STUDENT-CENTRED SENIOR SECONDARY SCHOOLING

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The Mitchell Institute is one of the country's leading education and health policy think tanks and trusted thought leaders. Our focus is on improving our education and health systems so more Australians can engage with and benefit from these services, supporting a healthier, fairer and more productive society. Established in 2013, the Mitchell Institute is part of Victoria University, one of the few universities in Australia providing university degrees as well as vocational education and training. We share a strong focus on reducing inequality and the risk of failure within our education and health systems.

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Executive summary

The current scrutiny of senior secondary schooling across Australia clearly signals that something needs to change. Major reviews at national and jurisdictional level are examining various aspects of senior secondary education, and must be drawn together into a coherent vision for reform. This report proposes five principles to guide future reform directions:

1. **Define success for each individual learner**
   What is valued in senior secondary schooling represents only a small fraction of young people's learning and development.
   - Position vocational and academic learning as equally desirable for all students.
   - Engage all senior secondary students in student-led, inquiry-based learning experiences.
   - Design a holistic, equitable certification of senior secondary learning.

2. **Prepare for a journey, not a destination**
   Senior secondary schooling must equip students to engage in lifelong learning, rather than following a single linear pathway.
   - Frame senior secondary pathways as preparation for lifelong learning.
   - Equip students with the literacies they need to navigate stressors and transition points.

3. **Address factors distorting student choice**
   Systemic factors distort student choices, including school timetables; 'gaming' of scores; and financial inequalities.
   - Address systemic incentives for 'gaming' senior secondary curriculum choices.
   - Introduce greater flexibility in the school timetable.
   - Address inequitable funding arrangements that limit students' choices, especially for VET.

4. **Start early, and sustain support**
   Senior secondary pathways stem from learning trajectories that begin in early childhood, which require sustained support.
   - Provide early and sustained support for all students' learning.
   - Commence integrated career education from at least the early years of secondary school.
   - Sustain a holistic focus on learning, from the early years into senior secondary school.

5. **Connect students and their communities**
   Senior secondary pathways require strong relationships between schools, students, families and communities.
   - Involve families and the whole school community in conversations about pathways.
   - Encourage engagement in meaningful work experience.
   - Leverage the learning that occurs in students' part-time employment.
   - Leverage connections to community and Country as sources of resilience and motivation.

Achieving transformation of senior secondary pathways will requires a commitment from governments to school-led reform, drawing on promising practices. If teachers and schools can become drivers of reform and problem-solvers in implementation, there is a better chance that students, in turn, will become drivers and problem-solvers in their own learning.

Introduction

The current scrutiny of senior secondary schooling across Australia clearly signals that something needs to change.

Senior secondary school is a critical juncture within the education system. It signifies the end of students' school education journeys, and the culmination of years of learning, from early childhood onwards. It is also regarded as a time when doors open (or do not open) towards post-school pathways, including into further education and training or work. For this reason, the design of senior secondary school – what is offered, and what is valued – affects learners at all previous stages of learning, and in subsequent learning opportunities.

Australian senior secondary school education is currently undergoing a period of intense scrutiny. Education Council's *Review of Senior Secondary Pathways* is currently occurring alongside various state-level reviews of aspects of senior secondary curriculum, including vocational education and training (VET) options (in Victoria and South Australia), and the entire school curriculum (in New South Wales). Broader reviews, including the recently completed *Review of the Australian Qualifications Framework*, also have implications for how learning in senior secondary school is designed, delivered, assessed and certified.

While each review addresses distinctive concerns, they amount to one clear signal: something needs to change. The nature of this change will depend upon the appetite of governments to weave together findings from multiple reviews into a cohesive new vision for senior secondary education, and engage boldly yet sensibly with identified challenges. This effort must be motivated by a shared national commitment, that Australia's next generation of secondary school students will have a better experience than the current one.

