Deloitte Access Economics

The socio-economic benefits of investing in the prevention of early school leaving

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Contents

Overview of findings

A vast body of literature confirms the value of school completion. Payoffs accrue over the lifetime of an individual in a variety of ways including improved career paths, improved health and welfare, and improved social interactions. In Australia, 21 per cent of students do not complete secondary school. Students from a background of disadvantage – those who stand to gain most from school completion in terms of improved financial and life outcomes – are over represented among early school leavers.

Hands On Learning (HOL) is an established approach to reengaging students who are disengaging from formal schooling. HOL has demonstrated over 10 years of operation that it is effective in increasing retention rates among program participants and, more broadly, in the schools which these students attend. This approach is also associated with positive post-schooling outcomes, as demonstrated through surveys of former program participants.

The challenge

There are approximately 290,000 15 year olds in Australia today. If no further progress was made to prevent early school leaving, current early school-leaving rates suggest that 70,000 – or 21 per cent – of these would leave school before completion in 2016. Despite its demonstrated success, HOL is only offered to approximately 500 students annually – a fraction of the number of students who stand to benefit from such an intervention.

Schools currently deliver HOL predominantly through existing school funding; they do not receive additional, targeted funding from government for doing so. As such, it is likely that some schools find cost to be a prohibitive factor to the point where they are unable to provide the program, or are only able to offer the program on a part-time basis. Of concern, cost pressures are likely to be faced by schools that already have significant demands on their resourcing, such as those that educate large numbers of students from a background of disadvantage.

The opportunity

The analysis presented in this report finds that, when considering workforce outcomes alone, the net benefit of providing HOL to students between 1999 and 2012 is $1.6 billion in present value terms. This represents a $12 return to every $1 of investment in ensuring year 12 completions. These estimates, which reflect the tangible returns to investments in preventing early school leaving, are likely to understate the full socioeconomic benefit. That is, they do not account for the wider social – and largely intangible – benefits of remaining in school. These include positive impacts on health and mental illness, improved ability to participate in family life and positive engagement with surrounding communities.

The imperative

HOL has demonstrated that it is a successful and sustainable method for reengaging students with schooling. The program has inherently captured students from disadvantaged backgrounds and is therefore in strong alignment with the policy priorities of Australian governments today.

This study finds that, to date, the program has delivered net positive socioeconomic outcomes. On this basis, it can be concluded that HOL represents a sound economic and social investment in improving outcomes for disengaged, disadvantaged students.

One of the greatest motivations for the reforms put forward in the Review of Funding for Schooling (the 'Gonski Review') is the educational performance of students from backgrounds of disadvantage. Accordingly, it is in this area that the additional funding recommended by the Review panel would primarily be directed. The demonstrated success of HOL indicates that it has the capacity to play a potentially significant role in addressing this challenge – that is, in improving the educational outcomes of Australia's disadvantage youth; and for that matter their life outcomes as well.

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1 Introduction

Formal schooling plays a pivotal role in the development of informed, positive and productive young people. The outcomes of schooling are far broader than simply academic achievements. Schooling equips youth with the skills and knowledge necessary to make better life choices which lead to more productive pathways through adulthood.

Engagement with schooling through youth and adolescence has been found to be associated with positive outcomes in almost every facet of life — not only through improvements in employment and earnings — but also in health, family life and community participation and cohesion. Conversely, disengagement with schooling in these formative years has reported associations with high social costs, materialising as compromised economic productivity and prosperity, security and health.

In recognition of these significant long-term socioeconomic returns to educating the youth of today, the Commonwealth and state and territory governments invest heavily in the provision of accessible schooling to all Australians. However, despite the investments already made by government, there are still visible inequities in educational engagement, typically concentrated among disadvantaged cohorts of students. Compounding this is the fact that it is disadvantaged students to whom the greatest payoffs to investment in education would accrue.

It is precisely this cohort - that is, disengaged and disadvantaged young people – who are the focus of the Hands On Learning (HOL) method. HOL provides a targeted solution for this cohort of young people, helping them to reengage with formal schooling through alternative approaches to education. This method has been used in Australian schools for over 10 years and has provided services to over 3082 young people to date. Over its many years of operation, HOL has facilitated significant success for students enrolled in the program both while at school and after leaving school.

HOL is currently funded out of existing school budgets and does not attract any dedicated public funding. As such, funding is not provided with any level of certainty and the operation of the program through its years of expansion has become increasingly difficult for many participating schools and has reportedly inhibited other schools from implementing the program. Further, Hands On Learning Australia (HOLA) is using philanthropic funding to expand the reach of HOL into new schools and regions across Australia which will require new levels of investment to be sustained.

Reflecting this need, Deloitte Access Economics was commissioned by HOLA to conduct independent research on the socioeconomic benefits associated with investing in the HOL method. In doing so, this paper considers the case for public investment in the future of HOL.

1.1 Structure of this report

In light of the objectives of this study, the report is structured as follows:

- Chapter 2 outlines the rationale for government intervention in delivering education outcomes and describes the HOL method.
- Chapter 3 presents an estimate of the socioeconomic benefits and costs of the HOL method.

2 The case for government support of HOL

This chapter provides an overview of literature which considers the socioeconomic benefits of preventing early school leaving. The discussion then turns to the incidence of early school leaving and its prevalence among specific cohorts in the population. The chapter concludes with a case for government support of HOL, a way schools can work to prevent early school leaving.

2.1 The socioeconomic benefits of preventing early school leaving

Academic literature has long confirmed the conventional theory that sustained engagement in high quality education is directly related to the realisation of positive life outcomes for individuals and societies.[1] Past studies have found that from the perspective of the economy as a whole, early school leaving adversely effects gross domestic product (GDP) and labour force participation.[2] The Australian Social Inclusion Board (2010) finds that participating in schooling assists people to find employment, participate in community activities and improve their wellbeing. Education also provides a pathway out of disadvantage, particularly for people in low socioeconomic groups.

The following evidence-based discussion of socioeconomic benefits is organised around some of the more tangible key themes:

- the causal link between participation in formal education and increased levels of employment and income;
- the causal link between participation in formal education and improved health outcomes and life satisfaction;
- the causal link between participation in formal education and reduced criminal behaviour; and
- the intergenerational returns to participation in formal education.

2.1.1 Employment and income

Studies find that young people who do not complete school or gain equivalent education and training are more likely to become unemployed, stay unemployed for extended periods of time, earn lower wages and accumulate a lower level of wealth across the span of their lives.[3]

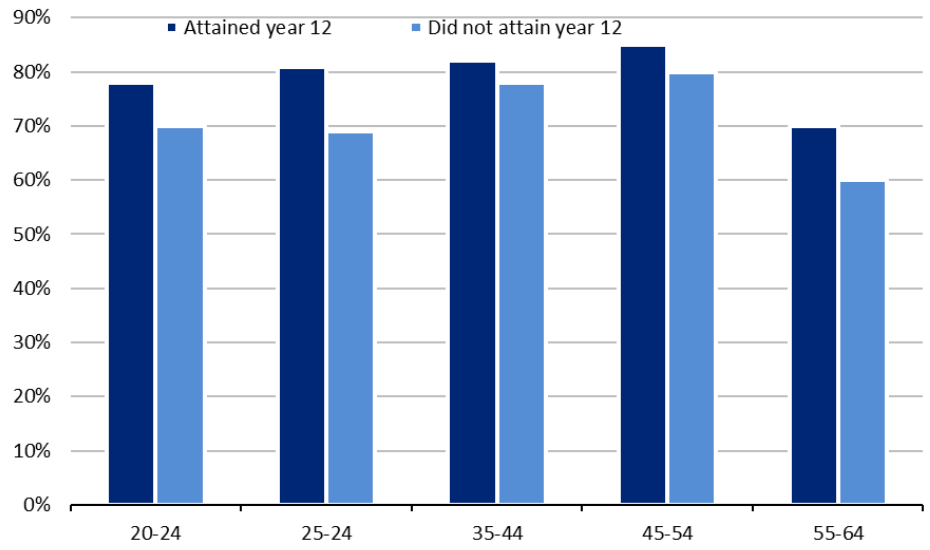
Chart 2.1 illustrates, by school completion status, the proportion of people in 2010 who were employed. Consistently, across all age groups, those who completed year 12 (or its equivalent) exhibited higher rates of employment than those who did not.

