiation of and limits on HECS is one example. Another is the restriction placed on institutions to offer full fee-paying places to domestic students only after their Commonwealth Supported Places (as HECS places became known) were filled. *Backing Australia's future* (Nelson 2003) also introduced Commonwealth Learning Scholarships (for education and accommodation), allocated on the basis of financial need, and required universities to offer their own equity scholarships in order to qualify for funds from the Higher Education Equity Support Program. A significant increase in funds was channelled through this program to finance outreach and student support activities for low SES students (including those from rural and regional areas). Specific scholarships for Indigenous students were subsequently introduced by Minister Bishop, along with a significant growth in other equity-based Commonwealth Scholarships.

Despite these regulatory measures, equity continues to operate at the margins of most university activity. The creation of a market in higher education has 'redefined [students] as individual consumers of competitive public services' (Peters & McDonough 2007). The overriding logic of the market requires universities not only to be more efficient in their expenditure of government funds, adopting the management approaches of corporations, but also to generate their own funds to further their operations. During the Howard government's 12 years in office, government funding of universities decreased in relation to the number of students enrolled and by comparison with other OECD nations (Marginson 2007).

Throughout this history, inequality in higher education has been a persistent problem, not only in Australia but globally. The problem seems to have been resistant to various policy therapies, which suggests:

- a poor conception of the problem
- a lack of political will and/or
- poor implementation of policy.

Late in 2007, the Rudd government was elected to office with a mandate to embark on an 'education revolution'. The creation of a new Ministry of Social Inclusion co-located with the Department of Education, Employment and Workplace Relations gave an early signal about where equity was to feature in this revolution. As outlined above, the history of Australian higher education has been characterised by a shift in the way equity is viewed—from a social issue to an economic issue. As far as equity and education are concerned, the Rudd government 'revolution' appears to be positioning them as the concern of both social and economic policy. As Stephen Smith, then Shadow Minister for Education, asserted a few months before the 2007 election, 'not only is education a key driver of social justice and personal enrichment, it is also a vital instrument of economic policy' (2007: 2).

Suggestions of this changed relationship between 'society' and 'economy', and the implications for education and equity, can be seen in the introduction to the *Review of Australian higher education*

*discussion paper* (Bradley 2008: 1). The challenge ahead is how to achieve this in the context of a knowledge economy that requires a system of universal higher education in order to remain globally competitive (Trow 1973, cited in 2006; James 2007), juxtaposed with a supply of potential domestic applicants that is about to peak and then fall away (Bradley 2008).

## Conditions of entry to higher education

Equity in accessing and participating in higher education means different things to different people, across time and place. Nevertheless, Anderson suggests that these differences share a common set of building blocks or conditions: availability, accessibility, achievement and aspiration (Anderson & Vervoorn 1983). They provide a common language to describe and evaluate equity interventions, in this case those focused on schooling up to Year 11. Each condition is considered in turn, beginning with a description and analysis of particular interventions and followed by the particular context informing them.

### Availability

There are few interventions in schooling up to Year 11 that have the strategic intent of improving the availability of university places for students. In part, this is because place availability is often seen to be an issue in the post-compulsory years and even then as the responsibility of governments rather than universities. However, the marketisation of higher education discussed above and recent imperatives to expand the system (see below, 'Supply versus demand') have challenged these assumptions. Universities now exercise far more flexibility about how many places and which programs they offer, and from where they source their students. Three types of interventions involving these issues of place availability tend to operate in schools up to Year 11: the bond, the pledge and sponsorship.

#### *The bond: guaranteeing availability*

Bond interventions tend to be directed at gaining advanced commitment by very capable students to take up university places. Even when the interventions target particular equity groups, the main intent is to attract students with a record of high academic achievement. Elite universities tend to be most effective at this, leveraging off their prestige. Often the strategy involves some kind of scholarship, which among other things acts like a guarantee of a university place for the students involved, provided certain conditions are met. The bond also serves institutions, which are guaranteed high-achieving future university students. The Kwong Lee Dow Young Scholars Program (see box) is an example of the kind of bonding involved, although in large part the focus is on the transition years (Years 11 and 12) with some initial contact in Year 10.

#### **INTERVENTION: Kwong Lee Dow Young Scholars Program (AUSTRALIA)**

The Kwong Lee Dow Young Scholars Program at the University of Melbourne (Australia) is named after a former Professor of Education. It commenced in 2005, targeting Year 10 students moving into Year 11 in 2006 and is an academic enrichment program designed to support high-achieving secondary students during Years 11 and 12.

Each school in the state of Victoria (and some over the border), including the most disadvantaged schools in the state, is invited to nominate their most outstanding Year 10 students. The university selects at least one student from each school on the basis of a recommendation from

the school and the student's academic performance and leadership skills. Up to 700 students participate in the program during their studies in Years 11 and 12.

Young scholars are provided with exclusive access to study skills sessions; tailored on-campus events including academic and social activities; dedicated functions during key events such as Open Day; a dedicated portal on the university website, including information on further study opportunities; student blogs and social activities; and access to the University of Melbourne's library.

Upon enrolment at the University of Melbourne, Kwong Lee Dow Young Scholars are guaranteed a place in the degree of their choice conditional upon meeting any course prerequisites and achievement of a tertiary entry rank (TER) of 95 (or 90 if from an under-represented school). [99.9 is the highest possible TER.] Rural or interstate students are provided with a A\$2500 allowance to assist with settling-in costs in Melbourne.

During their first year of enrolment at the university all scholars participate in the Kwong Lee Dow First Year Program, which aims to enhance development of academic and leadership potential. Scholars are also eligible for a A\$2500 Study Abroad Scholarship in their second or third year to enable participation in an international mobility program during their studies at the University of Melbourne.

[www.futurestudents.unimelb.edu.au/courses/kwongleedow.html](http://www.futurestudents.unimelb.edu.au/courses/kwongleedow.html)

### *The pledge: committing to availability*

The pledge tends to focus on making students 'place ready'. Often this is part of a program focused on improving students' academic achievement, but the student pledge includes behavioural standards consistent with those of students who normally progress to university. Students are required to make a pledge or commitment in order to be included in a program. Institutions commit to making places available but this is not a commitment to particular students, who still need to meet specific entry requirements. The Twenty-first Century Scholar's Program (described below) provides one example. Students are required to pledge to the program early and do not receive financial assistance during their secondary schooling. Hence, the program tends to retain students already intent on attending college.

The industry parallel is beginning to emerge in the Australian mining sector. Companies desperate to attract workers and often located in geographically isolated areas (such as One Steel in Whyalla and Fortescue Metals in the Kimberley), are offering onsite training to the long-term unemployed and other disadvantaged groups in their region who agree to certain behavioural standards during their training. There is a commitment from the company that jobs will be available at the end of the training but employment is subject to applicants meeting minimum standards covered in their training.

### **INTERVENTION: *Twenty-first Century Scholar's Program* (UNITED STATES)**

The Twenty-first Century Scholar's Program (State of Indiana, United States) was initiated by the Indiana Career and Postsecondary Advancement Centre in 1990 as part of the state's multi-pronged approach to address its relatively low rates of college graduation. It is funded primarily by the state with the assistance of a substantial grant from federal GEAR UP funds.

The program promises low-income middle-school (Years 7 and 8) students a scholarship up to the cost of four years' tuition at participating Indiana colleges or universities on the condition that they pledge to graduate from school with a reasonable grade point average, take the college preparation curriculum, enrol full time in a post-secondary institution within two years of high school graduation, refrain from using illegal drugs and alcohol and refrain from committing a crime. The program has a comprehensive support system for scholars, including tutoring,

mentoring, career counselling, college visits and activities for parents, which is provided by staff at regional service centres and volunteers. It also has a service learning component.

A 2003 report (Cunningham et al. 2003) states that since the program's inception over 50 000 students have taken the Twenty-first Century Scholars Pledge. Of the first cohort of 5757 students, 46 per cent met the conditions of the scholarship by the end of high school and of those 54 per cent attended college in the first year. Data from subsequent years has been similar. A number of studies have shown a positive effect on the rate of college participation in Indiana, particularly for minority students, with an increase in high school to college participation from 38 per cent in 1986 to 61 per cent in 1998 (Cunningham et al. 2003; St John et al. 2004). With controls for student background and academic preparation, scholars are more likely than non-scholars to attend college. The studies also note an increase across the state in college preparatory coursework and advanced placement courses.

[www.ed.gov/programs/gearup/index.html](http://www.ed.gov/programs/gearup/index.html)

### *The sponsored: reserving availability*

Sponsorship, a third type of intervention directed at increasing place availability for under-represented groups, blends elements of the bond and the pledge. While sponsorship programs select students with particular backgrounds and circumstances who are able to meet certain entry standards and hurdle requirements for continuation, students are not obligated to enrol in a particular university course or university or even to attend university at all. Nevertheless, institutions still make available a number of places reserved for students who pass through the program. More importantly, the institutional commitment is to sponsoring students into an academic culture and to the formation of an academic disposition, which necessarily includes activities related to achievement and aspiration (see the discussion of these entry conditions in the following sections).

#### **INTERVENTION: *Sheffield's Outreach and Access to Medicine Scheme (UNITED KINGDOM)***

The School of Medicine and Biomedical Sciences at the University of Sheffield (United Kingdom) has been awarded 20 additional places in its medical degree for students who have the ability to become good doctors, but who would not normally consider this as a serious option. The University of Sheffield's Outreach and Access to Medicine Scheme (SOAMS) commenced as a two-year pilot program and was approved as a five-year program in 2001.

SOAMS provides support and guidance to local Year 9–13 students with an interest in medicine or science, through programs and activities aimed at raising awareness, aspirations and levels of achievement. To be selected Year 9 students must be the first generation in their family unit to enter higher education, have the need to study locally for personal, cultural or financial reasons, and 'have personal circumstances which may limit aspirations, expectations and awareness'.

SOAMS has two main phases:

- Phase One (Years 9–11) involves raising awareness about the medical profession and science in general. Students are introduced to work experience and encouraged to think seriously about post-secondary qualifications and subject choices. Visiting museums and interactive exhibitions is an integral part of this phase.
- Phase Two (Years 12–13) includes advice and guidance about university and career options. Students attend a residential summer school to enhance the study of science subjects, practise clinical skills, experience mock interviews, visit hospital departments and so forth. Students undertake relevant work experience and are given advice on completing their University and Colleges Admissions Service applications. Students are also offered mentoring support from university medical students through an online mentoring scheme.

Students who have completed the scheme are eligible for a guaranteed interview at Sheffield's medical school. Successful applicants are then considered for one of the 20 'ring-fenced' places.

One hundred students join the scheme at the beginning of Year 9. At the end of Year 11 the students completing Phase One are invited to apply for one of the 30 places on Phase Two. Selection is based on demonstrated attitude and aptitude, academic results and an interview.

Although there are direct benefits of applying to Sheffield, such as a guaranteed interview, students can apply to any institution. Students who do register at the medical school are able to apply for a SOAMS bursary of £1000 per year of study (means tested).

Towards the end of SOAMS students are offered post-application support, which includes preparation for the transition from school to university. Students who are unsuccessful, or who choose to study a subject other than medicine will be offered additional advice and guidance.

The first group of SOAMS students admitted to the degree graduated in July 2008. All five graduates were the first in their family to graduate from university and had participated in the initial two-year SOAMS pilot.

[www.shef.ac.uk/schools/soams](http://www.shef.ac.uk/schools/soams)

Little systematic evaluation has been done on the effectiveness of these interventions. However, there is a growing critique that they tend to benefit those who least need them (Slack 2003; Hatt et al. 2005; Ward 2006; Archer 2007). Certainly, bond interventions seem to be focused on identifying students very similar to those already on track to higher education, who differ only in their access to financial resources, while pledge interventions seem to be focused on socialising students into the higher education track. As noted above, sponsorship interventions combine elements of both. Reserving specific places for students from under-represented groups and sponsoring them into these places can enable students to meet existing university entry criteria at the same time as the intervention challenges those criteria. Whether sponsorship interventions tend to benefit those who least need them largely depends on the extent to which such interventions are able to rework place availability.

#### *Supply versus demand*

The broader context in which these interventions are located is in the changing dynamics of university student supply and demand. At the time Anderson was writing, in the late 1970s and early 1980s, there had been significant expansion in the number of university places available in Australia. However, this growth had done little more than keep up with population growth and participation rates in higher education had remained generally constant (Anderson & Vervoorn 1983).

Since that time the number of university places has continued to grow: from 1991 to 2007 the proportion of the population with a bachelor's degree or above more than doubled, to one of the highest rates in the OECD (in 2007, 29.2 per cent of all 25- to 34-year-olds compared with an average 33 per cent for the OECD top six) (Bradley 2008). A decline in the school leaver population and a strong labour market mean that Australia is now at a stage where demand for university places has been largely met, with record low levels of unmet demand at a national level (Bradley 2008; Wells 2008).

While some regions are still experiencing unmet demand, at a national level the availability of places is no longer a significant barrier to university participation. This fall in demand is of increasing concern to Australia's policy makers, who fear that the local student market may not be able to keep up with the economy's need for graduates. Wells demonstrates how a continuing decline in the school leaver age group, a rapidly ageing workforce and an increasingly knowledge-based economy mean Australia is heading for a major skills crisis, particularly in relation to graduates. She notes that,

in Victoria alone, current trends suggest that there will be 40 000 fewer higher education graduates than required by 2020.

Wells highlights that the economic imperative to broaden higher education participation is stark, providing powerful reinforcement for the social and moral imperatives to increase the participation of under-represented groups, including older workers who may have missed out on educational opportunities when they were younger. Bradley also notes the intertwining of arguments for increased higher education participation 'both for the benefit it brings to the individual and for the long-term social and economic benefits in terms of workforce participation and a more socially inclusive society' (2008: 28). Writing in the *Australian Financial Review*, in 2007, Slattery (2007) strongly argued the business case for greater equity in both school and university education, citing a recent report by the Business Council of Australia.

It could be argued, therefore, that it is economic necessity rather than a commitment to social justice that is driving the renewed focus on student equity in higher education and the current focus on social inclusion. The economic arguments for increasing and widening participation in higher education are echoed across the globe (Berger 2008; Cunningham et al. 2003), and were a significant driver of the United Kingdom's 'Widening Participation' policy goal to increase the higher education participation of people aged 18 to 30 to 50 per cent by 2010 (Leathwood & Hayton 2002). As Leathwood and Hayton note, New Labour's social inclusion agenda is 'about being economically and socially included' (2002: 140).

#### *What kind of higher education?*

There is increasing recognition internationally that the jobs required in a knowledge economy will demand a significant expansion in the number of university graduates. The growth of higher education across the developed world from elite to mass and even approaching universal provision in some countries (Trow 2006) has been largely about meeting the changing labour force needs of the developed and developing world.

However, this expansion has not been accompanied by increased equality of access. On the contrary, the 'massification' of higher education has tended to produce increased diversification and stratification of the sector (Archer et al. 2003; Marginson 2004a; Pugsley 2004; Brennan 2005a; Reay et al. 2005; David 2007; CSHE 2008). As the number of people accessing universities and qualifying for a degree has increased, the overall positional value of an undergraduate degree has declined (Marginson 2004a, 2004b, 2006) to the extent that the upper and middle classes must ensure their positional advantage through the status of higher-prestige universities and disciplines. In this way 'elite university education becomes continuous with independent private schooling at secondary level' (Marginson 2004a: 14), while students from low socioeconomic backgrounds and most public schools are 'channelled' into lower-status institutions and disciplines (David 2007).

A growing polarisation has developed between universities attended by the elite and those attended by students from low SES backgrounds and from ethnic, and particularly Indigenous, minorities. This is particularly so in the United States and the United Kingdom, where students from the lowest socioeconomic quartile can be up to five times less likely to attend an elite university than those from the highest socioeconomic quartile. Instead, low SES students are highly represented at post-

1992 universities and polytechnics in the United Kingdom and community colleges in the United States (Archer 2007; CSHE 2008).

While Australia is one of the few OECD countries that has a notionally unitary system of higher education, David (2007), Marginson (2006) and the Centre for the Study of Higher Education (2008) highlight the increasing differentiation within that system. It is a differentiation strongly encouraged by the rhetoric of diversity and choice of the Nelson reforms (Nelson 2002, 2003). As in the United Kingdom and the United States, the representation of people from low SES backgrounds at Group of Eight universities is well below the national average; it is at its highest in regional and post-Dawkins universities (CSHE 2008).

Most students want to attend prestigious universities, hence the competition to attend them is high. Prestigious universities are therefore able to maintain their status position by selecting the 'best' students—those with the highest entry scores. In most cases these are students who have already experienced a privileged secondary education. Rarely are they from low socioeconomic backgrounds (Teese & Polesel 2003). Over time status becomes circular in its effects. The prestigious institutions attract higher numbers of applications and require higher entry scores, 'making places scarcer; and the scarcity of places enhances the value of access and reproduces the prestige of the institution' (Marginson 2004b: 2). Places in prestigious or elite universities are therefore seldom available for people from low SES backgrounds, who rarely achieve the required entry scores.

## Accessibility

Accessibility, as a condition for entering university, is often defined in terms of 'finance and geography' (Anderson & Vervoorn 1983), which are then equated with students of low SES, and regional and remote (or rural and isolated) students respectively. Both are defined by the Australian government in terms of their location:

- Socioeconomic status is 'based on a ranking of postcodes according to the educational and occupational characteristics of residents using the SEIFA (Socioeconomic Indexes for Areas) index' (CSHE 2008: 17).
- Regional and remote areas are defined in terms of *community context*, 'using the ABS postcode classification of geographical areas' (James et al. 1999: 14), and, for the purposes of participation in higher education, in combination with *physical access*: 'the distance from home to a university campus' (Western et al. 1998; in James et al. 1999: 14).

The inaccessibility of higher education for Australia's Indigenous population is often explained as a combination of both:

- There are 'marked differences in the financial circumstances of Indigenous students compared with non-Indigenous students' (CSHE 2008: 52), and the former are more often associated with low socioeconomic status.
- 'In 2006, only 31 per cent of Indigenous Australians lived in major cities while the rest of the Indigenous population was distributed across inner regional (22 per cent), outer regional (23 per cent) and remote/very remote areas of Australia (24 per cent)' (CSHE 2008: 52).