This paper draws on the Mitchell Institute's insights from across the education system to inform a set of proposals for the future direction of senior secondary school in Australia. It draws on Australian and international research, as well as promising examples of current policy and practice. The report is structured around five themes:

1. Define success for each individual learner
2. Prepare for the journey, not the destination
3. Address factors distorting student choice
4. Start early, and sustain support
5. Connect students and their communities

These five themes constitute principles to guide future reform, rather than concrete policy proposals. By adopting these principles, governments and other stakeholders can work together to ensure that short-term incremental changes are well-aligned with a long-term vision, and work towards systemic transformation through manageable steps. This report sets out some suggestions for the next steps along this incremental trajectory, aimed at bringing Australian senior secondary schooling closer to a truly student-centred model.

Define success for each individual learner

What is valued in senior secondary schooling represents only a small fraction of young people's learning and development.

The Melbourne Declaration on Educational Goals for Young Australians commits to developing successful learners; confident and creative individuals; and active and informed citizens. Yet the measures of success currently dominant at senior secondary level do not encompass this breadth of learning. Development of a broader set of measures of student success has potential to address the needs of all stakeholders in Australian education:

- **Students** require support and recognition for their holistic learning and development.
- **Education systems** need to know that schools are delivering on a broad set of goals.
- **Industry** requires an agile, employable workforce, equipped for lifelong learning.
- **The community** requires active, informed and productive citizens.

Three policy directions are proposed below, to enable these benefits to be realised:

1. Position vocational and academic learning as equally desirable for all students within senior secondary school and tertiary education.

The current school system artificially divides students into academic and vocational, or 'head' versus 'hand' learners (Down, 2018). This division is intensified by differences in how each type of learning is valued, with vocational learning often considered to be an inferior path (Dalley-Trim, Alloway, & Walker, 2008; Torii & O'Connell, 2017). While many senior secondary students have the option of studying both academic and VET subjects, the two streams of learning are rarely interlinked (Torii & O'Connell, 2017).

There is growing recognition that myths about the value of different types of learning are outdated. Higher-level VET qualifications can lead to more secure, more rewarding, and better-remunerated careers than general university degrees – which may leave students with skills gaps that require additional learning (Firth, 2019). Recent figures show comparable starting incomes and employment status for VET graduates, and bachelor's degree graduates (Wyman, McCrindle, Whatmore, Gedge, & Edwards, 2017).

Overcoming these myths requires changes to teacher perceptions (Dalley-Trim et al., 2008); and raising awareness of VET pathways among parents and students (Shipley & Stubley, 2018). Rural and regional communities may provide an instructive model for how different types of learning can be equally valued, as VET may be held in higher esteem in rural and regional communities, due to differences in demographics and local industries (Walstab, 2018). It also requires support to address the real logistical challenges, including costs, of delivering VET for school students (Polesel et al., 2004), potentially involving delivery of senior secondary VET by non-school providers.

Promising policy: Review of the Australian Qualifications Framework

The 2019 *Review of the Australian Qualifications Framework* (AQF) outlines a new approach to integrating knowledge, skills, and the application of learning. The Review defines knowledge, skills and application in terms of their relationship to action – the information to inform action, the capabilities to take action and the context for action.

The Review also advocates that the Senior Secondary Certificate of Education is not mapped to any particular level on the AQF, to allow flexibility in the type and level of learning that it may describe. This creates space for reconsidering how knowledge, skills, and the application of learning can be integrated in curriculum and certification options for all senior secondary students, rather than separate into distinct pathways.

2. Engage all senior secondary students, regardless of their pathway, in a range of student-led, inquiry-based learning experiences.

Student-led, inquiry-based learning enables students to investigate problems, integrating learning across multiple curriculum areas and applying it to the world outside school. It encourages students to become active participants in their own learning, and makes enhancement of learning opportunities a shared concern for everyone in the school (O'Connell & Lucas, 2016). Student-led learning also encourages students to take more responsibility for their choices, and their consequences (Ashenden, Blackburn, Hannan, & White, 1984) – in contrast to approaches in which choices are made for them.

As well as increasing student agency and engagement, both student-led and inquiry-based approaches have been found to improve learning outcomes. For example, a 2014 study found that students taught using inquiry-based methods performed better on measures of critical thinking, and in final exam performance, than students taught using more didactic methods (Abdi, 2014). Student-led learning has been associated with higher levels of perceived autonomy, competence, relatedness and motivation; including for pre-vocational students (Smit, de Brabander, & Martens, 2014).