[1] Johnson 2004; Levin 2003; Lochner 2011; Wilkinson and Picket 2009; Hannushek and Woessman 2010

[2] ACER (1999); Access Economics (2005); Applied Economics (2002)

[3] Rumberger & Lamb (2003); OECD (2001); Levin (2010)

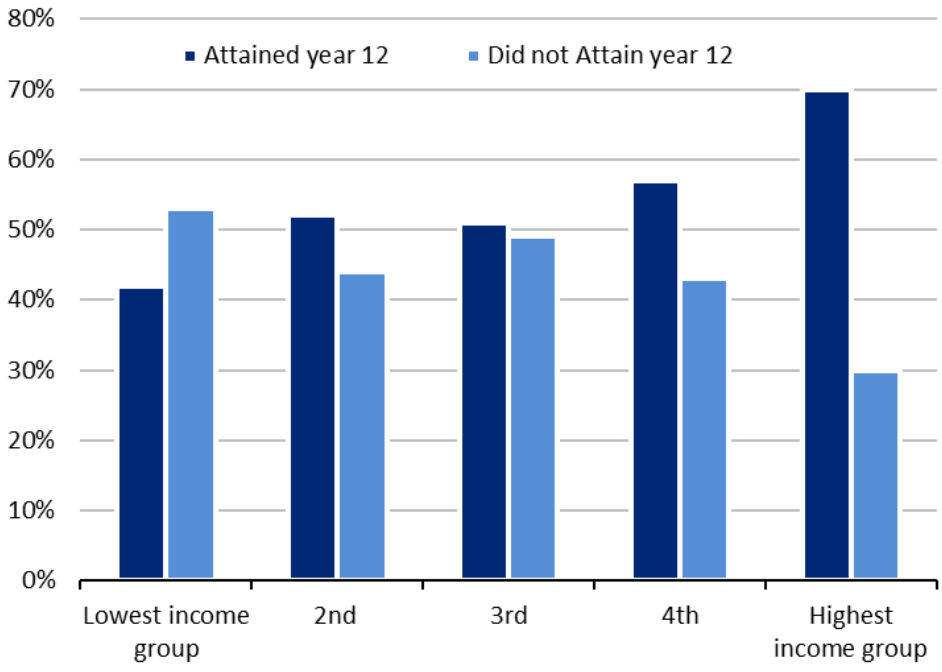
Chart 2.1 Proportion of people who were employed by Year 12 attainment and age – 2010 (Australia)



Source: ABS (2011)

Similarly, comparing the weekly income of those who are in the workforce (aged 20-64), Chart 2.2 shows that those who attained year 12 earn, on average, a higher level of income. The difference is most stark at the extremes. Of those in the highest income quintile, 70 per cent had completed schooling, while only 30 per cent had not.

Chart 2.2: Personal Gross Weekly Income from all Sources for 20-64 year olds by year 12 attainment – 2009 (Australia)



Source: ABS (2011)

2.1.2 Educational attainment and health

Health outcomes

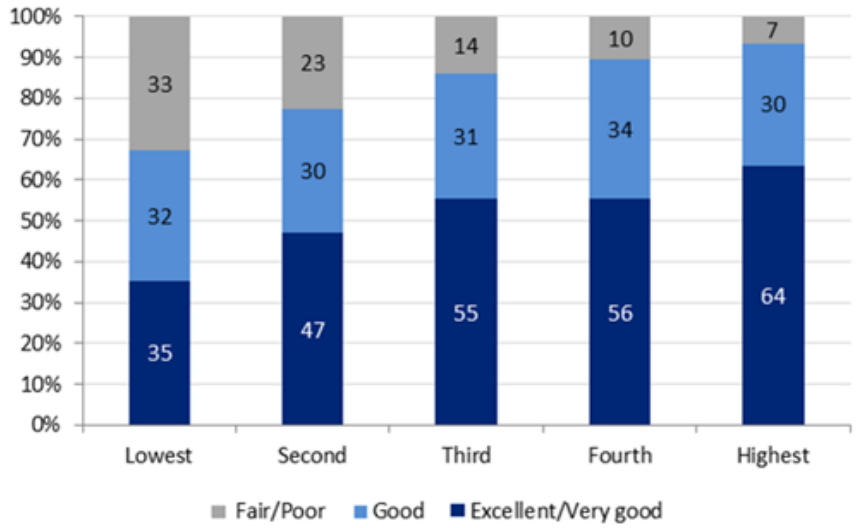
There is a growing body of literature that suggests a strong correlation between educational attainment and health. Indeed, the association is so persistent (even increasing) and evidenced across numerous countries and time periods that it has been established as a 'gradient'.[4] The literature in this area has it well documented that more educated individuals in turn, have better health later in life and better labour market prospects.[5]

Education can influence health through a range of complex mechanisms, for instance:

- through its relationship with labour market participation (employment) and thus income and access to health care and insurance;
- through knowledge formation and cognitive development, which impact decisions and behaviours;
- through the development of social networks and access to information and services; and
- through its association with health behaviours such as smoking and obesity and preventative service use.

To the extent that leaving school early reduces expected earnings and that poor health is more common in people who suffer from low levels of resources (Chart 2.3) or are unemployed, people who have left school early are more likely to experience poor health outcomes.[6] This in turn can result in poor labour market outcomes and affect family relationship, child development and other social outcomes, so these impacts have a reinforcing nature which can lead to entrenched disadvantage.[7]

Chart 2.3: Self-assessed health, by income quintiles, 2010



Source: ABS (2011) General Social Survey 2010, Cat No. 4159.0

[4] Conti et al 2010
[5] Currie, 2009; Cutler and Lleras-Muney, 2010
[6] ABS 2011
[7] Australian Social Inclusion Board, 2010

School completion affects risky health behaviours. For instance, in 2004 the prevalence of smoking among Australian adults was 30 per cent for people who had completed Years 10 or 11, but only 21 per cent for people whose highest level of formal education was Year 12 or post-secondary qualifications, while it was only 11 per cent for people who had attended university.[8]

People with less education (having left full-time schooling before age 16) or who are unemployed are also more at risk for common mental health problems, obesity as well as increased alcohol consumption.[9]

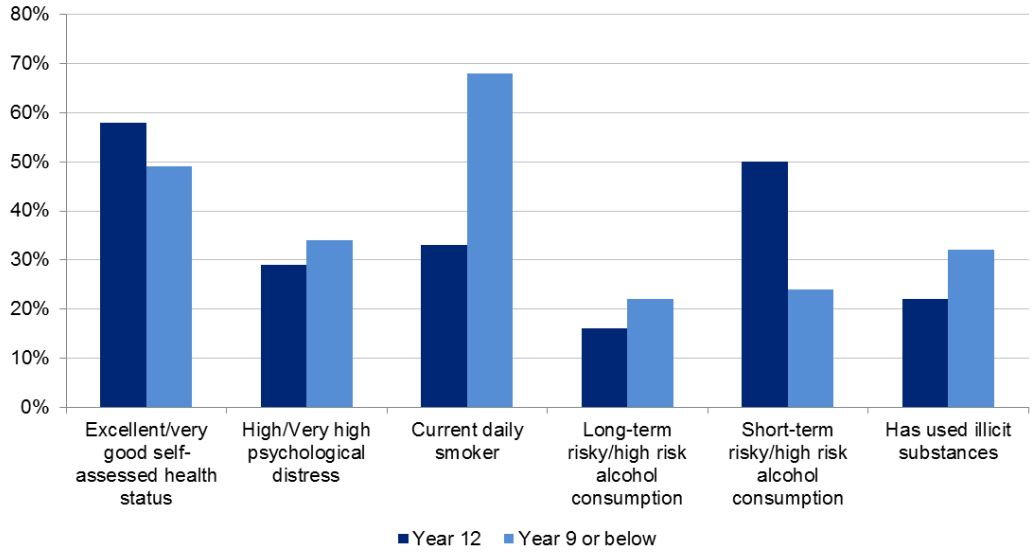
The health benefits of education are particularly pronounced among disadvantaged groups (see, for example, Chart 2.4). Results from the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) show that a higher level of schooling is positively associated with self-reported health status. Indigenous persons aged 15–34 years who had completed Year 12 were more likely to rate their health as excellent/very good than those who had left school at Year 9 or below (59 per cent compared with 49 per cent).[10]

A similar pattern of association was evident between higher levels of school completion and levels of psychological distress and risky health behaviours.