This combination (of 'lower socioeconomic background, rurality and distance from a campus') produces a 'cumulative effect' for many Indigenous and other regional students in terms of their access to higher education (James et al. 1999: 10), so that they are 'doubly disadvantaged'. However, defining disadvantage in this way means that other issues, such as disability and coming from a non-English-speaking background, are not necessarily seen as inhibiting students' access to and participation in higher education.

#### *Access via philanthropy*

While the problem is conceived in terms of geography, the solution is often imagined as a matter of finances. Hence, interventions aimed at increasing access to higher education for under-represented groups tend to concentrate on the allocation of funds. Often this involves the creation of scholarships although, unlike bond interventions that target place availability (see discussion in earlier section), philanthropic interventions do not usually involve merit criteria but look for a desire by potential recipients to pursue further education. The Commonwealth Learning Scholarships and matching institutional equity scholarships (discussed in an earlier section) are of this order.

However, some examples of philanthropy go beyond providing simple financial solutions to increasing access to higher education. They incorporate supportive programs and activities aimed at raising students' achievement and building their knowledge and understanding of possible futures. The Learning for Life program initiated by the Smith Family is such an intervention aimed particularly at students from low SES backgrounds. It adopts a model similar to the child sponsorship programs of international aid organisations (for example, World Vision), whereby a disadvantaged child is sponsored by a financial donor who receives regular updates of the child's progress.

#### **INTERVENTION: *Learning for Life* (AUSTRALIA)**

Learning for Life is the major program of the Smith Family, an Australian, independent, non-profit organisation that 'supports children and families living in financial disadvantage to unlock opportunities to participate more fully in society, using education as the key'. Donations are invited to 'sponsor' a child through the Learning for Life program and donors are provided with (non-identifying) progress reports on their sponsored child/young adult.

Learning for Life commenced in 1988 and has assisted more than 40 000 disadvantaged students, providing financially disadvantaged students from primary school through to tertiary study with support through scholarships to assist with education expenses such as uniforms, books and excursions. Scholarships are offered to students whose families meet the Smith Family eligibility criteria of low income and commitment to their children's education and are not based on academic merit. The scholarship provides financial support—between A\$250 and A\$2000 per student per annum, depending on year of study at school or university—and educational support from staff.

Learning for Life also provides students with access to programs in personal support, to improve students' academic skills through mentoring, locally based learning clubs and tutoring; personal development, to develop students' informal learning through extra-curricular activities such as sports and the arts; and literacy skills development, which aims to build comprehension as well as financial and technological literacy. A new initiative is the online mentoring service, i-Track Youth Mentoring, which focuses on the school to work transition. Students develop online mentoring relationships with supportive adults other than a teacher or parent to assist with information about workplace, study and career opportunities so as to enhance their school to work transition.

The goal of Learning for Life is to help individual young people from financially disadvantaged backgrounds discover their strengths and fulfil their potential, providing them with the support



and guidance they need to successfully complete school and negotiate career choices, which may or may not involve university.

Partnerships have been developed with most of the larger Australian universities, usually in relation to supporting Learning for Life students at university. A more comprehensive model has been recently launched with the University of Technology Sydney, where the university promotes fund-raising and volunteering opportunities to staff and students, provides free access to the its centrally located facilities, and investigates opportunities for research.

The Smith Family is highly research-based, conducting regular research into its program and the progress of its Learning for Life students. Some findings of the last two reports are outlined below.

*On track - Students choosing a career* (Beavis 2006) is the fourth in a series of reports on post-school plans of young people and includes responses to questions about the factors that shape students' plans for attending university. The report indicates that these young people were planning a future shaped by their interests, perceived ability and their families. Plans for university seem to be influenced by students' self-perceptions of ability but many students were unclear about the educational requirements of occupations, with only 40 per cent of the Learning for Life students matching their planned educational level and the level needed for their preferred job.

The most recent report, *Australian young people: their stories, their families and post-school plans* (Bryce et al. 2007), focused on a small number of 'achievers', students who were on their way to achieving their post-secondary goal, and followed up the influence of families on students' plans. The report found that the financial support of scholarships is important, but not enough. The mentoring provided by Learning for Life, as well as by significant teachers, is critical because it can supply information that some families may not have due to uncertainty about the confusing range of options available. However, these students were not generally constrained by family expectations and had a predisposition to tertiary study. The young 'achievers' in the study tended to show high achievement, a love of learning, persistence and 'a remarkable sense of future' (p. 5) from early secondary school, but often buckled under the pressure of Year 12 exams.

The report suggests that a sense of personal agency, in which the young person is guided and encouraged to be able to make informed choices about their future, is significant and recommends an 'opportunity rich' environment in which institutions work together to equip young people for meaningful decision making.

[www.thesmithfamily.com.au/site/page.cfm](http://www.thesmithfamily.com.au/site/page.cfm)

Similar philanthropic interventions aimed at increasing students' access to higher education operate in regional and remote areas of Australia. The Country Education Foundation is one example. Its *modus operandi* has more similarities with a micro-credit model than with the child sponsorship of Learning for Life.

**INTERVENTION: Country Education Foundation (AUSTRALIA)**

The Country Education Foundation of Australia is a not-for-profit organisation that assists rural communities around the country to establish local education foundations. With start-up financial support and advice from the Australian foundation, local foundations raise scholarship funds to help school leavers who continue on to further, technical or higher education. From 1994, when the first foundation was begun in the Boorowa community in New South Wales, the number of local foundations has risen to a total of 30 across New South Wales, Queensland and South Australia. To date, more than 800 grants have been received by rural youth amounting to almost A\$800 000 in financial support.

A number of universities have partnered with the foundation to provide extra financial support for students who are the recipients of local education grants. This support is given mainly for the first year of study in an undergraduate degree and usually matches the local grant on a dollar-for-

dollar basis. While the Country Education Foundation the national and the local education foundations target school leavers, it is not just Year 12 students who receive assistance and the scholarships are given for broad study options. Thus students in Years 10 and 11 are eligible for assistance if they are leaving school to access diverse post-school training options, such as apprenticeships, traineeships and cadetships.

The Country Education Foundation actively links local foundations with organisations like the Foundation for Rural and Regional Renewal that provide grants assistance. At least two small rural communities have introduced university familiarisation programs. In 2003 Nannup Youth Advisory Council in Western Australia took a group of Years 8, 9 and 10 students from Nannup District High School on an excursion to Bunbury. Among cultural experiences such as seeing a stage show and visiting an art gallery, the students participated in what may, for many of them, have been an even less familiar cultural experience: sitting in on a lecture at university. In 2008, a small group of Year 12 students from Eudunda Area School in South Australia experienced a lecture at the Mawson Lakes campus of the University of South Australia. The one-day orientation experience included a long lunch in discussion with ex-students from Eudunda who were attending the university. Writing in the school newsletter, one of the students described the day as 'a fantastic learning experience ... it let our nerves rest knowing that there are a lot of friendly people who can help us through the transition'.

While the Country Education Foundation and local foundations target school leavers, their community-based activities can also assist younger students. Promoting the benefits of higher education to school leavers helps inspire other students to raise their aspirations. Scholarship recipients are celebrated at local events and in local media and they become role models for other students. Students receive the message from their community that education is important because they and their futures are important. Students who go on to further education leave the area knowing the community supports their endeavour and in many instances students visit their local school to mentor and motivate other students. Parents whose life experience has not included higher education are persuaded to consider university study as a realistic option for their children. In many communities the local foundation thus provides an immersion in educational conversations that may go some way towards changing the discouraging effects of parental attitudes on students' aspirations towards further education (James et al. 1999).

#### *Access via example*

A second intervention type aimed at increasing students' access to higher education moves beyond the narrow definitions described above. While access is acknowledged as having a material component (that is, geography and finance), it is also understood as a socio-cultural issue. Hence, there are similarities with 'exposé' and 'taster' interventions (see discussion of 'aspirations' below) which share a message that university is a place for people who differ from current higher education population norms. However, example interventions differ in that the message addresses the specific concerns raised by prospective students with responses drawn from the experiences of current and graduate students like themselves. The *project u* DVD is a good example of such an intervention.

#### **INTERVENTION: *project u* (AUSTRALIA)**

In 2005, the Queensland University of Technology developed *project u*, a high-quality DVD aimed at high school students from particular population groups (Indigenous students, regional and rural students, students from low-income and non-English-speaking backgrounds). The aim of *project u* is to encourage students from disadvantaged backgrounds to consider university as one of their post-school options.

In the development phase of the *project u* DVD, high school students from Years 10, 11 and 12 were surveyed about why they doubted that university was within their reach. University students were then asked about how they overcame those obstacles on their path to higher education and how they handled the key decision-making milestones.

*project u* shares this information with current high school students through an interactive DVD available to all high school students free of charge. It is supported by a website linking students, parents and careers advisers to a range of resources. The DVD is not university-specific, and has become a popular student-centred resource for other universities.

[www.projectu.com.au](http://www.projectu.com.au)

### *The question of cost*

Whether the costs of attending university are a significant barrier to higher education for people from low socioeconomic backgrounds has been one of the longest-running debates in the field of higher education. The impact of the abolition of fees by the Whitlam Australian government was the impetus behind Anderson's initial research (Anderson et al. 1980) and has since been pursued by numerous researchers in Australia and overseas (Andrews 1999; Hesketh 1999; Archer & Hutchings 2000; Birrell et al. 2000; Borland et al. 2000; Aungles et al. 2002; James 2002; Greig et al. 2003; Zappala 2003; Chapman & Ryan 2005; Marginson 2005; Reay et al. 2005; Argy 2006; Cardak & Ryan 2006; Rasmussen 2006; Godden 2007; Universities Australia 2007; Callender 2008; CSHE 2008).

Many Australian researchers have concluded that the cost of attending university is not a significant deterrent and that changes to fee regimes over time have not made any real difference to the social composition of universities (Anderson et al. 1980; Aungles et al. 2002; Chapman & Ryan 2005; Cardak & Ryan 2006). Despite this, a large proportion of policy interventions developed to increase the participation of people from low socioeconomic backgrounds, both in Australia and elsewhere, have focused on financial matters. This is particularly so in the United States but is also the case in Australia, especially since the 1996 budget increases to HECS.

A more nuanced reading of the literature suggests that the financial considerations of university study have a greater effect on where and possibly how students participate, rather than on whether they do or do not. For example, Foskett et al. (2006) claim that Australian, New Zealand and UK students cope by taking on part-time work. Callender and Jackson's UK study supports this view. They confirm that the financial impact of higher education is greater on lower SES students and is also 'associated with perceptions of the benefits of going to university' (Callender & Jackson 2008: 426); the opportunity costs.

Understandably, perceptions of debt are more pronounced in poorer students, particularly because they are 'more likely to leave university with a larger debt' than their wealthier peers (Bowers-Brown 2006: 62). For example, in the United Kingdom low SES students are more likely to attend a university close to home rather than accrue the extra cost of relocating to study at a university they may prefer (Reay et al. 2005; Callender & Jackson 2008). With income support increasingly difficult to obtain in Australia, low and middle-income regional and remote families face considerably higher costs educating dependent children than urban families of equivalent socioeconomic status. Regional students report extreme financial difficulties associated with working part-time (and sometimes full-time) while studying. There are also declining levels of subsequent enrolment among those who defer in order to work and qualify for income support. Living expenses can double the

cost of a higher degree for regional and remote students who cannot continue to live at home (Godden 2007).

A Canadian program, developed collaboratively between two low-participation provinces and the Canadian Millennium Scholarship Foundation, combines a financial incentive scheme with career education and some mentoring. The financial incentive component is targeted to low-income students only.

**INTERVENTION: *Future to Discover Pilot Project (CANADA)***

The Future to Discover Pilot Project is funded by the Canadian Millennium Scholarship Foundation, in partnership with the provinces of Manitoba and New Brunswick, to determine which approaches work best to increase access to post-secondary education. While aiming to assist all secondary school students it has a particular focus on low-income students whose families have little or no post-secondary experience. The pilot project tests two interventions, Explore your Horizons and Learning Accounts, both separately and in combination, and commenced with cohorts of students in Year 9 in 2003.

Explore your Horizons is a career education program offering 'career focusing' workshops to help secondary students in Years 10 and 11 explore career options and develop educational and career plans. These are followed in Year 12 by further workshops aimed at helping students manage transitions and build resilience to overcome challenges. In each of the three years there are also two sessions with current post-secondary education students and participants are able to access the members-only 'Future to Discover' website and magazine.

Learning Accounts is a financial incentive scheme for students from families with income below the provincial median. It includes a guarantee of a grant worth Can\$8000 that is conditional on completing high school and participating in post-secondary education. Instalments of Can\$2000 are added to students' learning accounts at the satisfactory completion of Years 10 and 11 and a final instalment of Can\$4000 is added upon high school graduation. Participants must complete at least two years of one or more recognised post-secondary education programs in order to redeem their account.

For the pilot, Year 9 students from the two provinces were randomly recruited to participate and assigned to either one or both programs or a control group. A total of 5429 students were recruited for the first cohort. The initial report on the pilot (Currie et al. 2007) provides a comprehensive account of the first year of the intervention. At this early stage it suggests that the combination of Explore your Horizons and Learning Accounts is more effective in engaging students than Explore your Horizons on its own. Of those students recruited to the Learning Accounts pilot, over 90 per cent received an instalment at the end of the first year, upon completing Year 10.

*The question of location*

As noted above, educational disadvantage for rural and regional students is often equated with being 'geographically challenged' and as aggravating the disadvantage experienced by Indigenous peoples and people with low SES backgrounds. Moreover, often 'regional', 'rural', 'remote' and 'isolated' are conflated to suggest a social, cultural and geographic homogeneity that does not exist. As a consequence, the complex social, cultural and economic factors affecting the participation of diverse groups of rural and regional people in higher education are invisible.

For many students living outside Australia's cities, participating in higher education can demand significant social and cultural re-adjustment as they move from small schools, towns and communities to an urban environment where little can be taken for granted. Catching public transport, living independently, negotiating large, intimidating and unfamiliar institutions, creating

new social lives, can all be strange and daunting experiences. There are additional unsettling effects of losing contact with family and longstanding community support and social networks. These social and cultural adaptations are typical of any resettlement. They will be experienced differently by individuals and also by different groups; for example, by regional compared with other rural groups, by Indigenous peoples, people with disabilities, and differentially informed by gender and SES status. They constitute both anticipated difficulties and the lived experiences of rural and regional people. Indeed, regional students with local access to higher education often report that not having to leave home is an important factor in the decision to continue education.

These issues pose difficulties in the transition to higher education and often deter people from making the ultimate decision to continue. Additional and less visible factors affecting under-represented groups are those that have an impact on educational aspirations and achievement from a very young age. Parental encouragement, the perceived relevance of higher education, fewer adult and peer role models, lack of information about career options, restricted curricula in small schools, pathways that diverge too early, lack of confidence, restricted exposure to multiple social and cultural opportunities: these are social, cultural and intellectual barriers to accessing higher education that interrelate in complex and little understood ways on under-represented groups.

## **Achievement**

Australian equity policy in higher education is based on the assumption 'that basic scholastic ability of the sort demanded for higher study is evenly distributed throughout society' (Anderson & Vervoorn 1983: 2) and, hence, that there should be proportional representation of all groups of people within university student populations.

In fact there is not, at least not for some groups: most notably, Indigenous students, students from low SES backgrounds, students with disabilities (although there have been some improvements in representation in recent years), and students from regional and isolated areas. For example, while low SES people are under-represented, high SES people are over-represented.

The obvious explanation for this discrepancy is that students from different socioeconomic backgrounds are differentially prepared by schooling for entry into university. The nation-wide literacy and numeracy tests conducted in schools in Years 3, 6 and 9 demonstrate this very point. As Alloway and Gilbert (1997) argue, the very clear challenge for the Australian schooling sector relates to which students are performing below the benchmarks in literacy. It is the relationship between gender, class and ethnicity that is salient, with class being the strongest predictor of low achievement. The effect of schooling over time is to increasingly associate students' academic achievement in school with their socioeconomic status. Put simply, 'schooling *reproduces* the structure of inequality itself' (Connell et al. 1982: 27).

Understandably, governments, schools and universities are disturbed by such outcomes and over time have variously intervened in schools and systems to:

- *compensate* students for the effects of schooling (for example, some universities grant extra university entrance score points to students from particular groups, others construct alternative entry mechanisms and pathways)

- help students *overcome* the effects of schooling (for example, various programs are implemented to help students raise their academic achievements)
- *change* education systems so that they deliver more equitable quality outcomes (for example, rethinking school structures and how they can better engage students). The new thinking is about how ‘schools can be the vehicle for significant *changes* in established social relationships’ (Connell et al. 1982: 190).

Given that scholastic ability is evenly distributed in the general population, interventions aimed at redressing the relatively high correlation between students’ academic achievement in school and their SES serve to improve quality outcomes rather than undermine them. Such interventions include targeting the talented, the ‘academic middle’, areas of national priority, particular under-represented groups, how we think about teaching (pedagogy), and how we think about schooling (middle schooling). Each of these targeted interventions is discussed in turn below.

#### *Targeting the talented*

The College Success Foundation, funded by the Bill & Melinda Gates Foundation, targets ‘talented, low income students who have overcome difficult circumstances and are motivated to attend college’ (Fouts & Associates 2003: 5). In such programs, academic preparation and study skills are offered to school students, often in the final year of high school (for example, pre-college programs) or as early as 6th grade (Bergin et al. 2007: 729).

#### *Targeting the academic middle*

Another intervention that is more cognisant of the effects of schooling on disadvantaged students targets the ‘academic middle’, where talented students from under-represented groups are typically located. One of the significant interventions of this type is the Upward Bound program, described in more detail in the section below on national interventions. Upward Bound provides a policy framework and funding for over 700 programs under the TRIO umbrella (also described in the national interventions section below). The East Tennessee State University program provides one Upward Bound example.