Recognition of the value of student-led and inquiry-based learning has a long history in Australian education policy and practice. Yet its implementation remains sporadic rather than systemic, in part due to practical constraints imposed by the design of senior secondary schooling, such as the school timetable (discussed later in this report). As technology change the ways that students engage with content, more opportunities may arise for students to individualise their learning programs, potentially with a reduced reliance on subject-specific teacher support. Such pedagogies also require teachers to have sophisticated understanding of the inquiry process, and to work with students to co-construct learning in collaborative ways (O'Connor, Jeanes, & Alfrey, 2016).

Promising approach: Social Enterprise Academy, Australia

The Australian Centre for Rural Entrepreneurship (ACRE) is the local lead organisation in a social license agreement with 10 countries around the world to develop and catalyse social entrepreneurship, using a whole of community and lifelong learning lens.

Social Enterprise Schools is one arm of this approach. Students (of any age, stage, ability, or location) identify a social, environmental or economic issue and create their own enterprise, with profits from their trading going to the issue that the team of students have identified. Independent evaluation of the approach shows that students feel they are in the 'drivers seat'. Social Enterprise Schools is a flexible model for schools to implement and align to their school's curriculum and student learning priorities.

The approach originated in Scotland and is now in 10 other countries around the world. In 2019, Scotland's Department of Education has fully backed Social Enterprise Schools being implemented in every school in Scotland. Social Enterprise is a viable and relatable vehicle for students to develop, practise, demonstrate and, importantly, deploy their literacy, numeracy and other key curriculum capabilities, such as critical and creative thinking. www.acre.org.au

3. Design a holistic, equitable certification of senior secondary learning.

The dominance of the Australian Tertiary Admission Rank (ATAR) is a frequently-cited concern in senior secondary education (Pilcher & Torii, 2018). Ample evidence exists that a narrow focus on ATAR scores as the defining outcome of schooling has adverse consequences, including potential for negative impact on student wellbeing and engagement (Shipley & Stubley, 2018; Cluey Learning, 2019). It also distorts students' decisions about their future – as illustrated in a recent media profile of a student who did not initially pursue his preferred university course, because his ATAR was significantly higher than the entry mark that was required: "That backwards logic of mark first, and then interest, had made me overlook where my true passion lay" (Jack, 2019).

Potential solutions include addressing misperceptions about the importance of ATAR, given that most university entrants are admitted based on other criteria (Pilcher & Torii, 2018; O'Connell, 2018). Portfolio-based assessment models, or streamlined Learner Profiles, have also been proposed, to capture a broader spectrum of student learning (O'Connell, Milligan, & Bentley, 2019). Such models could also be effective in recognising learning that students gain outside of the school environment – provided that they are designed and implemented in equitable, inclusive ways (Roberts-Hull, 2019). Portfolios or profiles must also be readily understandable by all potential users (students, teachers, parents, tertiary institutes, and employers), using a common language to create permeable, interconnected paths across different learning spaces.

Promising practice

SEDA College is a private provider of hands-on education for Year 11 and 12 students, with a focus on vocational learning in the sports industry. SEDA has developed a successful customised learning plan for all students, whereby each student, along with their teacher, rates their level of competence on a range of key employability and life skills at regular intervals. Success is measured by movement along each scale.

Prepare for a journey, not a destination

Senior secondary schooling must equip students to engage in lifelong learning, rather than following a single linear pathway.

Senior secondary education must provide students with the knowledge, skills, and capabilities to prepare them for the journey through school and lifelong learning. The labour market is increasingly characterised by flexible, casual, precarious and insecure patterns of employment, even for those with tertiary qualifications (Cuervo, Crofts, & Wyn, 2013); and individuals will most likely change jobs and careers several times over their lifetime.

'Lifelong learning' refers to the idea that learning continues well beyond the school years, and is essential to young people thriving in a constantly-changing world (Bryce & Withers, 2003). The concept implies "a cycle where the learner contributes prior learning into a new learning environment and sees that learning upgraded" (Pitman & Broomhall, 2009, p. 439). Benefits of lifelong learning include economic, social and personal welfare (Cornford, 2009).