When compared with Indigenous people who had left school at Year 9 or below, those aged 15-34 years who had completed Year 12 were:

- less likely to be current daily smokers (34 per cent compared with 68 per cent);
- less likely to have reported high/very high levels of psychological distress in the last four weeks (29 per cent compared with 35 per cent); and
- less likely to have used an illicit substance in the last 12 months (23 per cent compared with 32 per cent).

Chart 2.4: ATSI health outcomes by educational attainment, 2010



Source: ABS, 2010

[8] Scollo and Winstanley, 2008
[9] Fryers et al, 2005; OECD 2006
[10] ABS 2010

Life satisfaction

The likelihood of experiencing financial hardship and poverty is increased for early school leavers and this can have a wide range of impacts including debt, homelessness and housing stress, family tensions and breakdown, boredom, alienation, shame and stigma, increased social isolation, crime, erosion of confidence and self-esteem, the atrophying of work skills and ill-health.[11]

Subjective quality of life complements more objective measures of wellbeing such as income and health. Life satisfaction is positively correlated with employment status, but decreases with hours worked. The unemployed were least satisfied with life, with a satisfaction score of 7.5 for unemployed compared with a satisfaction score of between 7.6 and 8.2 for people in employment[12]. Life satisfaction was also positively correlated with income (people in the lowest income quintile had a life satisfaction score of 7.8 compared with 8.1 for people in the highest income quintile).[13] To the extent that employment and income are dependent on educational attainment, school engagement has a positive impact on life satisfaction.

2.1.3 Educational attainment and crime

Young people with insufficient education and/or poor literacy skills are disproportionately found within the criminal justice system. Wolfe and Haveman (2002) cite a number of studies showing that schooling is associated with reduced criminal activities and that engagement in formal education is associated with a reduction in recidivism. Callan and Garder (2005) studied people in the corrective system and found that higher levels of education implied a reduced likelihood of returning to the corrective system.

ABS data indicates that prisoners have a lower level of educational attainment than the general Australian population.[14] In 2006, almost two-thirds of the general population aged 25–34 years had completed Year 12, compared with just 14 per cent of prison entrants in that age group. More than one-third of prison entrants (36–37 per cent) had a highest completed level of schooling of Year 9 or less, compared with around one in twenty (4–8 per cent) of the general population.

Moreover, recent empirical studies have begun to uncover a causal relationship between educational attainment and reduced crime, particularly property crime.[15] Causality aside, there are three main channels through which schooling can influence criminal participation that have been identified in the literature:

- **income effects** – education increases the returns to legitimate work and/or raises the opportunity costs of illegal behaviour;
- **time availability** – time spent in education limits the time available to participate in criminal activity; and
- **patience and/or risk aversion** – education can increase patience, which reduces the discount rate of future earnings and hence reduces the propensity to commit crimes. Education may also increase risk aversion that, in turn, increases the weight given by

[11] McClelland and Macdonald (1998)
[12] Each year, HILDA Survey respondents are asked, *'All things considered, how satisfied are you with your life?'* The response scale runs from 0 to 10, where 0 means 'completely dissatisfied' and 10 means 'completely satisfied'.
[13] The Melbourne Institute (2011)
[14] AIHW (2009)
[15] Machin (2011)

individuals to a possible punishment and consequently reduces the likelihood of committing crimes.[16]

The benefits of crime reduction can be monetised in the sense that it results in costs avoided, and indeed, there is significant data and literature on the social and economic costs of crime. The Australian Institute of Criminology (AIC) estimates that crime costs Australia nearly $36 billion a year – some 4.1 per cent of the nation's GDP. Social benefits associated with crime reduction include the following costs avoided:

- costs to the victim (productivity and wage costs, medical costs and quality of life costs);
- property loss;
- incarceration costs;
- law enforcement and judicial costs; and
- private security measures.

A small body of literature links crime reduction benefits – in monetary terms – to educational attainment. For example, a US study that investigated the effect of high school graduation on incarceration found that a ten percentage point rise in the rate of high school graduation would cut the murder arrest rate by between 14 per cent and 27 per cent, and a one percentage point increase in the graduation rate would lead to a reduction in crime of between 34,000 and 68,000 offences, with a social benefit of $0.9 billion to $1.9 billion per annum.[17]

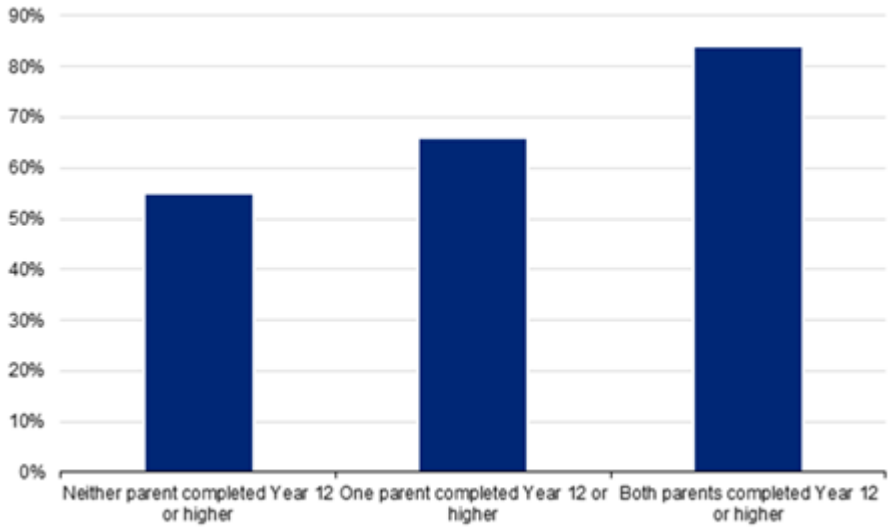
People who have not completed Year 12 are not only more likely to commit a crime; they are also more likely to be victims of crime themselves. For instance, people who are unemployed are more likely to be a victim of assault (9.8 per cent) than people who are employed (5.5 per cent).[18]

2.1.4 Intergenerational impacts

Even if health and social welfare benefits are not accrued immediately as a result of additional education attainment (i.e. the individual's health and welfare outcomes are not improved as a result), there is a large body of evidence suggesting that educational attainment works to break the cycle of intergenerational disadvantage by impacting outcomes for succeeding generations. Indeed, people with at least one parent with a year 12 completion are much more likely to complete year 12 themselves (66 per cent versus 55 per cent of individuals, Chart 2.5)

[16] Lochner and Moretti (2004); Tauchen et al (1994)
[17] Feinstein (2002)
[18] Australian Social Inclusion Board (2010)

Chart 2.5: Proportion of persons who complete year 12, by parents' highest educational attainment



Source: ABS (2011)

There is undoubtedly an identified link between intergenerational disadvantage and low educational attainment—inadequate education and training is a common factor in Australia's most disadvantaged communities.[19] According to the ABS Survey of Education and Training, only 50–60 per cent of 20–24 year olds living in the most disadvantaged areas (as measured by the SEIFA Index of Relative Socio-economic Disadvantage) had completed year 12, compared to around 75 per cent of that age group as a whole. Thus, breaking the intergenerational cycle of low educational attainment will flow on to alleviating other forms of disadvantage such as low socioeconomic status and poor health and welfare outcomes.