#### **INTERVENTION: *Upward Bound* (UNITED STATES)**

The Upward Bound program operating at East Tennessee State University supports around 145 students from 14 local high schools who must meet at least one of the eligibility criteria of low family income and/or lack of a degree from a four-year college by either parent. Students commence the three- to four-year program in the beginning of their freshman or sophomore year and remain in the program until they leave school.

During the school year, members of the university’s Upward Bound staff visit each school for one session a week and once a month students visit the university campus for a half-day Saturday session. These sessions help prepare students in English and maths to take the Student Aptitude Test, and provide seminar classes geared towards each grade level. Transportation is provided by East Tennessee State University.

During the summer, students participate in a six-week residential program on the campus of the university. They attend classes in mathematics, science, communications and foreign languages in the morning; the afternoon schedule offers a variety of classes such as computer, art, crafts, music and physical fitness activities. Participants also attend several educational and cultural activities throughout the year.

Following high school graduation, students enrol in two summer college classes that Upward Bound funds. Students earn six hours of college credit and are referred to as 'bridge' students. Students are not required to attend East Tennessee State University, although many do.

There is no cost to the student or the family for being in the Upward Bound program. The program pays all of the costs for the participants. During the academic year students earn money for every session they attend and every school visit they attend. During the summer, the students receive a small weekly stipend that can be used on anything the student wishes.

Parents are encouraged to become involved through family-based activities and parent meetings and are kept informed through the program's website and regular newsletters. Parents are provided with advice about pre-college requirements such as subject prerequisites, college admissions procedures and student aid applications.

[www.etsu.edu/ub/](http://www.etsu.edu/ub/)

In response to critiques of Upward Bound, GEAR UP (outlined below) was established by the Clinton government in 1998 to promote increased knowledge, expectations and preparation for post-secondary education among low-income students and their families. It joined TRIO as a major federally funded program to enhance educational outcomes for low-income and minority students. It goes some way towards filling the gaps of Upward Bound and the other TRIO programs by aiming to influence district-wide education policies. GEAR UP differs from TRIO in targeting cohorts of students, not individuals, from no later than Year 7 through to graduation, and in mandating collaboration between educational and community agencies (Swail 2000).

**INTERVENTION: *Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) (UNITED STATES)***

GEAR UP is coordinated by a non-profit organisation, the National Council for Community and Education Partnerships; each project is led by a local coordinator. By 2006, GEAR UP was serving over 1.2 million students across 168 partnership programs and 40 state programs. Grants allocated ranged from US\$100 000 to US\$7 million for partnership programs and from US\$500,000 to US\$3 million for state programs. In 2006, the US federal government allocated over US\$306 million to GEAR UP programs.

Taking a more collaborative approach to increasing participation, GEAR UP allocates grants to partnerships that provide in-school interventions in high-poverty schools. These partnerships must involve schools, universities and community organisations. GEAR UP grants are also provided to states, on a matched basis that must provide both an early intervention program and a scholarship guarantee component.

The GEAR UP approach is to examine the reasons for students' underperformance and to provide academic models and financial incentives to improve the performance of the schools and their students. GEAR UP requires the elimination of academic tracking and the introduction of a rigorous academic curriculum with high expectations for students as well as additional after-school and summer activities. Programs must provide advice on financial aid and college application processes, admission test preparation, and long-term mentoring, tutoring and counselling, as well as parent involvement and professional development for teachers to enhance the quality of teaching.

Through the integration of challenging academics and innovative programming, GEAR UP seeks to improve students' overall school performance by assisting students in the following:

- developing requisite skills for optimal school performance
- increasing self-esteem and sense of self-efficacy in mastering academic tasks
- improving educational engagement
- strengthening bonding to school and peers

- increasing knowledge and awareness of college
- heightening educational aspirations.

Much of this is achieved through the development of relationships between participants and undergraduate and graduate students from established universities who provide ongoing support and advice.

GEAR UP has been enthusiastically received by parents, teachers and students alike and appears to be positively affecting students' college awareness and aspirations as well as their engagement in the academic curriculum. The program is considered as offering a 'promising approach to affect positive achievement outcomes for disadvantaged and minority students through a model of systemic school reform' (Ward 2006: 67). The quantitative impact on student achievement levels is still unclear, with little statistical evaluation available because most GEAR UP projects are still too recent to show long-term results. A recently released evaluation (US Department of Education 2008) indicated that attending a GEAR UP school, as measured near the end of 8<sup>th</sup> grade, was positively associated with:

- parents' knowledge of opportunities and benefits of post-secondary education for their children
- students' knowledge concerning post-secondary education opportunities available to them
- parents' involvement in the school and their children's education
- students taking above-grade-level science courses in middle school
- parents' having higher academic expectations for their children
- for African-American students, the number of rigorous (or above-grade-level) courses taken during middle school. African-American students from GEAR UP schools averaged one (1.0) rigorous course as compared with 0.5 of a course among African-American students from non-GEAR UP schools.

However, there was no evidence of an association between attending a GEAR UP school and the strength of student intentions to attend college, expectations for post-secondary education or overall orientation toward college. There was also no evidence of an association with students' grades or school behaviour, such as attendance or disciplinary problems.

Advancement via Individual Determination (AVID) is an 'untracking' program designed to help underachieving students from Years 6 to 12 in the 'academic middle' (C grade students) prepare for entrance to four-year colleges and universities. (AVID has also commenced an elementary program for grades 4 to 6.) The AVID approach to untracking takes previously underachieving students (primarily from low-income and ethnic minority backgrounds) out of unchallenging courses and places them in academically rigorous college preparation programs. The approach is based on research suggesting that low-performing students do better when they are given accelerated learning opportunities and that all students can learn challenging material if the right types of support are provided.

**INTERVENTION: *Advancement via Individual Determination* (UNITED STATES)**

AVID was initiated in a school in San Diego (United States) in 1980 and taken up by the Californian Department of Education, administered through the AVID Center. By 2008, AVID had spread to more than 3500 high schools and middle schools in 45 states and, through the US Defence Force, across the world (AVID 2008).

AVID is typically funded at the school-site level by school district, state, federal or grant monies. A program coordinator is appointed from existing school staff and is trained in the program's methodologies; tutors are recruited from local colleges and universities and paid for their services. Schools pay for the program coordinator, staff development and curriculum materials.



The cost for one classroom of 30 students is usually less than US\$10 000 per year. The curriculum is typically taught two or three days a week and provides a system of supports to assist students in making the transition from low-track to high-track high school classes.

A key feature is the AVID elective course, with a sequential curriculum that focuses on writing, inquiry and collaboration as methods to accelerate student progress. For one class a day, students learn organisational and study skills, work on critical thinking and writing, and participate in enrichment and motivational activities that make college seem attainable. Two school days are designated as tutorial days. On these days, students work in subject-specific groups, probing material deeply through a variety of inquiry methods, with the assistance of specially trained college students who work as tutors and role models.

The AVID elective course is led by the program coordinator, a teacher on the school staff who has been trained in the program's methodologies. This coordinator is encouraged to establish a 'school site team' of other teachers and support staff who can help extend the model throughout the school.

AVID has been researched widely. For example, evaluation of the program's first three years in 10 Texas schools (1999–2002) found that AVID students were outperforming their classmates on various standardised tests and had higher attendance rates at school. Findings indicate that enrolment into the advanced placement course is increasing and that more under-represented students were better prepared for college. Those students that had completed two years of the AVID program in middle school, for example, were more likely to complete preparatory requirements in high school. In San Diego, 93 per cent of AVID high school graduates enrolled in four-year colleges and universities (Watt et al. 2004).

Almost all AVID students who participate for at least three years graduate from high school (99 per cent compared to 82 per cent nationally) and are accepted to college, with roughly three-quarters getting into four-year universities, almost three times the national average (AVID Centre 2008).

Most AVID students come from under-represented minorities; around 50 per cent are Latinos and 20 per cent African-Americans. AVID is particularly successful in assisting the academic achievement of Latino and African-American students. Of the Latino students who have participated in AVID for three years, 43 per cent enrol in four-year colleges. This rate compares favourably to the national average of 29 per cent. Of the African-American students who have participated in AVID for three years, 55 per cent enrol in four-year colleges, compared to a national average of 33 per cent (Cunningham et al. 2003).

### *Targeting areas of national priority*

A third intervention type seeks to raise student attainment in literacy, numeracy, science and technology. Many of these programs begin as responses to discipline-related concerns in universities but evolve to include some form of active outreach to regional, rural and remote areas or seek to intervene against gender stereotyping (such as women in engineering or men in junior primary teaching). Such interventions can have other significant benefits, such as increasing knowledge and awareness of career opportunities and inspiring interest in new areas of knowledge. Many such programs use mentoring and interaction with 'experts', from which improvements in communication skills and self-esteem are often observed. One such program in Australia involves collaboration between the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the school sector.

#### **INTERVENTION: *Scientists in Schools* (AUSTRALIA)**

The Scientists in Schools program is funded by the Australian Government Department of Education, Employment and Workplace Relations, under its Quality Outcomes Program, to support the Commonwealth Scientific and Industrial Research Organisation (CSIRO) improve

science teaching and learning in all schools. A pilot program involves students from either primary or secondary schools working with a 'real' scientist who mentors or otherwise inspires students to become interested in science. The program aims to inspire teachers and students to strengthen their knowledge and interest in science and science-related careers and to increase scientists' engagement with the broader community (Howitt & Rennie 2008). Partnership activities range from demonstrations and presentations (the most common) through to sustained mentoring programs and, in some instances, collaborative research. The program encourages flexibility in the kinds of relationships established and includes partnerships supported by face-to-face interaction and electronic communication. Communicating at a distance has assisted the involvement of rural and remote students and teachers. The Scientists in Schools website showcases many examples of projects, with the following examples involving rural schools:

- Rolland Plains Upper Public School, New South Wales:  
[www.scientistsinschools.edu.au/showcase/parker-rowland.htm](http://www.scientistsinschools.edu.au/showcase/parker-rowland.htm)
- Hamilton Island State School, Queensland:  
[www.scientistsinschools.edu.au/showcase/lockwood-alexandridis.htm](http://www.scientistsinschools.edu.au/showcase/lockwood-alexandridis.htm)
- St Joseph's School, Barcaldine, Queensland:  
[www.scientistsinschools.edu.au/showcase/specogna-leemon.htm](http://www.scientistsinschools.edu.au/showcase/specogna-leemon.htm)

External evaluation of the pilot program, undertaken by Howitt and Rennie (2008) from Curtin University of Technology, was positive in its initial findings and recommended the program continue. Although 500 partnerships had been established by the end of 2007, many were not planned to begin until 2008, making follow-up evaluation important in the future. One aspect identified as most promising was the flexibility of the partnership arrangements, allowing projects to be initiated at different levels of schooling, in diverse disciplines, focused on issues distinctive to particular communities and assisting the involvement of rural schools. The evaluation considered that, even in such a short time, the students had benefited from an increased understanding of science and a greater awareness of science-related careers. The researchers did note, however, that while approximately 56 per cent of the partnerships were established in primary schools, this was less than desirable given that the ratio of primary to secondary schools in Australia is more than 4:1. This raises questions not only about how 'early' an intervention could or should take place, but also about the need to access larger number of primary schools if the intervention is to be equitable across age groups.

Alternatively, interventions of this kind can be designed and implemented by universities.

**INTERVENTION: *Robotics Peer Mentoring Program (AUSTRALIA)***

Following a pilot study in 2003, the University of South Australia was awarded a grant from the Premier's Science and Research Council to establish and implement the Robotics Peer Mentoring Program in 2004–06, in collaboration with Flinders University of South Australia, Adelaide University, TafeSA, the Australian Science and Mathematics School and eLabtronics. With strong industry support and interest, an important objective of the program was to develop school students' level of skills in electronics and in the science and mathematics used in electronic applications, as well as heightening their interest in electronics careers. The program continued in 2007 with the assistance of a grant from the Australian School Innovation in Science, Technology and Mathematics program and is currently funded until 2010 by the South Australian Department of Trade and Economic Development and the federal Department of Education, Employment and Workplace Relations in partnership with the Northern Advanced Manufacturing Industry Group.

The program is dynamic and has developed continuously in response to funding incentives and the interests and needs of its multiple industry, university and school stakeholders. The program uses undergraduate students to work as peer mentors with secondary students and their teachers. The program provides Year 9 and 10 students with a core robotics program and progresses to a range of engineering curriculum activities (<http://asistm.gotdns.org/~asistm/>) and industry projects (for example, <http://eieproject.serveftp.org/~proj2007h/documents/docs/>)

BlimpOnHorizon.pdf). At the highest level, it delivers a South Australian Certificate of Education stage 1 engineering unit at Year 10. (The certificate is undertaken mainly in the final two years of secondary school—Years 11 and 12—but also offers some courses in Year 10.)

The 2007 evaluation report indicates that the program as a whole has been very successful, partly due to the extended time the program has been running in some of the schools. In 2007 alone, 637 students were involved in the program, 504 students in the core robotics program, 33 in the industry projects and approximately 100 students in the curriculum projects under the Australian School Innovation in Science, Technology and Mathematics grant. The program is committed to extension into regional and rural areas and in 2007 included six country schools in its outreach to a total of 30 schools. The use of video-conferencing is being developed to support the regional development of the project.

Multiple benefits of the program have been recorded. In some schools there have been significant increases in science and mathematics enrolments in Years 11 and 12 and an increase in students considering engineering or an electrical trade as a career. While it has not been possible to track the post-school pathways of all students, records show that of the students engaged in one of the advanced industry projects (total 30), two-thirds have chosen engineering or a related area of study at university or TAFE or have entered a related trade. Development of curriculum resources and teacher professional development are additional important outcomes. Under the Australian Technology Networks Engineering program, funded by the Collaboration and Structural Reform fund, a program of Engineering in Schools has commenced in 15 schools across five states. A number of the elements of this program are based on the work of the Robotics Peer Mentoring Program.

While still focused on a national priority area, Deadly Maths Consortium has been developed specifically to build mathematics education capacity in Indigenous communities (see also discussion below on targeting particular under-represented groups).

**INTERVENTION: *Deadly Maths Consortium* (AUSTRALIA)**

Since 2001, academic staff from the Queensland University of Technology and Griffith University, have established the Deadly Maths research group and have travelled to 33 rural communities and Indigenous schools to help Indigenous students enjoy and learn mathematics. Starting from an initial aim to increase Indigenous students' knowledge of basic mathematics (for example, numbers and operations up to three digits), Deadly Maths programs have expanded to include middle and senior high school mathematics and vocational mathematics, with the aim of increasing Indigenous participation in tertiary education and employment.

In collaboration with other staff members from the Australian Catholic University and Queensland University of Technology, Deadly Maths has constructed a web presence under the title *Building Mathematics Education Capacity*. The website contains reports and resources relating to projects undertaken across Queensland, mainly in Indigenous communities, to enhance mathematics education. Projects include numerous student learning projects targeting Years R–12, professional learning for Indigenous teacher aides and for Indigenous parents, and mathematics learning for vocational students, as well as associated projects.

With respect to increasing Indigenous students' attendance and success at university, Deadly Maths has encouraged Indigenous teacher aides to enrol in teacher-training courses and provided frameworks for learning that enable Indigenous school students to undertake university-entrance mathematics subjects in Years 11 and 12. Also, through its Deadly Degrees program, Deadly Maths is employing Indigenous undergraduates as research assistants, encouraging Indigenous graduates to enrol in higher degrees, and supporting non-Indigenous staff of Indigenous schools to study their interactions with their Indigenous students through undertaking higher degrees.

### *Targeting particular under-represented groups*

A further group of interventions designed to raise students' academic achievement targets particular under-represented groups. In Australia, several of these are focused (directly and indirectly) on improving the participation of Indigenous students in higher education. A recent review of such interventions (Doyle & Hill 2007) outlined the following list of possibilities, which draw attention to the need for cultural and contextual relevance and capability appropriateness:

- *Holistic schooling approach*: the adoption of a holistic approach to schooling, which delivers curriculum that relates students' learning to their life experience. Such schooling approaches incorporate program elements that address the full range of student needs (including their basic material needs, travel to and from school, health and nutrition, and personal and learning support requirements). They provide a highly supportive school environment and engage students' parents, family and community in the design and delivery of day-to-day schooling.
- *Tailored curriculum*: the development and dissemination of curriculum that is tailored to the needs of Indigenous students and teaching tools to support Indigenous student learning.
- *Appropriate staff training*: the development and delivery of pre- and in-service training for principals, teachers and teaching support staff that includes skills relating to the design and delivery of curricula as well as the establishment and management of supportive teacher-student relationships.
- *Holistic student support*: the delivery of school- and non-school-based programs that specifically seek to meet students' individual needs by assisting them to access and engage in school, including material, personal and learning support requirements, and to promote parental and family support for student education and learning.
- *Student and parental engagement*: the delivery of school- and non-school-based programs that specifically seek to engage students with school and learning. They encourage school attendance, attachment and retention by promoting parental and family support for student education, connecting parents with school and helping parents to support their children to learn.
- *Intensive learning support*: school- and non-school-based programs that seek to provide intensive learning support including remedial literacy and numeracy programs, general curriculum-based learning support or tutoring, extension learning and homework support.
- *School-based vocational training and development*: includes career planning, school-based apprenticeships and TAFE programs, etc.
- *Scholarships*: the provision of scholarships to support Indigenous student access to education.

Below are some examples that illustrate some of these approaches. From the school sector there are interventions that involve whole-school change (for example, the Cherbourg School) and the development of a culturally relevant school curriculum, especially one that involves Aboriginal perspectives across it. From the higher education sector, the most significant intervention appears to be the ongoing development of Indigenous education centres in Australian universities. (See also the New Zealand case for a national approach to improving outcomes for Māori students.)

*The Cherbourg School.* Under the leadership of Chris Sarra (2007), the Cherbourg School developed a 'Strong and Smart' philosophy, which challenges 'teachers and children who were colluding with and reinforcing the notion that Aboriginal children were to be feared or despised, or at best, helpless and pitiable'. In the recent successes of the Cherbourg School, Sarra emphasises the importance of including Aboriginal studies as an integral part of curriculum programming and hence of ensuring spaces for valuing Aboriginal Identity.

*Aboriginal Perspectives across the Curriculum.* Many state education departments have developed 'Aboriginal Perspectives across the Curriculum' resources. (See the *Racism No Way* website for a review of some of these: [www.racismnoway.com.au/strategies/programs/sa/index-Training.html](http://www.racismnoway.com.au/strategies/programs/sa/index-Training.html))

*Indigenous education centres in Australian universities.* Indigenous education centres in Australian universities are important to Aboriginal communities and juggle their obligations and priorities for:

- including the urgent need to sustain Indigenous knowledges inter-generationally (against the colonial history of the university)
- countering the under-representation of Aboriginal peoples attending university in Australia
- sustaining sites for cultural translation, in both directions
- shifting the work of such centres from learning and student support across the university to sites for teaching, research, and building community engagement and community capacity.

Of special interest are the ways in which Indigenous education centres contribute to teacher training. Such involvement contributes to the formation of teachers and hence to the possibilities of improved curriculum and pedagogy for Indigenous students. A model of this work has been described by Gulsen et al. (2008), in which they outline a 'resistance model' of teaching (Education for Social Justice Research Group 1994) in a Bachelor of Education program at the University of South Australia involving 'Reconciling History and Education (Raising Consciousness)', 'Reconciling Self (Making Contact)', 'Reconciling Australia [Taking Action]'.

#### *Targeting pedagogy: how we think about teaching*

In recent years there has been increased research interest in 'school effectiveness' research, which emphasises the importance of teaching quality as one of the keys to improving student learning outcomes (Hattie 2003). In some cases, the rhetoric has shifted from 'teachers can make a significant difference' or 'teachers are the main difference' to 'teachers are *the* difference' (Gale 2006).

School systems (state departments of education and the Catholic education system) in Australia all have in place policies that advocate reform of mainstream curriculum and pedagogy to improve the

educational achievement of disadvantaged groups. There are a number of prominent case studies in Australia that focus on pedagogical innovation which are worthy of mention, including Productive Pedagogies (Queensland), Quality Teaching (New South Wales), Principles of Learning and Teaching (Victoria) and the Redesigning Pedagogies in the North Project (South Australia).

The Queensland School Reform Longitudinal Study (QSRLS), from which Productive Pedagogies is derived, began as a government-funded evaluation of Queensland's foray into school-based management. However, the University of Queensland research team took the view that the most significant reform in schools was related to what happened in classrooms, specifically pedagogy. Early in their observations of and interviews with teachers:

It became clear that a shift in focus was needed (teachers had rated intellectual demand as their lowest priority and assessment tasks were usually low in cognitive demand, not connected to the world, and not challenging intellectually), a shift towards the sustained higher-order thinking needed for future success. The QSRLS team coined the term 'Productive Pedagogies' for the teaching approaches that were needed to drive that shift.

(Department of Education and the Arts 2004: 3). The model of Productive Pedagogies was informed by a meta-analysis of research conducted by Newman and Associates in the United States that argues for 'authentic pedagogy'. This research reported a demonstrable improvement in educational outcomes that was directly related to authentic pedagogy and, importantly, also 'to have similar effects on students from a range of different social backgrounds'. The analysis strongly suggested that 'authentic pedagogy offers a means to gain both increased school effectiveness and equity' (Ladwig 2007: 59).

From their analysis of the literature and their observations of teachers, the QSRLS team identified 24 elements of good teaching that were then aggregated under four dimensions:

- *Recognition of difference*: Teachers use these pedagogies to ensure that students know about and value a range of cultures, create positive human relationships, respect individuals, and help to create a sense of community.
- *Connectedness*: Teachers use these pedagogies to ensure that students engage with real, practical or hypothetical problems which connect to the world beyond the classroom, which are not restricted by subject boundaries and which are linked to their prior knowledge.
- *Intellectual quality*: Teachers use these pedagogies to ensure that students manipulate information and ideas in ways that transform their meaning and implications, understand that knowledge is not a fixed body of information, and can coherently communicate ideas, concepts, arguments and explanations with rich detail.
- *Supportive classroom environment*: Teachers use these pedagogies to ensure that students influence the nature of the activities they undertake, engage seriously in their study, regulate their behaviour, and know of the explicit criteria and high expectations of what they are to achieve.

Productive Pedagogies is now embedded in Queensland's education policy and has also been taken up (with some modifications) by New South Wales under the nomenclature of Quality Teaching. To a lesser extent, Productive Pedagogies has also influenced the policy positions of other state departments of education (for example, Victoria's Principles of Learning and Teaching). With such wide take-up, it has the potential to have a significant impact on the practice of a large number of Australian teachers.

To be effective, pedagogical reform needs to be taken up by teachers themselves. A recent Linkage project funded by the Australian Research Council provides a model of an intervention at a more local level.

**INTERVENTION: *Redesigning Pedagogies in the North* (AUSTRALIA)**

Redesigning Pedagogies in the North (University of South Australia) focused on redesigning pedagogy in schools as a means of realising the aspirations for middle schooling. The focus has been on striking a balance between the lifeworld knowledge and practice that diverse students bring to school and the knowledge, skills and understandings necessary for success in mainstream schooling. The pedagogical challenge is about finding ways to integrate lifeworld and subject discipline knowledges in ways that do not trivialise either.

The project recommends the following principles for redesigning pedagogy:

- Develop and sustain a professional learning community that enables teacher inquiry into redesigning curriculum and pedagogy in the middle years. ('Professional learning community' in this case means a group of willing teachers who meet regularly to discuss, share ideas and plan projects that involve designing curriculum units or working on developing pedagogical practice.)
- Support teachers to research their students as people and as learners. (Knowing the students as learners is essential, but students are learners in and outside of school. The aim is researching your students' lifeworlds as a resource for planning curriculum/pedagogy.)
- Support teachers to be involved in projects that aim for substantial improvements in the quality and quantity of student schoolwork. (As a starting point, use these curriculum design principles: (a) set meaningful, challenging learning task(s); (b) establish 'strong' connection to student lifeworlds; (c) set performative expectations for student learning.)
- Provide a range of resources (including planning time, critical friends, curriculum materials, expertise) to assist in the success of research projects and curriculum work.

*Targeting the middle years: how we think about schooling*

One final intervention involves schools and systems rethinking what schooling means. In Australia, this has found expression in a movement known as 'middle schooling'. Middle schooling is a key site for improving achievement as a significant precursor to improving higher education outcomes for students from disadvantaged backgrounds. It can be understood as a space in which 'good' practice for schooling in the middle years is being debated, experimented and researched.

Middle schooling is often understood in terms of a philosophy about schooling that can be characterised by certain features:

- separation of the middle years from the rest of the school

- teaching teams and sub-school groups to enhance teacher–student relationships
- an integrated, negotiated curriculum
- ‘authentic assessment’ of ‘rich’ learning tasks.

A continuum of ‘weak’ to ‘strong’ approaches is evident including:

- adopting some middle schooling philosophy within conventional schools
- sub-schools inside conventional schools
- dedicated middle schools
- alternative schools.

Luke et al. (2003) argue that middle schooling is not a passing fad but ‘a sustainable, profound set of educational ideas and reforms’ with ‘unfinished business’ (p. 4), including ‘a need to go beyond the conceptualisation of middle schooling that is currently dominant in both policy and practice’ (p. 2).

In Australia, we can map the middle schooling movement in various literatures, including: government reports (Eyers et al. 1992; Luke et al. 2003; Schools Council 1993); reports from professional associations such as the Australian Curriculum Studies Association (Cormack 1996; Cumming 1996; National Advisory Committee for the Student Alienation During the Middle Years of Schooling Project 1996); and a range of academic writing (Carrington 2006; Thomson 2002; Smyth & Hattam 2004; Smyth & McInerney 2007; Smyth et al. 2003).

Various factors have been emphasised as warrants for middle schooling reforms including:

- that the middle years have largely been ‘forgotten’ in past reform agendas
- the significance of these years in dramatically falling retention rates, with increasing youth alienation (Smyth et al. 2003)
- the need to improve the transition from primary to secondary school (Hill & Crevola 1997); and the emergence of new literacies and media-saturated youth identities (Sefton-Green 1998).

Underlying all of these factors is the desire to improve academic achievement of those groups who have traditionally not been served well by schooling. Advocates of middle schooling argue that the need for innovation is especially urgent in the middle years, when many students begin to self-select out of schooling—partly because the curriculum becomes more compartmentalised and content-driven, and assessment more competitive as well as disconnected from many students’ lives (even those who ‘win’ academically). Reinvigorating curriculum and pedagogy in the middle years could (re)engage students in schooling and hence go some way towards addressing issues such as declining retention rates, poor completion rates and weakened social connectivity.



*What do we know about student achievement? What works and what doesn't?*

Existing middle schooling philosophy advocates changing school structures and culture as the key condition for improvements to pedagogy and achievement. It focuses on an ethics of care and provision of socially supportive and integrated learning environments. Research suggests this to be valid up to a point, but without necessarily translating into changes in curriculum and pedagogy that can yield improvements in student learning (Lipsitz et al. 1997). Recent data, more rigorous and systemic, does not demonstrate significant improvements in achievement levels for major targeted groups (Teese & Polesel 2003).

Improved student achievement is noted when whole school approaches are enacted and supported by leadership with a clear learning philosophy built around a strong pedagogic and curricular focus. Critics suggest that dominant models for middle schooling 'innovation' suffer from low expectations and watered-down curriculum (Haycock & Ames 2000), and from assuming that improved student learning can emerge merely from changing structures and culture—that is, without explicit focus on viable pedagogical change, which simply evolves from supportive environments.

In contrast, Luke et al. (2003: 39) map key pedagogical practices that the literature suggests are likely to foster high levels of student engagement:

- goal-oriented teaching where students are clear about the goals of instruction
- real-world connections in lessons to community problems and issues
- support for student autonomy and choice in lesson design
- strategic instruction designed to foster metacognitive skills
- collaboration and small group projects
- giving praise and rewards for successful engagement in literacy practice
- ongoing evaluation of students' performance that includes both external and student-centred evaluation (for example, tests and task/project exhibitions).

Such a pedagogical approach moves beyond a psychology of adolescence and 'the deficit model of young people' (Dimitriadis & Weis 2001: 225), to a set of practices that engages young people's lifeworlds and the concerns of the communities in which they live. The meta-analysis by Luke et al. (2003) highlights the need for a middle schooling pedagogy that explicitly addresses the more difficult economic and social conditions that are emerging. Research suggests that such attention to context is part and parcel of pedagogy and curriculum that validates the culture and experience of students' families as worthy of inquiry (Smith 2002).

The need for more work in this area is made all the more imperative by early school leaving research identifying the middle years as a key site for reform to improve school retention rates (Holden & Dwyer 1992; Marks & Fleming 1999; Smyth & Hattam 2004; Smyth et al. 2000).

### *What about challenging the higher education curriculum?*

Numerous studies have demonstrated that school attainment is closely correlated to a student's socioeconomic status. Whatever the theoretical framing of the research, time and again school outcomes have been shown to reflect socioeconomic status, with the gap between high and low socioeconomic students beginning in the earliest years and generally widening as students proceed through school (Collins et al. 2000; Smyth et al. 2000; Forsyth & Furlong 2001; Zappala & Considine 2001; Birrell et al. 2002; Fullarton 2002; Thomson 2002; Teese & Polesel 2003; Alloway et al. 2004; Brennan 2005b; Di Bartolo 2005; Dobson & Skuja 2005; Lupton 2005; Argy 2006; Cardak & Ryan 2006; Crafter et al. 2006; Marks 2006; McGaw 2006; Reay 2006; Bardsley 2007).

When selection to higher education is based on relative merit, young people who have been able to accumulate educational advantage all their life—from family, school and community—will generally perform better in a ranking system. However once students from low socioeconomic status, rural and isolated backgrounds enrol at university their performance is usually strong. As an example, at the University of South Australia retention and success rates of such students are close to or better than those for other students. Initial data analysis at The University of South Australia supports other Australian research that suggests a significant value-adding effect for students admitted from disadvantaged backgrounds, often with low university entrance scores, who perform well when they do gain admittance (Dobson & Skuja 2005; Tickell & Smyrnios 2005; Win & Miller 2005).

These interventions assume that it is possible to improve equity in higher education through improving the achievement at school of those groups that have been traditionally under-represented. The interventions variously involve:

- leaving the school curriculum and credentialling arrangements intact and (i) working with those students who show potential but are underperforming and (ii) working to attract students to specific course offerings such as maths and science
- working to transform the credentialling arrangements at the post-compulsory level to alleviate the sorting and selecting distortions on secondary schools
- working to transform the mainstream school curriculum and pedagogical practices up to post-compulsory schooling in ways that undermine the reproductive functioning of schooling.

### **Aspiration**

Early interventions in schooling that seek to increase students' participation in higher education, particularly students from under-represented groups, often have a focus on raising student aspirations. Interventions vary in how they approach this task, characterised below as the *exposé*, the *taster* and the *combo*. As evident in other sections, interventions are rarely of just one kind, even the ones typecast below. Similarly, interventions directed at raising student aspirations are rarely focused on this aim alone. Often other conditions of university entry, particularly 'achievement' (discussed above), are also incorporated. Separating out these intentions and identifying those that dominate particular interventions are useful for analytical purposes. The review below also draws attention to the ways in which these interventions interrelate.

*The exposé: aspiration inspired by knowledge*

The classic intervention strategy aimed at raising aspirations for higher education is to expose students to information about universities and their courses as well as about vocations that require a university qualification. The assumption is that students cannot aspire to things they know nothing or very little about. A related assumption is that exposure to this knowledge will generate aspirations for higher education. Interventions can range from employing career counsellors, career nights or an expo in schools to more elaborate programs such as Up for It (described below), which reward participants with various benefits, in a similar vein to consumer loyalty programs (see also Future to Discover, in accessibility section above). At their worst such interventions are little more than marketing exercises for specific universities. At their best they are educative programs designed to encourage students to believe in the possibility and benefits of higher education more generally.

**INTERVENTION: *Up for It* (UNITED KINGDOM)**

Up for It is a membership scheme run by the University of Portsmouth for 11- to 16-year-olds. It aims to inform young people from under-represented groups about further and higher education in a fun and informative manner to increase awareness of the range of course and career opportunities. Up for It is a web-based relationship-building scheme that incrementally increases awareness, understanding and enthusiasm for the opportunities that higher education offers. It was launched in January 2002 and has seen 5000 members join from both the local area and other areas of the United Kingdom. It is funded by the University of Portsmouth and is free to join but is not an institutional recruitment activity. Information is provided about the full range of post-secondary opportunities available.

The scheme has a dedicated interactive website with information, games and competitions. Students can submit their own contributions to share with other members and visitors to the site.

Members sign up online and are provided with a membership card that can be used in the scheme's 12 commercial partners to obtain exclusive offers and discounts. They are also sent a quarterly magazine that features articles on courses and careers along with student and course profiles.

The Schools Liaison team designs special workshops on a variety of subjects aimed to meet the national curriculum. The Up for It team also attends careers days, parent evenings and community events. Special Up for It presentations are provided to school assemblies. They organise academic enrichment activities and course and career information.

While no formal evaluation of the scheme was able to be identified, the scheme has received much support from the Local Education Authority, schools, careers advisers and community groups. In April 2003 the scheme won a gold award in the Widening Participation category from the United Kingdom's Higher Education Information Services Trust.

[www.upforitclub.org.uk/aboutus/](http://www.upforitclub.org.uk/aboutus/)

Increasingly, interventions aimed at exposing students to information about higher education are going online. While Up for It has a web presence as part of the intervention, Talk about Uni (described below) is almost entirely offered via the web, although related outreach programs are in planning (aimed at earlier year levels). In this environment, information about higher education can be accessed by and have impact on students from a range of year levels, not simply those at the point of transition to university (Years 11 and 12). It also provides access to and for students' teachers, parents, families and friends, who are seen to play a significant role in helping to form student aspirations.

**INTERVENTION: *Talk about Uni* (AUSTRALIA)**

The University of Melbourne has developed an accessible and extraordinarily comprehensive online resource for students, parents, carers and teachers. The resource aims to encourage high school students to consider university as a post-school option and, more importantly, to believe in the possibility and benefits of going to university.

Based on the philosophy that students take advice from a range of significant people in their lives, the resources are designed to develop links with parents, families, teachers and community groups. Notable are the many links to a range of government, educational and equity sites and the encouragement for prospective students to think carefully about which program and which university might best suit their particular interests and needs. The Victorian context is well covered in the information, but there are excellent generic resources related to applying for university entrance, accessing special entry schemes, understanding Youth Allowance, finding accommodation and managing finances.

For parents, and in particular for those unfamiliar with higher education, there is also information about university life, teaching, learning and assessment issues and advice on how parents can best assist and encourage students. Inspirational case studies of current university students from disadvantaged groups relate attitude-changing events and help to promote the belief that university study is a more accessible and realistic choice than many young people believe.

Information-rich resources are useful for engaging students who are already considering university as an option. On their own, however, they are unlikely to attract those students who have rejected university as an option. On the agenda now for many universities is the implementation of intervention programs that will target younger students from traditionally under-represented groups.

Designed to demystify university and raise aspirations, a school outreach program building on the Talk about Uni concept is in the planning stages at the University of Melbourne. A pilot program targeting Year 9 and 10 students in disadvantaged schools will include school visits, workshops and other activities designed to increase students' knowledge about study at university. It is anticipated that both metropolitan and rural schools will participate. Teachers will collaborate in the planning and the pilot project will be carefully evaluated to inform future programs.

*The taster: aspiration inspired by experience*

A second and related intervention aimed at building students' aspirations provides a small taste or sample of what it is like to attend university. The emphasis is on experiences with high levels of activity and interest. Experiential knowledge gained from these interventions is often idiosyncratic, even though efforts are made to provide a snapshot of the full range of university student activity in intensified periods. The experiential nature of these encounters also tends to emphasise university as a destination.

**INTERVENTION: *Aim for Adelaide Program* (AUSTRALIA)**

A particular focus at the University of Adelaide for 2007 and 2008 was the expansion of strategies to raise the educational aspirations of students from low SES backgrounds. This has involved the launch of the Aim for Adelaide program, which invites students from Years 9 and 10 from more than 30 educationally disadvantaged 'Fairway' schools onto campus for university 'taster days'. The students participate in hands-on inspirational activities within academic faculties and have the opportunity to talk with current students over a BBQ lunch. The Aim for Adelaide program also has a second phase where Year 11 students from the same school are invited back the following year to talk with University of Adelaide engineering students about their final year group projects.