2.2 Inequities in the incidence of early school leaving

An equitable education system is one in which personal and social circumstances do not limit a student's ability to participate and achieve in high quality education. It has been argued that maintaining a fair and inclusive education system is one of the most powerful levers available to develop and maintain an equitable society.

Overall, the number of Australian students who attain a Year 12 or equivalent qualification has progressively increased over the past decade. In 2011, ABS statistics reported that the rate of early school leaving among Australian students was 21 per cent.[20] The risk of early school leaving is still higher in Australia than the average across OECD nations and the likelihood of an early school leaver returning to education is very low.[21] Of greatest concern, however, is that this non-completion is concentrated amongst students from disadvantaged backgrounds.

[19] Vinson et al (2007)

[20] ABS (2011)

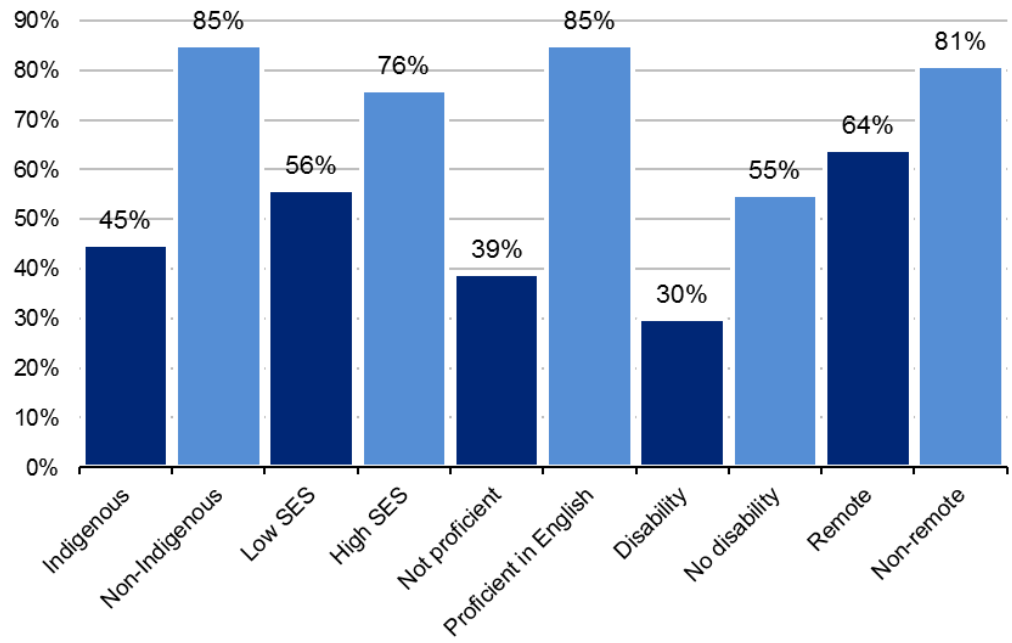
[21] OECD (2009)

The recently released Review of Funding for Schooling (2011) ('Gonski Review') finds five factors of disadvantage have a significant impact on educational outcomes in Australia:

- Low socioeconomic status;
- Indigeneity;
- English language proficiency;
- Disability; and
- School remoteness.

There are variations in student outcomes within these subcategories of disadvantage, and indeed, complex interactions between them, however, across them all, there is a consistently lower than average rate of Year 12 completion. Considering these cohorts at a high-level, Chart 2.6 provides a broad overview of the incidence and prevalence of early school leaving among these cohorts.[22]

Chart 2.6 Year 12 attainment by disadvantage category



Source: Gonski Review of Funding for Schooling, 2011; ABS (2008)[23]
Note: disability and English proficiency figures are taken for subjects aged 15-64, whereas Indigeneity and remoteness figures use 20-24 year olds.

As discussed in Section 2.1, school completion is closely related to associated positive life outcomes. To the extent that lower rates of school completion are associated with backgrounds of disadvantage, the heightened prevalence of early school leaving among this cohort will only serve to further the likelihood of entry into life-long disadvantage for such students.

[22] Note that the data sets and years used to compile this graph are different and as such some discrepancies may be related to inconsistencies in the data.

[23] ABS (2010)

Typically, costs of early school leaving are much higher for students from a background of disadvantage. In lieu of formal education, students from disadvantaged backgrounds are also more likely to suffer a lack of access to informal education through family and community networks. This increases the likelihood that without the positive influences of schooling, students will pursue life and career pathways associated with lower if not negative, payoffs.

If early school leaving among students of a disadvantaged background is associated with a lower or more negative payoff, then, by extension, investing in re-engaging such students with schooling will be associated with a higher than average return. The work of Chui and Khoo (2005) supports this, finding that additional money invested in education is likely to increase the outcomes of a student from a background of lower levels of 'privilege' more than one from a background of privilege. The interpretation of this finding, as adopted by the Gonski Review, is that directing additional resources towards the most disadvantaged students is a cost efficient strategy that will have the greatest impact on improving overall performance of a country's education system.

2.3 Policy environment

In recent years, Australian governments have reaffirmed their commitment to improving the equity of the schooling system. As part of the Melbourne Declaration, Australian Governments commit to working with all school sectors to:

- Close the gap for young Indigenous Australians
- Provide targeted support to disadvantaged students
- Focus on school improvement in low socioeconomic communities.[24]

This is reinforced by the National Education Agreement (NEA) which sets out a number of indicators for Australian schooling, including measures to test that schooling promotes social inclusion and reduces the educational disadvantage of children.

Through the NEA, the Australian Government has also placed strong emphasis on the importance of encouraging Year 12 completion among students across the country. Two objectives relating specifically to Year 12 attainment are:

- Lifting the Year 12 or equivalent attainment rate to 90 per cent by 2015
- To at least halve the gap for Indigenous students in Year 12 attainment rates by 2015

More generally, Australian and state governments have invested substantially in supporting and improving outcomes for disadvantaged students for many decades. The funding is provided with the intent of equalising opportunities between students who are from a disadvantaged background in alignment with those who are not from a disadvantaged background.

Funding to address disadvantage is generally allocated through recurrent funding, for example in the form of loadings, and targeted funding.

- **Australian Government funding for government schools** – General recurrent funding is provided through National Schools Special Purpose Payments (SPPs). Funding is allocated to states and territories based on their share of FTE government school enrolments, with payments made to state and territory treasuries on a monthly

[24] MCEECDYA (2008)

basis. States and territories are provided with discretion over the distribution of this funding.

- **Australian Government funding for non-government schools** – Recurrent funding is distributed to schools through an SES funding model. Under this model, schools are attributed an SES score based on the socio-economic profile of the ABS Census Collection Districts in which its students reside. Recurrent funding is provided on a per student basis, with a sliding scale based on SES scores. Funding rates range from 70 per cent of AGSRC for schools with an SES score of 85 and below, to 13.7 per cent of AGSRC for schools whose SES score is 130 and above. Loadings for remoteness and Indigenous Supplementary Assistance are also included as part of recurrent grants.
- **State and territory government funding** – State/territory governments are the primary funders of government schools. Funding models differ by jurisdiction. However, all jurisdictions allocate resources to address disadvantage, either through loadings to recurrent funding or through targeted programs.
- **National Partnerships** – There are eight major schools NPs, including three Smarter Schools NPs for Improving Teacher Quality, Low SES School Communities and Literacy and Numeracy. The NPs generally provide targeted funding to school systems. NPs usually have a co-investment requirement that obliges states and territories to continue their own expenditures, in addition to funding provided by the Australian Government.

Using survey data, Rorris et al (2011) estimated that approximately $4.4 billion was spent by governments on programs for disadvantaged students in 2009-10. This includes $2.8 billion for students with disabilities, $585 million for students from low socioeconomic backgrounds, $436 million for Indigenous students, $333 million for students with ESL needs and $337 million for students in remote areas.