Evaluation of the program shows that students most appreciate having a look at the university's features and the subjects offered, suggesting that familiarisation with the environment and the

receipt of up-to-date information about academic programs is an important outcome of such experiences. The evaluation shows a slight increase (from 74 per cent to 77 per cent) in the percentage of students who were considering studying at university after participation in the program.

Such small increases in students aspiring to attend university raise the question of whether these kinds of taster interventions are simply 'preaching to the converted'. As well, there is the more general question of the value of these interventions, irrespective of the participants. From their comparison of urban and rural secondary school students, James et al. note that while most 'agree that they think they would have a good time at university ... very few consider this an important factor in determining their futures' (1999: 58).

This is not the same as saying that the absence of experiential knowledge about higher education is not important in making decisions about attending university. For instance, some regional secondary school students have expressed 'a sense of fear and of apprehension in taking up their lives in unfamiliar circumstances, in untried locations' (Alloway et al. 2004: 249) as barriers to their participation in higher education. From this perspective, taster interventions perform an important role for school students from groups under-represented in universities.

A variation of the taster intervention involves school students in more sustained and meaningful university activities. While they retain a representative character, the activities are self-contained and more connected to students' current experiences. The Student Action Research for University Access (SARUA) is a good example of this more substantive taste of higher education.

**INTERVENTION: *Student Action Research for University Access (SARUA) (AUSTRALIA)***

Student Action Research for University Access was initiated in 1992 by the Faculty of Education at the Queensland University of Technology to increase the participation of under-represented groups in higher education. It has also been implemented by Curtin University in Western Australia.

SARUA works collaboratively with a group of schools in low socioeconomic areas with low rates of transition to university. It has worked with nearly 30 schools since its inception, on a range of 'students as researchers' projects. Two or three projects are conducted a year. Student researchers are encouraged to examine their own school communities to identify potential barriers to tertiary education and to develop strategies to overcome these barriers.

Students, typically in Year 10 and often at risk of disengagement with school, work with teachers and staff from the university, using action research methods to investigate factors preventing students from participating in higher education. They plan, conduct and evaluate activities needed to bridge the gap between their schools and higher education. A typical project involves:

- training and planning: two- to three-day workshop on the university campus
- research and/or action conducted in the schools through weekly meetings between students and their supervisory teachers
- reflection and documentation, normally conducted over two days at the university.

Examples of projects conducted include the creation of an Indigenous students' room at one school; the establishment of a homework centre at another (and later an investigation into its use); an investigation into the relevance and importance of school awards; the establishment of Year 12 or senior school study centres; and the production of an award-winning DVD to assist secondary students' understanding of university options and to encourage university participation.

SARUA provides opportunities for marginalised students to spend time on a university campus as a researcher, to develop enhanced academic and critical reflection skills, and to gain increased knowledge about university as a viable option (Bland 2008). Participating students are expected to disseminate information about university to other students in the school with the aim of transforming perceptions of the wider school population.

The intervention is a longstanding, though small, project conducted from an academic department as a participatory action research project. No data on outcomes appears to be maintained but a number of papers have been presented at conferences and published in journals.

### *The combo: aspiration inspired within collaborative networks*

A third intervention aimed at raising students' aspirations for participation in higher education is 'the combo'. Combo interventions incorporate elements of both the exposé and the taster, providing students with knowledge of careers, courses and experiences available through higher education. They frequently include a focus on raising students' levels of academic achievement as well. These interventions also combine the efforts of different interest groups in collaborative networks: of universities, schools, communities, local councils, governments, industry, business and so on. Even in regional areas where distance between groups can be substantial, there is evidence of 'institutional networking ... [which operates] to support student expectations and aspirations' (Alloway et al. 2004: 227) for further education. Given these networks, the combo tends to be an intervention of scale and frequently finds its way into the mainstream activities of schools. The University Orientation Program provides a localised example.

#### **INTERVENTION: University Orientation Program (AUSTRALIA)**

The University Orientation Program is offered by the University of South Australia to secondary schools in the highly disadvantaged northern suburbs of Adelaide as part of the university's Northern Adelaide Partnerships. The program evolved from a trial Tertiary Preparation Program developed in 2003 by the school counsellor at what is probably South Australia's most disadvantaged secondary school. A semester-length Year 11 subject was developed under the personal development curriculum framework of the South Australian Certificate of Education. Students learned life skills, with a focus on goal setting in relation to further education. It addressed obstacles experienced by low SES students when making decisions about tertiary study, including advice on careers available, financial, health and welfare support, and what to expect at university. A key component was the involvement of mentors from the university who provided support in the classroom and assistance with campus visits.

With the support of a grant from the federal government's Sustainable Regions funding, this trial was expanded in 2004 to become the University Orientation Program, coordinated by UniSA's northern Adelaide campus and offered to Year 11 students from all secondary schools in the region. Presented over several weeks, the program combines much of the original Tertiary Preparation Program with a series of on-campus lecture and tutorial sessions in a range of disciplines to introduce students to university study. Sessions are taken by academic staff and supported by services staff and student mentors from the University of South Australia who assist students with a number of reflective activities and a small research project for presentation.

Numbers participating have varied between 120 and 160 students a year, with between eight and 14 schools participating for between six and nine weeks, split over two terms. Some schools have chosen to incorporate the program into their curricula as a Year 11 subject, adding extra assessment requirements, while others have kept it as a component of work experience or career planning. Increasingly the trend has been for students to participate at Year 10 level as part of their planning for senior secondary and post-school pathways.

During 2008 the university worked with the state government to incorporate the program into its First Generation School to Work Innovation Program, as part of its planning for the new senior school certificate. Targeting the same group of schools, the revised program is being integrated into the Personal Learning Plan component of the future certificate, assisting first-generation Year 10 students to plan a pathway to future university study.

The response from the schools and participants has been overwhelmingly positive. An evaluation of the first group of 2008 participants found that, after completing the program, 65 per cent of respondents reported that they were more likely to go to university; 35 per cent remained the same or were unsure; and only one student was less likely to go.

Nearly half of the participants stated that initially university seemed inaccessible to them, primarily because of the cost, study expectations ('too hard') or family pressures. After completing this program many gained information that had changed this perception; 62 per cent of responses indicated a positive change of attitude towards attending university.

There is a strong belief in the region that students need the reinforcement of programs such as this to provide them with knowledge about university and the confidence that higher education is an option for them. The collaborative nature of the program, with the schools and the university working together to best meet the needs of the students, and strong support within the schools and from the community have ensured its viability.

Aimhigher, another example of a combo intervention primarily aimed at raising students' aspirations, is the major initiative for widening participation in England, funded by the Higher Education Funding Council for England (HEFCE). The majority of interventions identified in the United Kingdom come under this umbrella, which is discussed more fully in the following section on national interventions. In brief, Aimhigher functions through collaborations between universities, schools, colleges, local councils and communities. The principal targets of Aimhigher are 14- to 19-year-olds from social groupings that are under-represented in higher education, including those whose parents did not attend higher education (although the scope of the initiative is now expanding to include mature-age and vocational access). Funded projects can involve mentoring schemes, 'taster' visits to universities, outreach programs within schools and sixth form colleges, master classes and pre-entry support and information strategies (Higher Education Funding Council for England 2008). Progression Partnerships is an example of an Aimhigher intervention with aspirational intentions.

**INTERVENTION: *Progression Partnerships* (UNITED KINGDOM)**

Within the framework of Aimhigher, Nottingham Trent University has developed a Progression Partnerships model to deliver and develop the university's Widening Participation strategy. Based on a 'continual presence strategy' (Wheatcroft & Snodin 2004), the concept of university studies is progressively introduced to primary school students and is continued through well-defined routes to university entry. The program, which began in January 1996, received HEFCE funding until July 1999. Since then funding has been through the 'postcode premium', which has substantially increased the funding available. Progression Partnerships is based in the Faculty of Education under the responsibility of the Dean and from 2002 has been coordinated by a manager and five staff. The model has multiple components that define its shape as continuous and collaborative:

***Schools and Colleges Work*** aims to raise awareness of the opportunities higher education can offer both in terms of personal development and career prospects. A standard program of events is offered each year to primary schools (24), secondary schools (48) and sixth form colleges (51) in the region (figures for 2004). University-initiated activities are negotiated according to student needs, and a program is developed based around talks, displays, activities and university visits for primary school students. There are more structured activities for secondary students, including

workshops, career sessions, parent sessions, exam preparation and revision sessions, and a summer school for students in Year 11. These sessions culminate in Years 12 and 13 with more formal workshops on admissions, student finances and support and the option of a further summer school. The aim is that every few weeks there will be an activity in a particular school that has a connection with the university, thereby contributing to a culture change in which aspirations and achievement are raised and motivation and progression rates improved (Wheatcroft & Snodin 2004).

Most activities are assisted by undergraduates who provide role models and mentoring for the younger students, supporting secondary students to raise their aspirations and achievement levels.

The **Admissions Compact Scheme** is a supported entry route that guarantees students an offer or interview for a place at their local university if they are predicted to achieve the necessary grades. Students' confidence is boosted significantly due to the security of knowing they cannot be rejected if they meet the criteria. The Admissions Compact Scheme has developed significantly over the course of the program, from 87 students applying (46 enrolled) in 1998 to 427 in 2004 (257 enrolled). Secondary students receive financial advice and support, selection and enrolment advice and information sessions that include the students' families. They may also use university resources (such as the library) in their final high school year, a strategy that further eases the transition for those who have no family background in higher education. The scheme offers a complete package of support, including a non-repayable bursary for students who take on the role of 'ambassador' or mentor for the scheme through activities such as:

- **Students in Classrooms:** 'compact' students work in a variety of roles in local schools by mentoring and/or helping to develop other Aimhigher projects
- **Active in Communities Project:** staff and students work together within the community on various projects that further enhance the continual presence aspect of the program
- **Information and Guidance:** events that are held regularly, and aimed at pre- and post-16 year-olds, their parents and families, and school staff.

A report published in 2002 claims that this initiative 'has clearly gone from strength to strength', demonstrating 'a very significant increase in applications to university from its target schools' (Woodrow et al. 2002: 132). One development since the program's inception has been to strengthen the university's role in 'increasing attainment as well as awareness' (Woodrow et al. 2002: 133). This has been achieved in a number of ways, including strengthening links with student support services, emphasising attainment in schools and increasing pre-entry support. Within the university itself the trend has been to spread widening participation activities across the faculties, embedding the concept into the general university culture, and so drawing broad support from within.

The project team believes that projects such as Progression Partnerships must be collaborative in order to succeed, and partnerships are being developed with a large further education institution. This institution is working in collaboration with the University to offer widening participation activities and services to disadvantaged students who may go on to either higher education or vocational study.

This program is now seen as 'central to the university's strategic development' (Woodrow et al. 2002) and as such is subject to ongoing monitoring and evaluation.

### *Whose aspirations?*

Aspiration to participate in higher education does not necessarily preclude other aspirations. Yet a necessary condition of entry to university remains that 'the student must want to enter' (Anderson & Vervoorn 1983: 3). There are at least three reasons why people from under-represented groups might not want to do so, as follows.

### *Aspirations are constrained by what students know*



As noted above, school students do not always have access to knowledge about higher education, which might inform their aspirations. This is particularly the case for student groups who are under-represented at university. The expectations of schools and teachers play an important role in building students' aspirations, including the range of subjects offered, the counselling advice provided, the resources available and the academic expectations and outcomes (Teese & Polesel 2003; Pugsley 2004; Reay et al. 2005; Tranter 2005; Edwards 2007).

Some suggest that lower aspirations for higher education among Indigenous students might be 'associated with the career strategies used by schools, which sometimes rely on students approaching the career advisor for advice' (CSHE 2008: 49). The same could be said of the experience of students from low SES backgrounds. For example, in the James et al. study, 'only 44 per cent of lower SES students believed their teachers were encouraging them to think of higher education, compared with 58 per cent of higher SES students' (1999: 61). Other schools and teachers, however, make it their business to 'transport students into different contexts as a deliberate strategy for expanding, as well as supporting, student visions of how their lives might evolve ... allowing them the opportunity to re-vision their futures, based on fuller understandings of the kinds of lives that were possible' (Alloway et al. 2004: 227).

The influence of family expectations on the aspirations of young people from low socioeconomic status, rural and Indigenous backgrounds is also critical, perhaps even stronger than class (Maras 2007: 70). Students whose parents have been to university are far more likely to consider a university pathway than those whose parents have no experience of higher education (Western et al. 1998; Birrell et al. 2000; Gayle et al. 2002; Alloway et al. 2004; Beavis et al. 2004; Watt et al. 2004; Reay et al. 2005). According to Watson, '[Widening participation] is about parental expectations' (2006: 8; emphasis original).

For students whose families have had little or no experience of higher education, university can seem an alien and impossible option (James 2002; Tranter 2003). This is borne out in a study of Australian regional and urban students and their higher education choices. Comparing low access/lower SES students with urban (high access)/higher SES students, 'the proportions of students who believe their parents want them to go on to higher education are 38 per cent and 69 per cent respectively' (James et al. 1999: 61).

It is not just a matter of knowing about higher education and what it has to offer, which one might access from a careers expo, a university open day or a dedicated website. Reay et al. (2005) describe information of this kind as 'cold' and differentially available to students according to their socioeconomic status. Further:

middle-class students not only have more hard information [cold knowledge] about universities and university courses, they also have access to hot knowledge that has a far higher currency and exchange value than the [cold] knowledge of their working-class counterparts.

(Reay et al. 2005: 157.) Hot knowledge is a kind of 'street savvy' that allows students 'to buffer rejections by investigating alternative routes to their desired outcomes ... [including] "backdoor" entry to courses' (Alloway et al. 2004: 124). For example, 'articulated pathways between TAFE colleges and universities that ... allow them to start their study at TAFE and progress to a degree

programme at a University ... [provide students with] “backdoor” entries to high-status courses for which they might not be eligible in the first instance’ (Alloway et al. 2004: 125–6).

It is significant to note that exposé interventions aimed at raising students’ aspirations for higher education typically focus on cold rather than hot knowledge. They also tend to target students in Years 11 and 12, after aspirations for attending (or not attending) higher education have largely been formed (James et al. 1999: 57).

#### *Aspirations are informed by what students value*

School students have their own reasons for aspiring or not aspiring to higher education, which are not always taken into account by early interventions and are not always the aspirations that universities ascribe to them. According to one study, school students are most attracted to university study because of their belief that it will ‘improve their chances of getting a job, and will also offer the chance of an interesting and rewarding career’ (James et al. 1999: 58). A university qualification offers ‘a competitive edge over other options’ (p. 58) in this regard. By comparison, school students seem less interested in higher ‘education for its own sake’ or because they believe they will ‘have a good time at university’ (p. 58).

On all of these measures (except one), rural and isolated students and students from low SES backgrounds are less sanguine (James et al. 1999: 59). James et al. (1999) put this down to a ‘location effect’, although it is probably more accurately explained in terms of social and cultural differences. The differences in aspirations for higher education by male and female students from rural and isolated areas is revealing of this socio-cultural dimension:

The common belief that rural communities symbolise male spaces—a belief held by boys and by girls ...—may ultimately explain why more rural girls than rural boys see their futures inscribed in tertiary studies—oftentimes outside of the communities—and more rural boys than rural girls see the inscriptions of their futures in local offerings of trades and apprenticeships.

(Alloway et al. 2004: 248.) This is particularly the case in rural areas where there is ready employment (in mining and farming, for example) (James et al. 1999: 63). In other rural areas with fewer employment prospects, particularly for girls, students’ ‘aspirations were driven by pragmatic considerations of how they could escape from what they perceived to be restrictive futures within their communities ... [for them, entry to university] represented a “ticket out of town”, without which their horizons would be severely limited’ (Alloway et al. 2004: 123).

Early interventions that reduce the problems associated with regional and isolated students to matters of ‘distance’ and those of low SES students to ‘finance’, have in view only a very small part of the picture. The research suggests that ‘the community context (the “rural culture” factor) is more influential than physical distance to a university campus’ (James et al. 1999: 62). Similarly, socio-cultural issues feature more strongly than the lack of finances in shaping low SES student aspirations.

The implication is that many early interventions need to broaden their understanding of students’ aspirations generally and for higher education specifically. Teachers of students from under-represented groups have suggested that ‘education systems should begin profiling student skills and accomplishments as an additional strategy that would help sustain student expectations and

aspirations for their futures' (Alloway et al. 2004: 223). If universities valued these skills and accomplishments differently (in entry requirements and in courses) then under-represented students would be more likely to value and aspire to higher education.

At present, fewer students from regional and low SES backgrounds have much interest in the kind of higher education on offer (James et al. 1999: 58–9). It is not simply a question of taste. Also involved are the upfront and opportunity costs; the fear that drives students to and away from higher education; its perceived irrelevance to and devaluing of personal and community histories; cultural expectations; and issues of identity and hybridity (Archer 2007; Leathwood & Hayton 2002; Walkerdine et al. 2001; Lucey & Walkerdine 2003; Thomson et al. 2003; Burke 2005; McGonigal et al. 2007).

#### *Aspirations are adjusted to match what students see as possible*

A third explanation for why students from under-represented groups might not aspire to participate in higher education can be located in what they imagine to be possible. When students believe that one or more of the other conditions of entry to university (availability, accessibility and achievement) cannot be met, they tend to adjust their aspirations accordingly. To illustrate:

- *Availability*: Slack makes the point that 'to raise aspirations and not increase opportunities *realistically* available is both demoralizing and unfair' (2003: 333; emphasis original). Students are often adept at reading the signs relating to supply and demand and adjust their aspirations to avoid laying themselves bare to such disappointments. By contrast, an increase in supply can also increase demand.
- *Accessibility*: For regional students, there is a 'positive effect on student aspirations and expectations of having a [nearby regional] university campus' (Alloway et al. 2004: 230). The converse is also true: fewer 'rural school students with low access to a university plan on participating in higher education than other (higher access) rural and urban students' (James et al. 1999: 54).
- *Achievement*: In considering their options after school, 'some [rural and low SES] students were realistic enough [about their achievements] to have a second preference ready to pursue rather than give up hope of advancing their prospects' (Alloway et al. 2004: 124).