Despite this substantial level of investment in disadvantaged students, however, as discussed in Section 2.2, significant discrepancies in outcomes for students from disadvantaged backgrounds in comparison to the average student continue to exist. The 2011 Gonski Review concludes that a "significant shift is required in the way all governments provide funding to address educational disadvantage", citing the complexity of existing funding arrangements, and the failure of many existing programs to identify and address individual student needs within cohorts. The Review continues to state that existing arrangements "fail to take account of the significant impact of concentration of disadvantage at the school level" and that students with special needs as well as the schools they attend should be compensated with additional equity funding.

The Review suggests funding arrangements be reviewed with a view to simplifying them and improving transparency, to ensure that funding is directed to the disadvantaged students who need it most.

In this policy environment, governments are increasingly interested in revisiting and reassessing their current funding approaches to addressing disadvantage amongst school aged students, as signalled by the recent commission of the Gonski Review.

2.4 Hands On Learning Australia

The Hands On Learning Method

HOLA has supported Victorian and Queensland schools for over 10 years to deliver HOL. The HOL method is an in-school early intervention program run one day a week for students at risk of disengagement from school. HOL provides alternative approaches to education, engaging students in creative construction projects.

The program operates with the express objective of using alternative approaches to assist and facilitate disengaged and 'at risk' high school students (years 7 to 10) to reengage with formal schooling. This approach has been validated by the National Foundation for Educational Research as well as the Consortium of Institutions for Development and Research in Education in Europe.

Key recommendations emerging from the research conducted by these organisations focused on providing alternative education[25] environments and learning options, as well as offering support and direct monitoring of student attendance and behaviour in class. HOL's approach reflects these recommendations

The target population of Hands On Learning

Currently, the HOL has 540 participants of which 40 per cent and 48 per cent are Years 8 and 9 students respectively. Participants are characterised as having acute welfare and social needs, commonly from a background of socioeconomic disadvantage and at risk of disengagement from education. 29 per cent of participants have been identified as having mental health issues such as Attention Deficit/Hyperactive Disorder (ADHD). The most common behavioural issues observed in HOL students include disengagement with learning, disruptive classroom behaviour and social isolation.

The schools that deliver Hands On Learning

The HOL program began in the Frankston area, in Victoria's bay side region, and continues to have a strong presence in that area. Schools employing the HOL method are now also spread throughout Gippsland, Geelong, and North East Victoria. In total, the HOL approach is operating in 21 schools across Victoria, as well as in Gordonvale State High School in Queensland.

The schools in which HOL is currently offered are typically characterised by a higher level of socioeconomic disadvantage amongst students. The Index of Community Socio-Educational Advantage (ICSEA) is a scale that represents levels of educational advantage. A value on the scale assigned to a school is the averaged level for all students in the particular school. The average ICSEA score in Australian government schools is 1000, a score less than this represents relative disadvantage and conversely a score greater than this represents relative advantage. The average ICSEA score for current HOL schools is 971.6.

Successes to date of Hands On Learning

Over its 10 years of operation, HOL has had considerable success in generating improved outcomes for disadvantaged students that support the recommendations of the Gonski Review, as well as the two key COAG objectives pertaining to students at disadvantage.

[25] National Foundation for Educational Research (2005)

The program has been successful in achieving the following key outcomes to date[26]:

- Real retention rates for HOL students have been above 95 per cent each year for the 10 years to 2009
- Real retention rates in schools which use the HOL method have been approximately 10 per cent higher than the State average for the 10 years to 2009. Both this point and the previous one directly support the COAG objective of 90 per cent Year 12 or equivalent attainment for students across the country by 2015
- Unemployment rates amongst former HOL students averaged 2.2 per cent in 2006, compared to 10.8 per cent for Australians aged 15-24 in the same period
- In 2011, more than an 80 per cent reduction in school detentions was reported amongst HOL students who joined the program in 2010.
- In 2008, HOL partnered with the Education Queensland Indigenous Schooling Support Unit to implement the HOL program in the Northern Peninsula Area State College Bamaga. By the end of the first term, the College had achieved a 650 per cent increase in student attendance, as well as a significant reduction in school suspensions. The HOL program, through engaging the Indigenous community, directly contributes to the second of the COAG's key goals for supporting students at disadvantage.

Funding of Hands On Learning

The HOL method is provided by schools. A school which provides the program attracts no additional or targeted funding to support resourcing the program. Rather, schools must fund the program by redirecting existing funding towards addressing the needs of disengaged students. In some instances, schools have been able to attract the support of philanthropic organisations brokered by HOLA.

Schools that utilise HOL incur two broad categories of costs associated with adopting the HOL method: salaries for artisan-teachers, and a small budget for materials and tools. Salary costs account for over 90 per cent of total costs and vary depending upon the experience of the, typically, teacher aides who are employed as artisan-teachers.

In 2012, the schools which provided HOL were estimated to spend $1.2 million on the provision of HOL.

Hands On Learning Australia, the harm prevention charity, operates solely on the provision of Philanthropic support. The focus of HOLA's work is to provide training and support for schools to effectively implement the HOL method.

2.5 The rationale for the provision of government support

Educational attainment generates benefits for both the individual and society more broadly. These include improved employment outcomes, ongoing economic development, increased living standards and enhanced social inclusion. However, without government support, individuals typically underinvest in their own education relative to what is socially

[26] HOLA conducted a Likert survey on 136 students in five schools, concluding from a paired t-test that HOL had statistically significant benefits for intra-personal skills, inter-personal skills, self-management, basic literacy and numeracy skills and school attachment and retention

optimal – in other words, there is market failure. Data indicates that underinvestment is particularly pronounced amongst students from disadvantaged backgrounds – to whom the greatest returns to educational investment would be expected to accrue.

The past successes of HOL indicate that the method is effective in re-routing individuals from a path of disengagement with schooling towards reengagement and, consequently, the subsequent benefits which flow from school completion. Despite its successes, however, HOL is only offered in a limited number of schools to a very small proportion of students at risk of disengaging from school.

Schools currently bear the burden of funding HOL provision from their existing budgets. It is possible that this cost may be prohibitive for certain schools, particularly those which already face cost pressures. Of concern, schools which have high levels of students with a background of disadvantage may find it particularly difficult to allocate funds towards HOL given the already elevated costs of educating students with special needs. It is to these schools, however, that HOL may be of greatest benefit.

The existence of positive externalities of investing in educational attainment, and the proven success of the HOL method in promoting educational attainment, provides a prima facie case for government investment in HOL. This case is amplified by the fact that the returns to educational investment are particularly high for disadvantaged youth, which is the cohort being targeted by HOL.

Nevertheless, positive externalities alone do not provide a sufficient justification for government intervention. There must be a suitable socio-economic return on public investment – that is, the benefits must outweigh the costs – and the initiative must align with governments' policy priorities. These topics form the focus of Chapters 3.

3 Estimating the net benefit of preventing early school leaving

Between 1999 and 2012, over 30 schools used the HOL method to support 3082 students. The estimated cost of providing this support, in 2012 dollars, is approximately $2300 per HOL student. To date, schools have funded the delivery of the program out of their own budgets, that is, they have received no additional public funding to provide the program.

School completion among students who participated in the HOL program in the past has consistently exceeded 95 per cent, higher than the Australia-wide average of 86 per cent and the COAG 2015 target of 90 per cent. The students who are enrolled in HOL are selected on the basis that they are on the cusp of disengagement, such that, in the absence of any effective intervention they would be likely to leave school before completing year 12. That is, under a scenario in which HOL had not been offered to these students, school completion would more likely have been close to zero per cent.

A survey of past HOL participants found that after leaving school, 76 per cent are employed, 22 per cent have entered into post-school training and 2 per cent are unemployed.[27] If, indeed, these students had left school early, an ABS survey of early school leavers indicates that only 45 per cent would likely be employed, 21 per cent in post-school training and 33 per cent would likely be unemployed.[28]

As discussed in Chapter 2, higher levels of education attainment and employment are associated with a broad range of positive life outcomes. To the extent that HOL encourages students to choose a pathway of school completion and employment, over a pathway of early school leaving and a lower probability of employment, program participants face an increased probability of realising these positive life outcomes.