The Centre for the Study of Higher Education (2008) makes the point that decisions about participating in higher education are made earlier rather than later, particularly by students from higher SES backgrounds. It also highlights the importance of 'building possibilities' for young people from low SES backgrounds, where family and school expectations do not include higher education participation. As noted above, this has been the focus of the Aimhigher program in the United Kingdom, which targets students from the ages of 13 to 19. As well, most programs in the United States target middle school students or earlier (Cunningham et al. 2003). However, many of the current interventions aimed at raising aspirations for Australian higher education target students in Years 11 and 12. By this stage, the majority of students from low SES and rural backgrounds have already been excluded by subject choice or poor results. Accordingly, it is crucial for universities to work with schools to increase awareness and aspirations from a younger age.

Building possibilities is about developing ‘a system designed to support and nurture the expectations and aspirations of its students’ (Alloway et al. 2004: 226), not simply the expectations and aspirations of universities. Examples of what is possible include:

- *Availability*: Interventions that restructure schooling to accommodate students’ aspirations; for example, introducing a Year 13 for ‘students with high aspirations who had not met their own targets for academic success. Year 13 offered all of these students a second chance at realising their aspirations’ (Alloway et al. 2004: 219).
- *Accessibility*: Interventions that find alternative means to achieve the same ends, for example, introducing specialist subjects by distance education ‘to improve student access to programmes of study and to sustain student expectations and aspirations for their futures’ (Alloway et al. 2004: 224).
- *Achievement*: Interventions that rethink schooling (and higher education) and what can be achieved; for example, adopting ‘philosophical and pedagogical positions ... that sought to “read” students positively, to work with their strengths, to keep them at school, and to deliberately and explicitly sustain student expectations of what they might achieve from life ... [particularly] those who do not fit the mould’ (Alloway et al. 2004: 225–6).

## **National interventions towards enhancing equity in student participation in higher education**

Some interventions aimed at increasing the participation in higher education of students from under-represented groups are of such *scope* (addressing multiple conditions of entry to higher education) and *scale* (covering large populations, often at a national level) that they warrant consideration in their entirety. Below are reviews of interventions (largely initiated by government) that dominate the approaches of Canada, the United States, the United Kingdom and New Zealand. Common themes include:

- the desire (and need) to increase the participation of under-represented groups in their higher education systems at the same time that they are teetering on the brink of declining school-age populations reaching the point of transition to university
- a different valuing of people from under-represented groups, not just because of their numbers but also because of their potential contributions to higher education
- a growing awareness and practice of intervening earlier in schooling in order to enable more students from under-represented backgrounds to participate in higher education
- the need for education sectors to work together on a holistic approach to education that transcends sectors.

### **Canada**

Canada has the highest level of tertiary attainment in the OECD at 46 per cent of all 25- to 64-year-olds (OECD 2006). Like the United States it has an essentially binary system of post-secondary education with universities offering degree-level qualifications while colleges provide diploma or

certificate qualifications. The Acumen Research Group (2008) reports that 28 per cent of Canadian 25- to 34-year-olds had university qualifications in 2000 and 21 per cent had college diplomas. However, this participation is not evenly distributed across social groupings, with people from low socioeconomic backgrounds much more likely to study at the college level than at university (CSHE 2008). In the university sector high-income students are represented at almost twice the rate of those from the lowest income quartile: 46.4 per cent compared to 25.4 per cent of 19-year-olds in 2003 (Berger 2008).

A report by Canada's Learning Policy Directorate (2004) describes a very high aspirational secondary student body, with almost all Canadian youth wanting to proceed to post-secondary education and most to university. The report notes that these high aspirations are at least partly explained by the relatively open and undifferentiated schooling system (compared to Europe), with little tracking into academic versus vocational streams. It notes that within an open system parental encouragement, closely associated with whether parents have attended post-secondary education themselves, plays a far greater role in influencing access to post-secondary education than parental socioeconomic resources. The significant impact of parents' educational background on students' aspirations and attainment levels has been confirmed by a number of more recent studies (Currie et al. 2007; Frenette 2007; Finnie & Mueller 2008).

With an already high rate of participation in post-secondary education, Canada is experiencing relatively slow growth in tertiary enrolments. The OECD notes only a 4 per cent increase in Canadian tertiary students between 1995 and 2002, compared with an OECD average of 49 per cent (OECD 2006). It appears that the growth that is occurring is primarily at the university level. The Acumen Research Group (2008) cites Statistics Canada figures reporting a 20 per cent increase in university enrolments between 1998 and 2004. Growth in demand for post-secondary education is expected to continue in the immediate future as the 18- to 24-year-old population peaks over the next five years, putting considerable pressure on institutional capacity in the short term, but this is projected to fall significantly from 2013 with major implications for Canada's labour force needs (CSHE 2008).

Combined with a declining working age population, Canada is facing a labour force crisis with an increasing need for advanced education and training levels to meet the needs of the global economy. There is also the pull of the 'hot labour market in Western Canada that appears to be luring high school graduates away from postsecondary education' (Berger 2008: 5). With students from high-income families possibly approaching saturation point (Currie et al. 2007; Berger 2008), these combined factors have added impetus to efforts to widen the participation of under-represented groups in post-secondary education: 'a growth in the participation rate must occur if Canada is to produce the type of educated and skilled workforce needed to remain competitive and prosperous in the global knowledge economy' (Berger 2008: 3).

Indigenous people in particular remain persistently under-represented in post-secondary education, despite high aspirations (Canadian Millennium Scholarship Foundation 2005). In 2006, only 9 per cent of Indigenous people had completed a university degree, compared to 23 per cent of the non-Indigenous population, although 39 per cent had graduated from post-secondary education in general (Canadian Millennium Scholarship Foundation 2005). Students living in rural and northern regions of Canada are also significantly under-represented (Ontario Undergraduate Student Alliance 2004).

Until recently the dominant strategy in Canada for improving access to post-secondary education for disadvantaged students, within a fee-paying regime, has focused on the provision of financial support. The Canada Student Loans Program provides a complex system of up to 100 different combinations of loans and grants in 10 of Canada's 13 jurisdictions, under a single national legislative framework (CSHE 2008). Each year the Canadian Millennium Scholarship Foundation provides Can\$340 million in bursaries and scholarships to improve access to post-secondary education for all students, but especially for those facing socioeconomic disadvantage.

Yet there is an increased understanding that it is not just financial considerations that act as a disincentive for students aspiring to post-secondary education (Frenette 2007; Finnie & Mueller 2008). High school achievement and parental influence also have a strong influence (Learning Policy Directorate 2004; Currie et al. 2007) as does distance from a university or college town (OUSA 2004). Young people with lower levels of reading proficiency are more likely to drop out or still be in high school at age 19 (Statistics Canada 2006; Finnie & Mueller 2008). Yet some students with high reading achievement scores at age 15 also fail to complete high school, for a complex range of reasons associated with peer and family influence and social and cultural capital (Thiessen 2007).

Even where access to financial assistance is important, Indigenous youth often fail to use post-secondary student financial assistance programs because they lack an understanding and awareness of funding options, make uninformed decisions, do not explore alternative funding options or do not have the confidence in their own ability to qualify for scholarships (Canadian Millennium Scholarship Foundation 2008).

The dominance of financial support in widening participation strategies in Canada has been accompanied by dominance in the research in the field, to the detriment of studies into other important barriers such as parental education levels and academic achievement (Usher 2008). However, the tide appears to be turning, with several recent studies focusing on longer-term factors associated with family background and making recommendations to introduce earlier interventions, up to the age of 14 or 15, to address both aspirations and academic preparation for university (Finnie & Mueller 2008). Strategies recommended include:

- support for academic achievement
- improved dissemination of information, particularly to parents
- mentoring that supports achievement, motivation and social skills
- better career education and planning in secondary schools.

One intervention that began in Toronto, with the assistance of philanthropic funds, and has spread to other provinces is the Pathways Canada program. It has been so successful that it is now being considered for national government support (Usher 2008).

**INTERVENTION: *Pathways to Education (Pathways Canada)* (CANADA)**

The Pathways to Education program (referred to as Pathways Canada) is run by the charitable organisation Pathways to Education Canada. The program commenced in 2001 in the socioeconomically disadvantaged community of Regent Park, Toronto in response to school dropout rates that were twice the city average.

Pathways Canada supports students through academic, social and financial support and advocacy. Students are provided with:

- tutoring in five core subjects, four nights a week
- group mentoring for grades 9 and 10, specialty and career mentoring for grades 11 and 12
- financial support such as free bus tickets tied to attendance and a bursary for post-secondary education (up to Can\$4000 per student in the program)
- advocacy through student-parent support workers connecting teens, parents, school administration, teachers and community agencies.

An evaluation of the program at Regent Park in 2007 by the Boston Consulting Group identified the following successful outcomes.

For students engaged in the pathways program, absentee rates halved, dropout rates dropped from 56 per cent to 10 per cent, the percentage of academically at-risk students dropped by 60 per cent and post-secondary enrolment rose from 20 to 80 per cent, shared equally between college and university. There was a considerable reduction in crime and youth violence and lower teenage pregnancy rates. Furthermore, in a 60 per cent immigrant population, 85 per cent of Pathways' post-secondary enrolments were first generation immigrants. In addition, over 90 per cent of college/university enrolments were the first in their families to attend post-secondary institutions.

The Boston Consulting Group report attributes the success of the program to five key factors:

- a contract between Pathways students and parents, supported by Pathways' student-parent support workers
- a holistic, community-based support network that involves mentoring, tutoring and other activities
- alignment with a community hub agency that has local credibility
- short and long-term incentives
- long-term commitment from key stakeholders.

As a result of what is perceived as dramatic success, the program is being expanded to other locations in Toronto and nationally into other Canadian provinces.

<http://pathwaystoeducation.ca/results.html>

A range of interventions has been introduced specifically aimed at improving the participation of Canada's Indigenous or First Nation people. The major cause of low post-secondary education for Indigenous people is non-completion of secondary education. For example, up to 58 per cent of 20- to 24-year-old Canadian Indigenous people living on reservations do not complete high school (Berger et al. 2007, in CSHE 2008). One such intervention has been the creation of the First Nations' University of Canada in Saskatchewan (the Saskatchewan Indian Federated College until 2003). The university's mission is 'to serve the academic, cultural and spiritual needs of First Nations' students'. It enrolls more than 1200 students from every Canadian province and territory in a range of undergraduate and postgraduate degrees in both First Nation and 'standard' areas of study (see [www.firstnationsuniversity.ca](http://www.firstnationsuniversity.ca)).

Indigenous secondary schools have also been established. The following intervention is an example of an outreach program run collaboratively between a mainstream university and an Indigenous high

school using university student mentors to build post-secondary education aspirations and improve secondary school achievement.

**INTERVENTION: Carleton University High School Outreach (CANADA)**

Carleton University in Ottawa runs a high school outreach program as a joint venture between the Centre for Initiatives in Education and the Centre for Aboriginal Culture and Education. The program hires Carleton University students to mentor and tutor Aboriginal high school students, paying them an hourly rate for about four contact hours per week and their associated meeting and training sessions. Mentors relate their own experiences to students, provide information and encourage students to aspire to post-secondary education. The program's first site is the Odawa Aboriginal Alternative High School, located in the Odawa Friendship Centre in Ottawa. The school has an inspiring teacher who guides the university student mentors in their role. The university is working to expand the program to public high schools and it is anticipated that the program will begin soon at Rideau High School, which has a high population of Aboriginal students. The long-term goal is to extend the program into elementary and intermediate schools, with assistance from the university's Aboriginal Cultural Liaison Officer and consultation with participating school teachers.

Informal evaluation at the Odawa Aboriginal Alternative High School has revealed the academic achievement of participating students has risen significantly, due to a number of interrelated factors but strongly related to the presence of the mentors/tutors.

## United States

The United States has an extremely large and diverse system of universities and colleges run largely by its states. The 2007 edition of the OECD's *Education at a Glance* shows the United States with the third highest tertiary-educated population in the world, after Canada and Japan (OECD 2007). It is also the highest funding country with respect to tertiary education, although well over half of this comes from private funds, with public investment low relative to national wealth (Marginson 2007). The US system is highly stratified with high-fee, private, four-year universities (including the 'Ivy League') at the top of the hierarchy, followed by public, research-led, four-year universities. At the bottom are the state-run, two-year community colleges that are generally open access and offer courses from short certificate programs to two-year diplomas. Many community colleges provide preparation programs and incorporate transition and articulation arrangements for universities.

The socioeconomic profiles of these institutions reflect their position in the hierarchy. Low-income and minority students are concentrated in the community college sector while the highly selective and extremely expensive Ivy League institutions are dominated by students from wealthy backgrounds. Access to post-secondary education is strongly aligned with the interconnected factors of parent education levels, race and income, inextricably linked to 'the profound effect of poverty on school achievement outcomes and educational attainment' (Ward 2006: 51). In 2006, 90 per cent of high school graduates in the highest income quintile enrolled in college compared to only 50 per cent of graduates from the lowest two quintiles (Baum & Ma, in CSHE 2008).

Until recently, much of the focus on educational inequality in the United States focused on race or ethnicity, with African Americans and Hispanics particularly under-represented. More recently, interest appears to be shifting to the broader range of socioeconomic factors and their interrelationship with each other and with educational outcomes (Swail 2000). Researchers are also investigating not only access to college and university but also graduation rates. For example, Ward (2006) notes an increase in minority high school graduates enrolling in and completing college but



the gap between the graduation rate of Caucasian students and African Americans and Hispanics has widened (in the case of Hispanics by 24 per cent).

The United States has led the world in developing programs to improve equity of access to post-secondary education. Even the introduction of the Student Aptitude Test in the 1930s was designed to open up entry to Harvard University based on aptitude rather than wealth. This test is now the standard tool for selecting US school leavers for entry to university but has been heavily criticised for being reliant on linguistic and cultural background and for perpetuating inequalities in higher education selection (CSHE 2008). Criticism has also been directed at schools for teaching to the test; indeed, many of the interventions to widen participation include components of test preparation.

An enormous array of outreach, access, academic preparation and financial aid programs operate across the United States, mostly independently of each other, targeting millions of potential students and costing the nation billions of dollars (Cunningham et al. 2003). AVID, ACHIEVE, CROP, GEAR UP, PREP, Twenty-first Century Scholars and Upward Bound, some of which have already been described above, are just some of the larger programs available. These programs target different groups within a wide range of under-representation and with a wide range of different interventions. Most still include a financial incentive, whether as a direct grant, a scholarship guarantee once at college, or advice on the complex financial aid regime in the United States.

College preparation classes and summer schools, mentoring and campus visits are other common interventions, usually targeting selected low-income or minority students who have shown some talent or potential. For example, TRIO's Educational Talent Search provides middle and high school students from disadvantaged backgrounds who have the potential to succeed at college with academic, career and financial aid counselling. More recently, programs are beginning to work with whole cohorts of students (for example, GEAR UP) or are attempting to change the culture and curriculum within disadvantaged schools (for example, AVID). The vast majority of these programs are targeted at students in middle school or beyond, despite growing literature that interventions should be occurring earlier in students' lives (Swail 2000; Cunningham et al. 2003). Despite the massive funding going into these programs, 'few have been subjected to rigorous evaluation' (Myers et al. 2004: 2).

The longest-standing college preparation program in the United States is Upward Bound. Introduced in response to President Johnson's 'War on Poverty' (the Economic Opportunity Act of 1964) with the aim of encouraging low-income and minority students to complete high school and progress to college, the program is one of a cluster of programs referred to as TRIO. TRIO is funded by the Federal Higher Education Act and is implemented and monitored by the United States Department of Education. It originally consisted of three programs (hence TRIO):

- Upward Bound
- Educational Talent Search (offering support, advice and information to disadvantaged individuals, including early school leavers)
- Student Support Services (aimed at increasing retention and successful completion once students are enrolled in tertiary institutions).

TRIO has since been extended to incorporate Upward Bound (sometimes now referred to as Regular or Classic Upward Bound), Veterans' Upward Bound, Talent Search, Student Support Services, Ronald McNair Post-Baccalaureate Program and Upward Bound Math and Science. All these programs are aimed at encouraging and supporting disadvantaged students and students from backgrounds with low participation rates in higher education, to enrol and achieve in tertiary study.

**INTERVENTION: *Upward Bound* (UNITED STATES)**

Upward Bound is the largest and longest-running college preparation program in the United States, and probably the world, with well over 700 programs currently offered. Colleges and universities as well as community organisations apply for grants on a competitive basis to administer programs in their local area. These programs typically provide services for between 50 and 100 students annually. Grants are allocated for four or five years. In 2007, almost US\$266 million was awarded to 761 grantees, serving 56 450 students, an average of around US\$4700 per student, with the most common award providing US\$250 000 per grantee.

To be eligible to participate, students must have completed eighth grade and must be from low-income backgrounds and/or be potential first-generation college students. Typically students enter the program in ninth or tenth grade and continue to high school graduation.

Most Upward Bound projects emphasise academic preparation for attending and completing college and combine two approaches:

- a summer program where high school students take college preparation classes and earn work experience at a college campus for six weeks
- weekly follow up and possibly tutoring with students during the school year.

All projects must include instruction in mathematics, laboratory science, composition, literature and a foreign language to help students acquire academic proficiencies in challenging college preparation courses. Almost all projects provide students with tutoring for high school coursework and help them to prepare for college entrance exams and financial aid applications. Students are also given the opportunity to attend plays, visit museums and tour college campuses.

Upward Bound is one of the few US programs that has been longitudinally evaluated, the focus being on program implementation and student outcomes (Myers et al. 2004). This evaluation reports that:

- Upward Bound increased the number of high school maths credits earned by participants.
- There was little effect on other high school grades for average students but increased high school credits earned by *students with lower educational expectations*.
- There was no effect on overall enrolment at post-secondary institutions but a possible increase in enrolment in four-year postsecondary institutions, especially for students with lower educational expectations, although the report suggests that this finding is not conclusive.
- Staying in Upward Bound for longer periods of time is associated with better student outcomes.

Critics of TRIO programs such as Upward Bound claim they are limited in their ability to meet the complexity of issues affecting educational under-achievement. They are university-managed, tend to target students who have already demonstrated the ability to succeed academically and are

implemented at too late a stage to make a difference to the students at most risk (Ward 2006). They are also at the periphery of schooling, 'fingers in the dyke' which 'fill the holes where students flow out of the (education) system' (Swail 2000: 88) and do little if anything to reform what is going on in schools. Researchers in the United States emphasise that systemic school reform is required in order to bring about sustained improvement in educational outcomes and obviate the need for the current plethora of stop-gap strategies (Swail 2000; Ward 2006).

## United Kingdom

Higher education in the United Kingdom has been associated traditionally with the upper classes in a highly stratified society. Young people from the highest social groupings are five to six times more likely to attend university than those from the most disadvantaged backgrounds (Higher Education Funding Council for England 2006; CSHE 2008).

The higher education system has seen dramatic growth from an elite 12 per cent of 18- and 19-year-olds in 1978 to a participation rate of around 35 per cent of 18- and 19-year-olds in 2002 or 40 per cent of 17- to 30-year-olds in 2006 (National Audit Office 2008). In part, this has been brought about by the creation of new universities in the early 1990s (post-1992 universities) and by concerted efforts by the UK government to increase participation to a much cited 50 per cent of 18- to 30-year-olds by 2010. By 2006, the United Kingdom's Universities and Colleges Admissions Service accepted applications to 333 institutions of higher education, including universities, colleges of higher education and further education colleges that offer higher education courses (Bowers-Brown 2006).

Despite significant efforts and funding being committed to widening participation initiatives, this growth has not been accompanied by any marked increase in equality of participation (Thomas et al. 2005; Gorard 2008). Middle-class young people have benefited from much of the growth and, while the participation rate of low-income students has increased substantially, the gap between high and low socioeconomic groups has persisted. White males from low socioeconomic backgrounds, in particular, continue to be under-represented (Gorard 2008; National Audit Office 2008). A number of commentators have asserted that there has actually been 'a deepening of educational and social stratification and the emergence of new forms of inequality' (Reay et al. 2005: vii), as equality becomes more a question of 'which university?' in an increasingly stratified system (Archer 2007; David 2007). The newer 'post-1992' universities have enrolled the majority of students from lower socioeconomic backgrounds, despite the strong policy imperative on all universities.

The widening participation policy framework was established by the Blair government in response to the Dearing Committee of Inquiry into Higher Education (1997) with the publication of *Widening Participation in Higher Education: Funding Proposals* by the Higher Education Funding Council for England in 1999 (Higher Education Funding Council for England 2006). Nearly £150 million was allocated for the 1999–2000 academic year to support the policy objective, to be allocated to universities and colleges to support young people with disabilities and from disadvantaged backgrounds to gain access to higher education. It has been estimated that the UK government has now spent at least £2 billion on widening participation (Gorard 2008).

In 1998, the UK government introduced a means-tested, upfront tuition fee requiring students to contribute £1000 at the beginning of their undergraduate degree (Bowers-Brown 2006). (Scotland abolished upfront fees in 2000, replacing them with a graduate repayment scheme once students

had reached a certain threshold of income.) The upfront fee was replaced in 2006 by the introduction of a deferred, variable fees scheme in England, similar to Australia's Higher Education Contribution Scheme, with fees capped at £3000. A loans scheme for maintenance was also introduced, along with a means-tested Higher Education Maintenance Grant designed to ensure equitable access to university for students from low-income backgrounds. The Office for Fair Access was established to ensure that England's new fee regime will not negatively affect widening participation. All institutions are now required to submit access agreements to this office instead of the participation strategies previously required by the Higher Education Funding Council for England. It is too early to determine the impact of the new fee regime on participation but concern has been expressed about the potential deterrent effect for low-income students (Bowers-Brown 2006; Callender & Jackson 2008).

In **England**, the strategies introduced to widen participation have focused on raising educational attainment, raising aspirations, communicating the benefits of higher education and ensuring fair admissions (Thomas et al. 2005). Funds are provided directly to institutions by the Higher Education Funding Council for England to establish access initiatives; institutions also receive a 'widening participation premium' to assist with supporting students from low socioeconomic backgrounds and ensure equitable retention and success. In 2005–06, for example, £51 million was allocated for institutional access initiatives, and £221 million for retention and success. A further £12 million was allocated to support students with disability. In addition, £102 million was allocated to Aimhigher partnerships (discussed below).

Other countries within the United Kingdom have developed different approaches to widening participation, which are funded separately by their governments. Approaches are similar, with a focus on collaboration between higher education institutions and schools, and further education and funding to support access, retention and success.

In **Scotland**, the Scottish Higher Education Funding Council provides formula-based grants to institutions to support the access and retention of students from low-participation neighbourhoods. Scotland is notable for not charging fees and for the emphasis placed on the role of further education colleges in providing higher education and comprehensive credit transfer arrangements between the sectors. The council encourages cross-sectoral partnerships between schools and higher and further education institutions through four regional forums such as the West of Scotland Wider Access Forum. A wide range of interventions are in operation, aimed at increasing educational opportunities for diverse under-represented groups, including older adults, ethnic minorities, school leavers, students at risk of leaving school early and students in the earlier years of schooling.

In **Wales**, premium funding aimed at widening access is allocated to institutions based on their success in recruiting students from low-participation neighbourhoods and lower socioeconomic groupings. The Reaching Higher Reaching Wider initiative supports four regional partnerships to increase the participation of ethnic minorities, students from lower socioeconomic backgrounds and students with disabilities, and to support Welsh language provision. From 2007–08 Welsh higher education institutions were given the flexibility to charge variable fees (again with a £3000 pound cap). Welsh students choosing to study at a Welsh institution are eligible for a fee grant to offset the additional cost.

In **Northern Ireland** widening participation is mainly delivered through institutional outreach activities along with an Aimhigher Roadshow that tours Northern Ireland to provide information on higher education to schools. A widening access premium is provided to higher education institutions to support the retention and success of low-income students. Variable fees were introduced in 2006 with institutions required to provide Access Bursaries to students from low-income families.

Aimhigher is the major initiative for widening participation in England. The majority of programs identified in the UK literature fall under this umbrella. Aimhigher was introduced by the Higher Education Funding Council for England in 2001 as an outreach program to increase higher education awareness, aspirations and attainment. The principal targets of Aimhigher are 13- to 19-year-olds from social groupings that are under-represented in higher education, including those whose parents did not attend higher education and students in care. An increasing focus is on students on vocational pathways and also on those in the earlier years of schooling. Aimhigher also works with parents, teachers and others who influence the decisions of young people about future pathways, providing extensive professional development activities for staff involved in the delivery of programs.

Funded projects can involve mentoring schemes, 'taster' visits to universities, outreach programmes within schools, summer holiday programs, master classes and pre-entry support and information strategies. Most projects involve some contact with university student mentors or student ambassadors. A recent audit (National Audit Office 2008) estimated that around 30 per cent of primary schools have participated in widening participation activities in response to growing recognition of the need to engage students early. They provide the example of an Aimhigher 'Professor Fluffy' project developed by the University of Liverpool ([www.ahgtm.ac.uk/projects/?mode=movenav&page\\_id=691](http://www.ahgtm.ac.uk/projects/?mode=movenav&page_id=691)).

Aimhigher operates through collaborations between universities, schools, colleges, local councils and communities, with most funding going to the 45 area and nine regional partnerships. It enables the development of coherent transition arrangements that span the different education sectors, managed by area Aimhigher managers and informed by area steering groups that comprise representatives from all education sectors, local authorities and community stakeholders.

Higher education providers in the local area work collaboratively together with other sectors, sharing good practice and avoiding competition and duplication of effort. Aimhigher regional forums bring area representatives together with other stakeholders to discuss strategic developments in regional and area level partnerships. Regional partnership boards provide regional level governance and oversee both regional and area plans, reporting to the high-level National Partnerships Board. Advice and support is provided by the national Widening Participation support team, Action on Access, through a team of regional advisers.

The Aimhigher infrastructure has facilitated the development of a number of national initiatives. For example, the Aimhigher health care strand provides opportunities for participants to explore a range of career opportunities in health care. A national communications strategy has also been developed including a website, student portal and the Aimhigher Roadshow, which in 2005–06 held more than 750 events across England and Northern Ireland (Higher Education Funding Council for England 2006).

The infrastructure also aims to ensure that projects are monitored and evaluated appropriately. The Higher Education Funding Council for England (2006) reports on three national research studies, which found:

- higher than expected attainment levels among participants, including improved performance in mathematics at Key Stage 3 and some improved performance in General Certificate of Secondary Education points
- a 3.9 per cent increase in Year 11 students intending to progress to higher education
- general agreement that the most effective activities in increasing progression to higher education were residential schools, including summer schools, campus visits, mentoring, subject-related taster events and master classes (both away from school and at school), and information, advice and guidance.

This research also found that effective partnerships were developing a systematic and progressive arrangement for the delivery of interventions, commencing with activities which raise awareness and aspirations and moving to those that aim to raise attainment levels and preparation for higher education.

Other research (Hatt et al. 2005; Thomas et al. 2005; Hatt et al. 2008) has found that targeting students for widening participation interventions such as Aimhigher can be problematic. A perceived strength of Aimhigher is that it works with groups of students and avoids stigmatising individuals. However, at the same time, there are concerns that the program may not always be targeting those most in need of assistance; that is, the students being selected may be the ones who least need the intervention. This was exacerbated in the South West of England study (Hatt et al. 2008) by some teachers' discomfort at focusing on excluded groups only and a desire to extend the benefits to all students. Teachers also noted the difficulties associated with targeting students to meet all of Aimhigher's criteria:

It has been difficult to identify the WP [widening participation] cohort in a school with few ethnic minorities or disabled students. Economic background is difficult to identify in an area where no-one seems to be short of designer labels and mobile phones but they all seem to be on benefits.

(Hatt et al. 2008: 135.) Nevertheless, nearly all the teachers in the study believed that Aimhigher had increased awareness of higher education and encouraged aspirations. They also believed the program had increased students' self-confidence and self-esteem, and had a positive effect on student motivation and learner identities, suggesting a longer term impact that may contribute further to higher education aspirations and the achievement of those aspirations. Teachers also linked Aimhigher with improved student achievement and performance, and with increased progression to both post-compulsory and higher education.

The concerns with targeting widening participation activities in general were taken up in the recent report of the National Audit Office (2008: 26) which recommends targeting strategies more appropriately by clarifying criteria for target groups through a three-stage process:

- stage 1: area level targeting (schools, colleges, communities)

- stage 2: learner level targeting
- stage 3: monitoring the effectiveness of targeting.

## **New Zealand**

New Zealand is a small country of only four million people. About 75 per cent of its population identify as European, some 15 per cent identify as Māori, 9 per cent as Pasifika and 7 per cent as Asian (Goedegebuure et al. 2008). The population is projected to grow by around 12 per cent over the next 20 years, with this growth particularly concentrated in the Māori and Pasifika populations because of their greater fertility, and in Asian populations because of migration. This will result in a more ethnically diverse population, with significant implications for the education system. Up to now educational outcomes for Māori and Pasifika people have been below average.

New Zealand has a high demand for skilled labour, with low unemployment and strong demand for tertiary education. It has embraced the notion of the 'knowledge economy' and, with it, the notion that access to education is a major determinant of social and economic development at both the national and the individual level. The overall levels of participation in tertiary education are among the highest within the OECD. In 2003, about 80 per cent of the population could expect to enter some level of tertiary education at one point during their lives.

The tertiary education sector in New Zealand incorporates more than 900 highly diverse institutions catering for some half a million, predominantly domestic, students. It includes all post-secondary education, from adult literacy and second chance education for those with limited schooling through to certificates, diplomas, bachelors and postgraduate qualifications. It also includes industry training, apprenticeships and adult and community education.

The sector comprises public tertiary education institutions, private training establishments, other tertiary education providers, industry training organisations, and adult and community education providers. The publicly funded tertiary institutions include eight universities, twenty institutes of technology and polytechnics, two colleges of education and three Wānanga, or Māori centres of tertiary education. The vast bulk of tertiary education institutions are the nearly 900 private training establishments that are mostly small to very small niche-based institutions.

Of the half million students enrolled, 68 per cent study at sub-degree certificate and diploma level, 26 per cent at bachelor level and a small proportion (6.4 per cent) at the postgraduate level. The largest body of students can be found in the institutes of technology and polytechnics (42 per cent), followed by universities (33 per cent), and the private training establishments and Wānanga (14 per cent) (Goedegebuure et al. 2008). The share of government-funded places has shifted substantially in recent years, away from universities to ITPs and Wānanga, as outlined in Table 1.

Public expenditure on tertiary education is high (the highest in the OECD in 2002 at 5.2 per cent of total public expenditure) and is distributed between subsidies to institutions (approximately 51 per cent), student loans (27 per cent), student allowances (10 per cent), and other expenses (Goedegebuure et al. 2008). New Zealand also has a high private expenditure on tertiary education with tuition fees charged across the system. In 2004, the average domestic annual tuition fee varied between NZ\$4000 in universities, NZ\$2250 in institutes of technology and polytechnics, and a much

smaller NZ\$405 in Wānanga (Goedegebuure et al. 2008). Since 1999, fee increases have been controlled with limits to the extent institutions can raise their fees.

**Table 1: Distribution of government-funded tertiary education places, 2000–04**

Institution type	2000	2004
Universities	55%	41%
Institutes of technology and polytechnics	29%	33%
Wānanga	1.6%	14%
Private training establishments	8.8%	8.3%
Colleges of education	4.7%	3.0%
Other	0.5%	0.7%

Student financial aid is provided through a combination of a loan scheme and a means-tested student allowance scheme. Any domestic student enrolled in an approved program is able to borrow the full amount of the fees charged by the institution, a fixed amount to cover course-related costs and a weekly amount to cover living costs. Repayment is contingent on income following completion of studies. In 2004, 53 per cent of eligible students took out a student loan and the median amount borrowed was NZ\$5424 (Goedegebuure et al. 2008).

The means-tested Student Allowances Scheme is targeted at promoting the participation of full-time students from lower socioeconomic backgrounds. In 2004, 16 per cent of all domestic students received assistance through this scheme. Students who receive student allowances may also take up student loans, with the living-costs entitlement decreasing by the amount of the allowance. In 2004, 80 per cent of student allowance recipients also took out a student loan (Goedegebuure et al. 2008).

The government also funds a range of other support schemes for specific purposes such as the Training Incentive Allowance to encourage people on state assistance to prepare for the workforce, scholarships targeted at improving the participation of Māori and Pasifika peoples, and funding targeted at encouraging priority disciplines (for example, science, technology, teaching and health).

The student finance system is an important means of facilitating access and participation. The combination of allowances and loans assists students in covering living costs and promotes the participation of those with greater financial need who may be particularly vulnerable to debt aversion. The income-contingent nature of the loans system means that low earners make low or no repayments.

The NZ tertiary education system has seen continual change since the late 1980s. As the NZ economy shifted from a highly regulated and protected economy to a liberalised market economy, the tertiary education sector moved from an elite university system to a mass tertiary system characterised by competition, diversity and user-pays principals. From 2000, the NZ government has aimed to more closely align tertiary education with New Zealand's



socioeconomic development, with the development of the 2002–2007 Tertiary Education Strategy.<sup>1</sup> The strategy incorporates six substrategies:

1. strengthen system capability and quality for our knowledge society
2. te rautaki mātauranga Māori—contribute to the achievement of Māori development aspirations
3. raise foundation skills to allow participation in the knowledge society
4. develop the skills needed for a knowledge society
5. educate for Pacific people’s development and success
6. strengthen the research knowledge creation and uptake function (New Zealand Ministry of Education 2002).

Responsibility to develop all learners to their fullest capacity through education and training is mandated, with equity and access clearly articulated within at least substrategies 1, 2, 3 and 5. Attention is focused on learners who may have previously experienced educational disadvantage: Māori and Pasifika peoples, people from low socioeconomic backgrounds and people with disability. The strategy responds to both demographic and economic imperatives ‘to generate economic growth and improve social outcomes’ (New Zealand Ministry of Education 2007b: 31). It also acknowledges the unique position of New Zealand’s obligations under the Treaty of Waitangi.

Historically, Māori and Pasifika peoples have been significantly under-represented in tertiary education, although this has changed markedly in recent years. Since 2002, Māori students have had the highest participation rate of any ethnic group in New Zealand (New Zealand Ministry of Education 2006). Participation by Pasifika peoples has also increased significantly, though not to the same extent as Māori. Despite the overall increase in participation, Māori and Pasifika students are still concentrated at the lower levels of the qualifications framework with both groups remaining significantly under-represented at degree and post-degree levels. They also have a higher proportion of students who leave school without qualifications.

New Zealand has been a leader in its approach to the provision of Māori education and meeting the obligations of the Treaty of Waitangi through the recognition of Māori knowledge and ways of doing, including the development of the Māori-led Wānanga. A case study on New Zealand’s successful approach to Maori education is detailed below.

The primary focus for educational equity strategies in New Zealand tertiary education has centred on the significant disparities for Māori and Pasifika peoples. However, the Tertiary Education Strategy also recognises the under-representation of people from low-income backgrounds, as well as people with disabilities. The goal of improving the participation of people from low-income backgrounds is complicated by the lack of any reliable measure (New Zealand Ministry of Education

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<sup>1</sup> A revised Tertiary Education Strategy 2008–2012 was released in December 2007, continuing much of the 2002–2007 strategy but with some changes in focus. In particular, the 2008–2012 strategy introduces a new approach to planning, funding, quality assurance and monitoring in the tertiary education system that will promote a stronger focus on quality and relevance of education and research outcomes.

2006). Until recently there has been little research on the impact of socioeconomic status alone on tertiary participation in New Zealand (Goedegebuure et al. 2008), although it has been observed that a smaller proportion of students at schools located in areas of disadvantage move directly from school to tertiary education, especially to degree-level studies (New Zealand Ministry of Education 2006; Tumen et al. 2008).