The purpose of this chapter is to discuss the socioeconomic benefits resulting from the HOL investment in disengaged students. The discussion is presented in two parts. First, benefits which are readily quantified – specifically, expected increases in average life-time income – are considered against the costs of providing HOL and any consequential costs of further education (school completion and post-school training). Second, benefits which are difficult to quantify, but are nonetheless observed amongst past HOL participants in post-program participation interviews are discussed qualitatively.

3.1 Quantitative estimation

A stylised model was built to estimate the quantifiable, long-term net benefits for a disengaged student who is enrolled into HOL. The model utilises data obtained through a survey of past HOL students on post-schooling outcomes and ABS data to calculate the difference in expected labour-force payoffs – that is, expected average life-time income – for students who participate in HOL and those who do not.

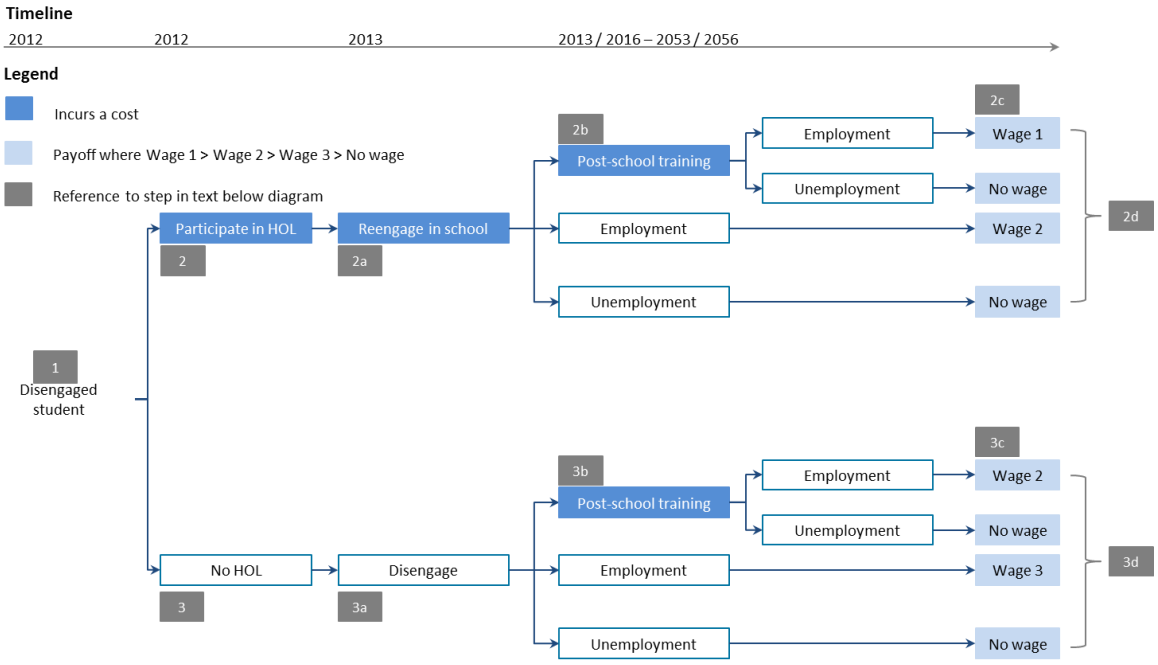
[27] MIPS (2006)

[28] ABS (2010)

3.1.1 The model

The model calculates the difference in expected earnings and costs over a 40 year time period between a disengaged student who participates in HOL and one who does not. To illustrate how the model is built, Figure 3.1 presents an example of how the model would compute outcomes for a year 9 student who, in 2012, is at risk of disengaging from schooling and has the opportunity to enter into HOL at their school in that year.

Figure 3.1 Pathways for a disengaged student



1. The disengaging student chooses to participate in HOL or to not participate in HOL (in practice, the student is selected by the school)

2. If the student participates in HOL, the school reallocates $2300 from a competing priority within their budget towards funding HOL participation

    a. The student reengages with school and continues to complete year 10, 11 and 12. This schooling is associated with a cost of approximately $50,000[29]

    b. The student enters the workforce in 2016. In line with HOL survey results, the student faces a 76 per cent probability of being employed, a 22 per cent probability of entering into post-school training and a 2 per cent probability of becoming unemployed.

    ABS data indicates that a student who enters into post-school training has a 76 per cent probability of subsequently gaining employment. As such, the student faces a 92 per cent probability of eventual employment and an 8 per cent probability of eventual unemployment.

[29] This is the sum of the cost of schooling in 2013, 2014 and 2015. The cost of schooling is assumed to grow year on year.

c. Dependent on their post-schooling destination, the student earns either the average wage of a student who has post-school training, the average wage of a student who has completed year 12 but has no post-school training, or, if unemployed, earns no wage at all. The model assumes that the student continues on this path for the remainder of their earning life-time (in the model, this is 40 years) and that this can be entirely attributed to the intervention.

d. The expected payoff of participating in HOL is calculated as the net present value of expected income less the cost of post-school training.

3. If the student does not participate in HOL, the school does not pay for HOL participation. The $2300 is spent elsewhere by the school.

   a. The student, in the absence of effective intervention, continues on a path of disengagement and leaves school before year 10. No further school enrolment costs are realised for this student.

   b. The student enters the workforce in 2013. In line with ABS early school leaver survey results, the student faces a 45 per cent probability of being employed, a 21 per cent probability of entering into post-school training and a 33 per cent probability of becoming unemployed.

      Assuming that 76 per cent of students who entered post-school training attain employment, the student faces a 61 per cent probability of eventual employment and a 39 per cent probability of unemployment.

   c. Dependent on their post-schooling destination, the student earns either the average wage of a student who has post-school training, the average wage of a student who has completed year 12 but has no post-school training, or, if unemployed, earns no wage at all. The model assumes that the student continues on this path for the remainder of their earning life-time (in the model, this is 40 years).

   d. The expected payoff not participating in HOL is calculated as the net present value of expected income less the cost of subsequent post-school training.

The difference between the expected payoffs between the two paths represents the stylised net benefit of preventing early school leaving in this manner.

Assumptions

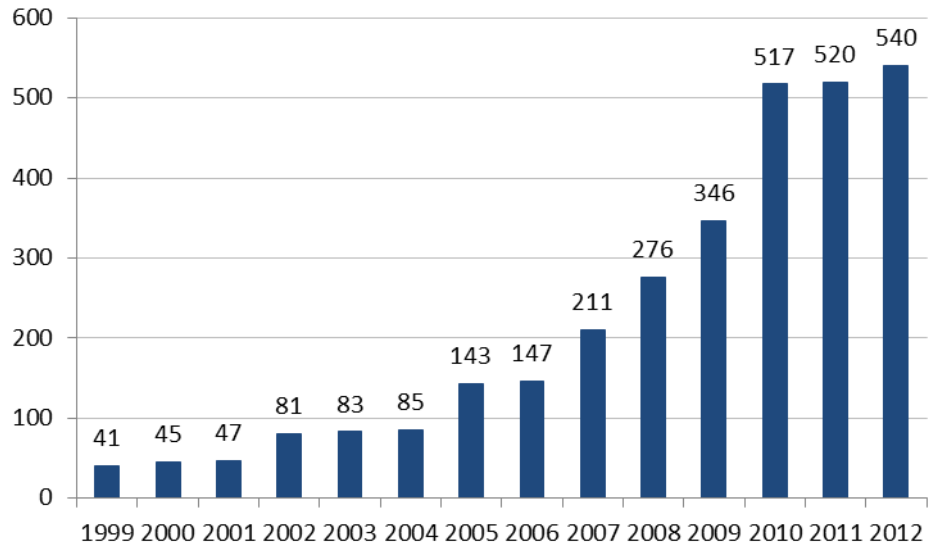
Table 3.1 outlines the assumptions which underlie the model.