The Ministry of Education notes that the key determinant for participation in degree-level study does not appear to be socioeconomic status in itself, but the level of academic attainment at secondary school (New Zealand Ministry of Education 2006). As is the case elsewhere, socioeconomic and ethnic disparities in tertiary education are closely interrelated and have their roots in educational inequalities within the schooling sector.

Two programs are offered through the school sector to provide pathways for senior secondary school students who are at risk of leaving school with low or no qualifications. The Secondary–Tertiary Alignment Resource (STAR) and Gateway programs enable students to study for tertiary-level courses while still at school to help prepare for work and/or further education. Whereas STAR does not target any particular group of senior students, Gateway is specifically aimed at assisting senior students in low socioeconomic secondary schools. Evaluations suggest that both these programs appear to have been reasonably effective at promoting transition to further training or employment and are held in high regard by the secondary sector (New Zealand Ministry of Education 2006).

The University of Auckland, in partnership with the NZ government, has commenced a longitudinal study into the impact of socioeconomic status on educational achievement in schools. Studying a number of cohorts of students from local primary schools through to tertiary education, the project aims to provide a comprehensive understanding of educational underachievement and to develop a toolkit of initiatives to improve the outcomes for Māori, Pasifika and low-income school students.

**INTERVENTION: *Starpath* (NEW ZEALAND)**

Starpath is a ‘Partnership for Excellence’ led by the University of Auckland in collaboration with the NZ government. It is a research-based project investigating the impacts of socioeconomic status on educational attainment and aims to address the comparatively high rates of educational under-achievement, compared with their peers, of Māori, Pacific Islanders and students from low socioeconomic backgrounds. The overarching aim is to deliver a toolkit of proven initiatives and strategies that will transform current patterns of educational underachievement in New Zealand.

The five-year project was announced in August 2004 and is piloting its approach in a limited number of Auckland schools and tertiary institutions, studying up to 14 consecutive cohorts of students from primary to tertiary education. The first extension to other regions of New Zealand commenced in 2008. Over the five years Starpath aims to collate and analyse 20 years of educational data, using a longitudinal methodology that focuses on understanding and transforming the pathways for different groups of students in these cohorts as they pass through the education system. The project aims to identify the critical transition points at which different groups of students either progress to the next level of achievement, or fail to progress.

Starpath researchers are identifying:

- a detailed understanding of educational dynamics in New Zealand
- a toolkit of proven initiatives and approaches for schools
- a strategic, evidence-based approach to enhancing educational achievement
- improved methods of collecting and understanding data in schools

- initiatives in schools and tertiary institutions that will address barriers to tertiary study.

They aim to ensure that such initiatives, both within individual institutions and at a system-wide level in New Zealand, are strategic (rather than scatter-gun), evidence-based and efficient in their use of resources, and achieve the desired objectives.

A number of publications have been produced by the research team to date but most are not yet publicly available. Those that are available focus on the methodological approach or the performance of different cohorts of students once at university.

There are a number of strategies already in place to improve the participation of low-income students in tertiary education, including the system of financial aid discussed above. The relatively open admissions for most tertiary education providers also contribute to this goal by improving connections and pathways between foundation and higher levels of learning. New Zealand's focus on education at the certificate and diploma level helps provide the foundation education that many people missed in the schooling sector.

#### *Māori education: a case study*

This case study has been included specifically in order to show the interventions that have been made to improve Māori educational outcomes, and especially their higher education outcomes. New Zealand has adopted a national approach that has distinctive features and also connections to the global problem of improving Indigenous peoples' and First Nations' educational outcomes. Settler colonial nations, such as Australia, have serious policy challenges in this area given that Indigenous peoples' educational outcomes have been historically poor.

The New Zealand government has implemented a national strategy for improving Māori students' educational outcomes and recently launched *Ka Hikitia—Managing for Success: The Draft Māori Education Strategy 2008–2012* (see <http://kahikitia.minedu.govt.nz>). This strategy has four main focus areas: foundation years; young people engaged in learning; Māori language education; and organisational success.

The draft strategy's overarching strategic outcome, Māori enjoying success as Māori, relies on a system that enable Māori to live and succeed within the Māori world, wider New Zealand society—as well as on the global stage (New Zealand Ministry of Education 2007a: 39).

Under this overarching goal there are other strategic goals including 'to help increase the participation of family and community in the education system at all levels' (p. 18). Perhaps most significant, though, is the aim to strengthen Māori language education:

The Māori language education sector emerged in its current form in the 1980s, as the language revitalisation movement gained momentum. In little over more than 25 years, the sector has grown extensively, increasing the number of te reo Māori speakers and providing learners (young and old) with an important opportunity to speak te reo Māori and more fully participate and succeed in Māori society, both on the national and international stage (New Zealand Ministry of Education 2007a: 38).

Research has confirmed the value of this language education strategy, especially if students start early, have at least six years of sustained schooling, and are taught by high-quality teachers. There are three strategies for advancing the Māori language education sector:

... there is a 10 year early childhood education, strategic plan, *Pathways to the future: Nga Huarahi Arataki*; there is a school strategy, *Schooling strategy, making a big difference for all students, 2005–2010*; there's a tertiary education strategy, *The tertiary education strategy, 2002–2007* (New Zealand Ministry of Education 2007a: 39).

### *Kura Kaupapa Māori*

Given the significance of the aim to strengthen Māori language education for the New Zealand national strategy, it is appropriate to examine this theme in more depth. Historically this initiative began in the 1970s with a Māori social movement, *kura kaupapa Māori*, that was a reaction to poor educational outcomes for Māori and the near demise of Māori language. During the 1980s, Māori communities 'were so concerned with the loss of Māori language, knowledge and culture that they took matters into their own hands and set up their own learning institutions at pre-school, elementary school, secondary school and tertiary levels' (Smith 2003: 6–7). Māori activists established their own schools outside the government system. In response, the government supported the development of an alternative schooling model—*kura kaupapa Māori*—that would better meet the aspirations of Māori communities.

The *kura kaupapa Māori* education movement emerged out of a 'shift in mindset of large numbers of Māori people' (Smith 2003: 2). Taking a more proactive stand in the field of education meant struggling to have the state support the maintenance of Māori language, epistemology, cosmology and culture as a central tenet of education policy. This initiative led to the development of *kaupapa Māori* theory and pedagogy (Smith 1999). In terms of schooling, this model foregrounds 'pedagogical decolonization' (Kēpa & Manu'atu 2008). Out of this movement *kura kaupapa Māori* Elementary Schools (Māori immersion philosophy and practice), *kura tuarua* (Māori Immersion Secondary school options) and *Whare Wānanga* (Māori tertiary options) were established (Smith 2003: 7).

As an example, the *Te Kura Kaupapa Māori o Te Kotuku* in Te Atatu, Auckland was established by parents in 1993 and was officially recognised as a state elementary school in 2002. *Kura kaupapa Māori* schools are based on a number of key principles initially identified by Graham Hingangaroa Smith (1990), within the context of educational intervention and research. These elements and principles have since been expanded by other *Kaupapa Māori* theorists such as Linda Smith (1999), Leonie Pihama (2001) and Taina Pohatu (2004). The key principles of *Kaupapa Māori* research are:

- Tino Rangatiratanga: the principle of self-determination
- Taonga Tuku Iho: the principle of cultural aspiration
- Ako Māori: the principle of culturally preferred pedagogy
- Kia piki ake i ngā raruraru o te kainga: the principle of socioeconomic mediation
- Whānau: the principle of extended family structure
- Kaupapa: the principle of collective philosophy

- Te Tiriti o Waitangi: the principle of the Treaty of Waitangi
- Ata: the principle of growing respectful relationships.

A kura kaupapa Māori school is a state school where teaching is in the Māori language. Such schools are established as an initiative by a community that wants to become a kura kaupapa Māori. Its establishment is through preparing a business case that must formally receive ministerial approval. During their establishment, such schools are referred to as kura teina, that is 'attached' to and mentored by an established high-performing kura kaupapa Māori school (referred to as the kura tuakana).

From 1992 to 2007, the number of kura kaupapa Māori and kura teina, has increased from 13 to 73 and the number of students in kura kaupapa Māori and kura teina has increased by 16 per cent, from 5428 in 2002 to 6272 in 2006. This compares with a 7.5 per cent increase in the total Māori school student population over the same period.

Some of the indicators of success for the New Zealand approach include the following.

- Attendance of children in Māori immersion schools has increased.
- Students attending Māori language schools are achieving higher scores in the National Certificate of Educational Achievement (at Year 11) than their peers attending English language schools.
- Māori enrolments in formal tertiary education courses have nearly doubled since 2001 and there has been a dramatic increase in the proportion of registered Māori early childhood teachers since 2004 (23 per cent to 45 per cent).
- There have been significant and gradual increases in the number of Māori students who are successful in the National Certificate of Educational Achievement at Year 12 level and gradual increases in numbers with university entrance qualifications.
- Participation of Māori in formal tertiary education has remained higher than that of other populations, despite a 5.4 per cent decline in 2006.
- Completion rates in tertiary programs for all Māori was 47 per cent compared to 44 per cent for all other students (New Zealand Ministry of Education 2007a).

This approach to improving educational outcomes for Māori has also been taken up in the tertiary education sector, in the form of the Whare Wānanga (House of Higher Learning).

#### *Te Whare Wānanga o Awanuiārangi*

The Whare Wānanga (House of Higher Learning) was established under the Education Act 1989. As a Crown entity, it must comply with the many statutes that regulate the operations of public institutions. The Whare Wānanga provides tertiary level education and research as described under the Education Act:

A Wānanga is characterised by teaching and research that maintains, advances and disseminates knowledge and develops intellectual independence and assists the

application of knowledge regarding ahuatanga Māori (Māori tradition) according to tikanga Māori (Māori custom).

As an example, the Te Whare Wānanga o Awanuiāraangi is a Mataatua-based tribal university, situated in Whakatane. It was established in 1992 but did not receive Wānanga status until 1997. The term 'Whare' in the title invokes the original founding aspiration to provide high-calibre educational opportunities for Māori at all levels within the tertiary sector. The Whare Wānanga provides community-based learning programs up to graduate programs at masters and doctoral levels. These programs focus on Māori development and advancement and also reference international Indigenous research activity.

Of special interest for this review is the Bachelor of Māori Education, Bachelor of Teaching and Learning and the PhD program in Teacher Education, programs that provide for the training of teachers in Māori approaches and hence support the ongoing development of the kura kaupapa Māori intervention outlined above. These programs are 'underpinned by a kaupapa Māori philosophy whereby traditional Māori values associated with knowledge are implicitly sanctioned and reinforced. The aim of this programme is to produce competent and confident educational practitioners. It is offered as an option that contributes towards the revitalisation of Māori knowledge and language' (Williams 2003: 2).

The success of the New Zealand model of intervention for improving learning for Māori is also evident in the outcomes of Ngā Pae o te Māramatanga, New Zealand's Māori Centre of Research Excellence. Ngā Pae o te Maramatanga, or the National Institute of Research Excellence for Māori Development and Advancement, is one of New Zealand's seven officially recognised Centres of Research Excellence and presently supports more than 500 Māori doctoral students through mentoring programs, networking and fellowships.

In terms of improving higher education outcomes for Māori, the New Zealand case provides a few lessons for Australia. The highly successful national strategy brings together the following features:

- a national strategy for all levels of schooling with policy coherence about core ideas
- national education policy that works to advance the nation's aspirations for decolonisation through recognition of difference that is not another version of assimilation
- national policy that collaborates with Māori advocates
- development of a university model that provides a process for credentialing Māori knowledge and epistemology and economic interests.

## **Concluding comments**

In Australia, while there is limited research and evaluation that specifically focuses on the relationship between early school intervention and student participation in higher education, the work that has been done consistently indicates that a number of approaches are likely to make a positive difference, particularly for low SES background students. Indeed we can conceive of a repertoire of strategic interventions that together enhance availability, access, achievement and

aspirations. Strategic interventions that foster higher participation typically include programs with many of the following characteristics:

- collaboration
- early, long-term and sustained
- people-rich
- cohort-based
- communication and information
- familiarisation/site experiences
- recognition of difference
- enhanced academic curriculum
- financial supports and/or incentives.

Many initiatives include several of these characteristics, in order to simultaneously address availability, access, affordability, achievement and aspirations; others are particularly focused on only one particular characteristic.

#### *Collaboration*

Making a concerted difference requires collaboration across the sectors: schools, tertiary institutions, non-government organisations, regional authorities, families and communities. The trend in large-scale international programs is towards the involvement of all stakeholder groups in designing and delivering interventions. This ensures that programs are not built around false assumptions about what assists students to aspire to higher education and how they can be supported to make successful transitions and achieve a sustained level of high performance. Collaboration at all stages of program development and enactment means that processes of reciprocal feedback are likely to improve the quality of the intervention and its outcomes.

#### *Early, long-term and sustained*

A clear message that emerges from many of the studies is that earlier interventions are more likely to be successful and that it is too late in the last two years of schooling to maximise the effects of an intervention. By then academic achievement patterns are harder to turn around, aspirations are likely to be well established and students may have already selected or been counselled into subject selections and tracks that do not allow them access to the higher education trajectory they may have otherwise taken. Further, studies of the development of human skills shows that early and continued support for children is likely to have the greatest long-term payoffs (Heckman & Rubinstein 2001). Hence programs that are designed to work with primary school children and then continue as they transition into the middle years and on into high school would seem ideal.

### *People-rich*

Most successful programs incorporate mentoring of one kind or another. In other words they require the development of ongoing relationships between young people and those in a position to offer them specific guidance that relates to their situation and capacities. Mentors may include inspiring individuals in a discipline area (for example, scientists in schools), but mentors are equally likely to be graduates who come with similar life histories (for example, Indigenous people, working-class, women in non-traditional areas), or people who are at university qualifying for the targeted profession (for example, medicine, teaching, nursing, technology). Mentoring programs take a great deal of time to organise and support and need to be properly resourced in terms of training, travel costs and time commitment. Identifying key people or a single person in an institution whose position is dedicated to fostering higher education pathways and connections is also a productive strategy. The important point here is that programs that make a difference need to allow for ongoing conversations, advice and counselling rather than one-off events or products of a generic nature.

### *Cohort-based*

Another trend in the research was a move towards cohort approaches in intervention programs. This is not to suggest that programs that have targeted high-potential individuals should be discontinued. Rather that a supplementary strategy that looks promising focuses on working with classes or even larger cohorts of young people in a school or region. Such an approach works to change peer cultures at the same time as it supports individuals. Primary school students, for example, begin their experience with a university alongside their peers through a range of shared experiences which may include a series of visits to campuses, meetings with mentors and career counselling.

### *Communication and information*

A growing number of universities are using a variety of digital media technologies to produce high-quality, engaging materials and online sites for young people about university life and how to get there. Again, this is not to suggest that earlier strategies such as circulating brochures, school visits and so on are not effective; simply that there are other ways of supplementing that work which may be valuable to explore. Many studies, however, suggest that information and one-off communication sessions about universities may be less effective if they are not backed up with specific assistance in interpreting forms and making choices.

### *Familiarisation/site experiences*

Physically experiencing a university through a schedule of site visits designed both to inspire and familiarise young people have proven effective in many cases where they are combined with ongoing conversations about different options for study. In cases where young people would otherwise be unlikely to visit a university such opportunities can be significant in debunking fears and also in awakening the desire to attend. They get to see first hand what the university looks like, how it operates and what it means to be a student in that context. Such concrete familiarity can be particularly reassuring for students from regional and remote communities, for Indigenous students, and for students from non-English-speaking backgrounds when the visits enable conversations with community peers and/or elders.



### *Recognition of difference*

Historically, many programs specifically targeting low SES populations have tended to be designed in a compensatory fashion to make up for perceived or assessed educational gaps and deficits. Some of the interventions we highlight in this review start from the perspective that low SES communities have assets that should be recognised and valued as assets (for example, linguistic diversity, specific cultural knowledge). Some universities offer different entry pathways for young people where they are able to build a portfolio of evidence which may be considered in the application process.

### *Enhanced academic curriculum*

Studies that suggest that early intervention, followed by sustained support, have long-lasting payoffs also emphasise enhancing the quality of curriculum and pedagogy throughout schooling. In other words, it is not only sustained supplemental instruction and tutoring provided to children that counts, but the ongoing quality of everyday lessons. Across a range of national and international studies it is now clear that a quality curriculum emphasises deep knowledge and intellectual engagement; meaningful authentic task design and aligned systems of assessment; high expectations for all students; and supportive learning environments with well-qualified and well-rewarded teachers.

### *Provide financial supports and/or incentives*

Despite questions about how significant financial barriers actually are to low SES students' participation in higher education, most interventions in one way or another provide financial support or incentives and, when combined with other supports, financial contributions of various kinds do make a difference. Some promising studies indicate that investment needs to be considered in terms of the cohort's or individual's particular economic constraints, for example the specific financial needs of regional and remote students, or those of students whose part-time income may be essential to the family.

The characteristics of the interventions summarised above take time to put in place. Effecting change in educational institutions and communities is complex and relational. Increasingly providing and embedding infrastructure requires cooperation and long-term planning. As researchers and advocates for educational social justice, we have witnessed a range of excellent programs come and go over the decades. It is now time to build into institutional structures and funding mechanisms ongoing resources with an explicit equity target. Too many worthwhile equity innovations need to be re-invented annually or every few years according to the demands of short-term funding cycles.

In addition to identifying factors that have a positive impact on participation of low SES students in higher education, this review raises some questions about assumptions that have underpinned the field and that may need to be addressed in order for equity outcomes to be improved.

In closing, several questions for future research and policy development are posed.

- In what ways might higher education institutions and the school sectors collaborate on sustainable equity initiatives?
- How might a program of longitudinal research studies be designed to provide evidence of the impact of various strategies and initiatives?

- How might the best practices of specific interventions be implemented in ongoing infrastructure and policy?

These questions are complex and addressing them will require concerted action to develop reliable and comprehensive databases, and the corresponding research evidence, of programs and practices that make a difference. To bring about significant change will require new forms of collaboration and alliances that consider students' educational trajectories across the lifespan.

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