Table 3.1 Modelling assumptions

Assumption	Value	Source / comments
Outcomes for students if in HOL		
# Hands On Learning	(see Chart 3.1)	Hands On Learning Australia (2012)
% training	0.22	MIPS Schools Data Collection, 2006
% training; employed	0.76	ABS Survey of Income and Housing (2007-08)
% training; unemployed	0.24	ABS Survey of Income and Housing (2007-08)
% employment	0.76	MIPS Schools Data Collection, 2006
% unemployment	0.02	MIPS Schools Data Collection, 2006
Outcomes for students if not in HOL		
% training	0.21	ABS (2010), Catalogue 4120.0 Australian Social Trends
% training; employed	0.76	ABS Survey of Income and Housing (2007-08)
% training; unemployed	0.24	ABS Survey of Income and Housing (2007-08)
% employment	0.45	ABS (2010), Catalogue 4120.0 Australian Social Trends
% unemployment	0.33	ABS (2010), Catalogue 4120.0 Australian Social Trends
Payoff schedule		
$ Average wage (1) ($2012)	$41,000	ABS Survey of Income and Housing (2007-08)
$ Average wage (2) ($2012)	$34,000	ABS Survey of Income and Housing (2007-08)
$ Average wage (3) ($2012)	$18,000	ABS Survey of Income and Housing (2007-08
$ if Unemployed (social cost)	0	DAE
Real wage growth	2%	DAE
Discount rate	5%	DAE
Costs		
Cost of HOL per student	$2300	Hands On Learning Australia (2012)
Cost of 1 year of schooling ($2012)	$15,414	Productivity Commission, Report on Government Services (2012)
Annual growth in schooling costs	4.5%	Derived from National Report on Schooling (2000 – 2008)
Cost of 1 year of TAFE training	$3000	DAE

Participation in HOL between the years of 1999 and 2012 is presented in Chart 3.1 below.

Chart 3.1 Participation in HOL 1999 - 2012



Limitations

The model is stylised in that each modelled participant is only able to choose one earning pathway and then do not switch year on year, for example, they do not switch between employment and unemployment.

It accounts only for average payoffs that can be readily monetised and does not consider other potential payoffs to HOL participation. **That is, it is not an all-inclusive estimation of the costs of early school leaving, nor a complete measure of the value of investing in HOL.**

It is assumed in the model that an unemployed person does not earn a wage, nor impose a social cost. In reality, it is likely that unemployed persons would impose some level of cost on society. These costs could include, for example, additional costs of healthcare or justice system costs. These costs are not accounted for in the model as they are difficult to quantify with a suitable degree of certainty and would be expected to vary on a case-by-case basis. Any approximation would be rough and, as such, largely uninformative. Accordingly, these costs are instead discussed qualitatively in Section 3.2 below.

With these caveats in mind, though stylised, the model provides a useful illustration of the magnitude of net benefits that could be expected to flow – and indeed, have already been realised – as a result of investment in the HOL program.

Calculations

The model calculates expected earnings for a student over the 40 years *after* they enter the workforce. For example, for a student who participates in HOL in 2012, continues schooling for three years and then pursues post-school training for two further years, their working life is assumed to occur between 2018 and 2058. By way of comparison, for a student who does not participate in HOL and enters straight into the workforce in 2013, their lifetime earnings are calculated between 2013 and 2053.

Modelling results are reported in Section 1.1.2 below. Results are presented for the net present value of quantifiable benefits, net of costs, for the operation of the program

between 1999 and 2012. The net benefits which accrue to program participants in 2012 alone are also presented. Finally, estimates of net benefits under two future scenarios of varying levels of program expansion are presented.

3.1.2 Modelling outcomes

Net benefits of HOL operation to date

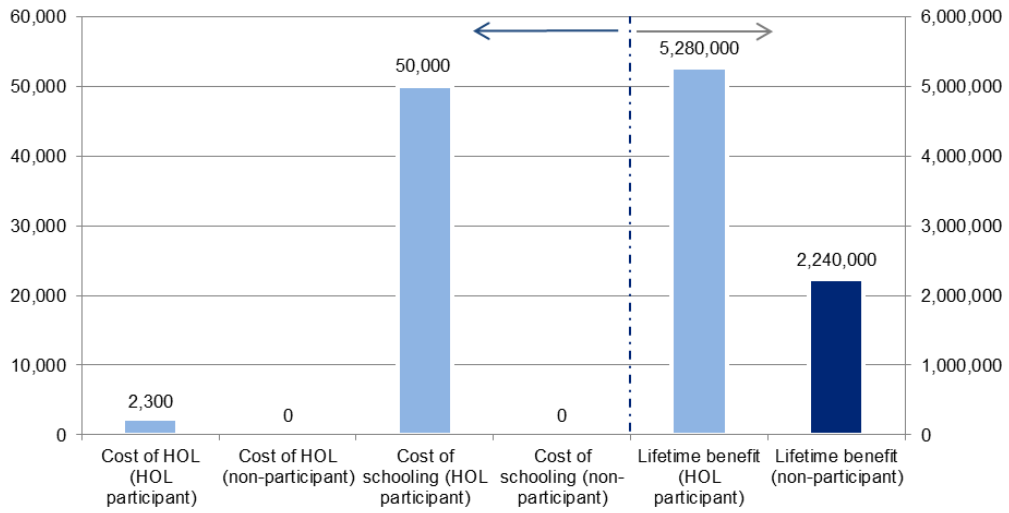
Between 1999 and 2012, 3,082 students have participated in the HOL program. The modelling results indicate that for this cohort, the benefit of program participation, calculated as improvements in average lifetime earnings, equates to $1.8 billion in net present value terms. Measured against the cost of HOL program provision and consequent costs of schooling reengaged students, $154 million, the net benefit of program provision to this cohort of students is $1.6 billion in net present value terms (Table 3.2). This represents a benefit to cost return of $12 per $1 invested in reengaging and schooling disengaged students where these assumptions hold.

Table 3.2: Scenarios of expanding HOL operation

	Outcomes for students between 1999 and 2012
Benefit	$1.8 billion
Cost	$154 million
Net benefit	$1.6 billion

To contextualise these figures, consider once more the example of the year 9 students in 2012 used to illustrate the model in Section 1.1.1. Chart 3.2 illustrates the payoffs associated with the two pathways the student was faced with (to participate in HOL or to not participate in HOL) in 2012.

Chart 3.2 Differences in outcomes for a 2012 student at risk of disengagement who participates in HOL and for an at-risk student who does not participate in HOL



Note. This graph does not include the cost of post school training because the student in the example doesn't pursue this path.

If this student participates in HOL, the school allocates $2300 of funding towards HOL participation. The government provides $50,000 in funding over the next three years for school enrolment and the student completes year 12 in 2015. The expected value of lifetime earnings for this student as they leave school is $562,260 greater than in the counterfactual scenario where the student did not complete schooling.

It is important to note that the cost of HOL alone, $2300, only represents a small proportion of total costs. The majority of costs included in the model are those associated with the three additional years of schooling which reengaged students undertake, compared with early school leavers. All of the benefits cannot reasonably be ascribed to HOL participation alone, indeed it is the years of engagement with schooling and training that follow HOL participation which increase the earning potential of students in the labour market.

However, HOL is the ***trigger*** which re-routes students from a path of disengagement towards a path of engagement. In the program's absence, were no further actions taken to reengage HOL students, the net benefit of $1.6 billion calculated in the model is not expected to materialise.

Net benefit of expanding HOL operation in the future

There are approximately 290,000 15 year olds in Australia. Applying current early school-leaving rates, 21 per cent, if no further progress were made to prevent early school leaving, 70,000 of these 15 year olds will leave school before completion in 2016.

In 2012, HOL was provided to 540 middle-school students in Australia. The model calculates that the lifetime net benefit these students alone will accrue is equivalent to $277 million in net present value terms.

Consider a scenario where the program were extended such that it were offered in a greater number of schools – targeting those with the greatest number of disengaged, disadvantaged students – and program participation were expanded to be equivalent to 5000 per year. The lifetime net benefit of program participation for these students would be equivalent to $2.6 billion in net present value terms. If it were offered to 10,000 students, then net benefits would be equivalent to $5.1 billion in net present value terms (Table 3.3). In all three scenarios, the program would 'break even', that is, costs would be matched by the sum of benefits, within 10 years of the initial investment – 5 years after the majority of students enter into the workforce.

Table 3.3: Scenarios of expanding HOL operation

Scenario: number of HOL students	540 (Current, 2012)	5000	10,000
Benefit	$303 million	$2.8 billion	$5.6 billion
Cost	$26.5 million	$245 million	$490 million
Cost, HOL only	$1.2 million	$11.5 million	$23 million
Net benefit	$277 million	$2.6 billion	$5.1 billion

Once more, it is important to note that the cost of HOL provision itself is small. The difference in program delivery costs between provision to 540 students and 5000 students is only $10 million, where the difference in net benefits is $2.3 billion. It is likely that the administrative costs of delivering the HOL program across such a vastly increased

population of students may result in higher operational costs. That said, it is also likely that if delivery were extended to this level, some economies of scale would be realised and per capita costs of program provision could be reduced.

3.2 Non-quantifiable benefits

Programs such as HOL serve to improve equity in the community, by enabling disadvantaged individuals to attain the economic and social benefits associated with employment, further education and/or a meaningful role in their community. Furthermore, the program leads to other direct benefits for the community, including: the promotion of integrated local services, the building of community capacity and the fostering of innovative local solutions to support young people.

The model used to define the quantitative elements in this study takes account of the direct benefits that flow from re-engagement with formal learning and the resulting improvements in employment and further training, namely, wage improvements and avoidance of particular social costs. However, in addition to these quantifiable economic benefits, a number of qualitative benefits can be attributed to the HOL approach.

The discussion below considers, using case studies of real HOL participants, how HOL contributes to the realisation of the following benefits

- improved health outcomes and life satisfaction;
- reduced criminal behaviour; and
- breaking the intergenerational cycle of poor participation in education.

3.2.1 Educational attainment and health

To the extent that HOL improves engagement in formal education for people who would otherwise disengage or face serious risk of disengagement, literature suggests that participants could expect to attain improved health outcomes relative to a scenario where they did not participate in HOL.

The various avenues through which engagement with formal education has been documented to improve health outcomes including savings to government from reduced health expenditure, as well as the value of flow-on impacts to the individual and community are not sufficiently captured by the quantitative model and should be treated as benefits incurred largely *in addition to* those which were quantified.

Case study – Josh, health

Josh was diagnosed with ADHD in preschool and struggled throughout primary school. His parents were extremely supportive and actively involved in his education.

Josh found secondary school stressful. "I always had a lot of trouble concentrating and sitting still." He joined Hands On Learning in Year 8 and Hands On Learning helped him learn to focus. "That one less day in the classroom was really important for me. I found I was able to gain respect for my teachers in Hands On because I was around them all day and they learnt how to better manage me, I was a handful. Hands On really gives you time to breathe. It allows you to better channel your energy so when you go back to class you are a lot calmer, you can concentrate and get your work done and you don't annoy everyone else."

Josh's parents were thrilled he was able to stay at school and complete Year 12 and he is now a third year apprentice chef and a mature, charming young man.

Case study – Stella, improved life satisfaction

Stella struggled at school from the age of 13. She found authority difficult, rules and regulations got up her nose, and she was quite defiant towards classroom teachers and other students, and was constantly being sent to the Year level Coordinator's office. By Year Nine she was 'wagging' a lot and planning to drop out and train as a nail technician.

Stella was referred to Hands On Learning in Year 7 and describes it as giving her the break she needed. "I had to behave myself so I could get that one day to use my hands, get a bit dirty and have a bit on fun and hang out with other kids. It gave me time to concentrate and the drive to stay in school, to stay focused and finish Year 12."

Stella now has a psychology degree, is working in early childhood and planning to study her masters next.

Source: Hands On Learning Australia 2012

3.2.2 Educational attainment and crime

To the extent that HOL improves engagement in formal education for people who would otherwise disengage or face serious risk of disengagement, literature suggests that participants could expect to be associated with lower levels of engagement in criminal activities or fall into a pattern of recidivism.

Improvements in crime rates have significant positive implications for the community, including, and extending beyond, costs associated with litigation and incarceration. This social benefit is not sufficiently captured by the model prepared for this study and should, therefore, be treated as largely *additional* to those benefits which have been quantified.

Case study – Adrian, improving behaviour

Adrian was loud and disruptive in class by the end of Year 7 and had been suspended several times. He was new to the school, having recently moved to regional Victoria with his mother after his parents separated. He was referred to Hands On Learning by the student wellbeing team and his mother was very concerned about his behaviour.

Adrian started Hands On Learning in Year 8. The principal believes the smaller tighter cohort of students in Hands On helped Adrian connect a lot quicker and more easily with other kids and his adult mentors. He started doing very well, became much happier at school, and able to function more effectively in the mainstream classroom. Adrian is now a Year 9 house captain and doing well across the curriculum.

"This time last year I didn't think being part of the leadership group was possible. The difference is I like school now, I actually want to come," Adrian said.

Case study – Sandy, attitude changes

Sandy is in Year 10 and started Hands On Learning when she was in Year 9. When Sandy started HOL she was a very angry and aggressive young lady who caused the school and her family no end of grief with her constant attitude and refusal to behave and treat others with any respect.

Sandy responded very well to the use of Focus Plans and behaviour modification strategies applied in Hands On Learning. Within two terms of attending HOL she completed Year 9 successfully and her attitude towards herself and others had dramatically improved. Her newly developed leadership skills are also evident in school as she is now doing school work, staying in class, wearing uniform, not defying teachers instructions, and not using her mobile phone in class.

In Year 10 Sandy was asked to continue on in HOL as a mentor. She has completed a very successful work experience placement as a welder, and received extremely positive feedback from her employer. Sandy continues to lead by example and stepping up as a mentor within HOL.

Source: Hands On Learning Australia 2012

3.2.3 Intergenerational impacts

The modelling considers a subset of impacts on the individual who participates in HOL and, to some extent, costs avoided by the community as a result of that individual's participation. The model does not, however, account for intergenerational impacts of participation in the HOL program. Intergenerational benefits of the HOL method are realised to the extent that these flow-on impacts serve to permanently alter the course of not only the individual participant's prospects, but the prospects of their children. These benefits should be viewed as *additional* to the benefits accounted for in the qualitative CBA model.

Case study – Neil, family background

Neil was 14 in Year 8 when he started Hands On Learning. His parents had separated and his mother had significant mental health issues. His HOL artisan-teacher described him as 'like a blowfly in a jar'. Neil couldn't concentrate and had great difficulty sitting still in the classroom. He was referred to HOL to try and break a cycle of multiple detentions and suspensions because of his behaviour. He was on his last warning prior to being expelled.

An intelligent student, Neil's behaviour was a manifestation of just how poorly he was coping with the disruption and trauma in his personal life. Hands On Learning provided Neil with respite and a place to belong. According to Neil, "My grades were shocking back in Year 8 and my attitude to school terrible. There is more to life than theory and I enjoyed doing practical work. Hands On Learning got me out of bed for that one day a week." Neil found the time in HOL refreshing. "You get to be yourself in that group, and figure out so much about yourself and deal with family issues. School was then so much easier."

Neil continued with HOL in Year 9 and returned full time to the mainstream classroom in Year 10. "My teachers would say the change is massive in terms of my behaviour and I have turned around every possible aspect of my classroom learning." Neil is now in Year 12 and on track to do well.

Source: Hands On Learning Australia 2012

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Contact us

Deloitte Access Economics
ACN: 49 633 116

Level 1
9 Sydney Avenue
Barton ACT 2600
PO Box 6334
Kingston ACT 2604 Australia

Tel: +61 2 6175 2000
Fax: +61 2 6175 2001

www.deloitteaccesseconomics

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