Two policy directions are proposed to better prepare students for lifelong learning:

1. Frame senior secondary pathways as preparation for lifelong learning.

A flexible approach to pathways will help prepare students to be adaptive lifelong learners. Rather than choosing between an 'academic track' or 'VET track', all students and their families need to be equipped to navigate all kinds of education and training, and to understand how different provision options may be used to meet different learning needs over the life course. Raising awareness of reverse articulation options (studying in the VET sector during or after a university degree) (Bogna, 2016), is as important as raising awareness of articulation pathways from VET into higher education.

Lifelong learning is not only about meeting the needs of individuals, but also the needs of the communities in which they live (MacLeod, 2018). To make good decisions about lifelong learning, learners need awareness of the kinds of skills and knowledge that they can contribute to their communities, including employment options and trends. Better availability of information about labour market opportunities – including high-growth industries, and high-demand skills within industries – may help teachers, students, career advisors and families to plan productive pathways through learning and work.

Promising policy: National Careers Institute

The National Careers Institute was established in July 2019, to make career advice more accessible and navigable for all Australians. As part of its establishment phase, the Institute is engaging in a consultation and co-design process to maximise its responsiveness to stakeholder needs. The Institute will also investigate potential improvements to careers data linking and accessibility; and establish a grants program to enhance partnerships between industry, employers, schools and tertiary providers.

2. Equip students with the literacies they need to navigate stressors and transition points through senior secondary school and beyond.

Choosing a pathway through senior secondary school is only the beginning. To achieve their goals, students must also be equipped to navigate hurdles and stressors that they may encounter in following their chosen path. Furthermore, the average transition time from education to full-time work is now up to five years, compared to one year in 1986 (Foundation for Young Australians, 2018). This means that the skills needed to navigate transitions in senior secondary school will continue to be necessary into adulthood.

In addition to career literacy, two other types of literacy may be especially important to successful pathways, and warrant additional attention in pathways preparation:

- **Health literacy** plays an important role in young people's ability to succeed, whatever their chosen pathway. While the exact definition of 'health literacy' has been debated (Peralta & Rowling, 2018), its aim is to promote greater independence and control over one's health rather than simply conveying information (Nutbeam, 2000). Schools have a clear role to play in increasing young people's health literacy (International Union for Health Promotion and Education, 2018), and the concept has underpinned the Australian Curriculum for Health and Physical Education since 2013 (Australian Curriculum, Assessment and Reporting Authority, 2013). There is scope for greater recognition of health literacy as a complement to career literacy; especially mental health literacy, which can be critical to young people's ability to successfully manage senior secondary transitions (Tilleczek et al., 2014).

- **Financial literacy** can be defined as "the ability to make informed judgements and to make effective decisions regarding the use and management of money" (Noctor, Stoney, & Stradling, 1992). It has been identified by the OECD as a priority literacy for the 21st century – especially as globalisation and digital technologies increase the complexity of financial services and products, and as labour market volatility and longer life expectancy increases financial risk (Lusardi, 2015). Research indicates that knowledge of financial and consumer products remains an area for improvement for young people's learning in Australia (Worthington, 2016). Financial literacy is especially important in navigating pathways, as the financial aspects of young people's future plans (such as moving away from home to study, or incurring a student loan) can have lasting implications for their economic wellbeing.

Promising program: ASIC MoneySmart

The Australian Securities and Investments Commission's MoneySmart Teaching Program builds teacher capability through professional development and classroom resources. Tools and resources include 36 units of work aligned to the Australian Curriculum for Primary and Secondary schools, 16 hours of professional development for teachers, 83 digital resources for teachers, and 49 online tools. An evaluation of the program found that 90% of teachers reported increased capacity to teach financial literacy, and students engaged with the program showed higher financial literacy.

Address factors distorting student choice

Systemic factors distort student choices, including school timetables; 'gaming' of scores; and financial inequalities.

An effective education system is one in which all students have the opportunity to pursue learning that reflects their interests, capabilities and goals. Evidence indicates that senior secondary pathways in Australia are currently constrained by systemic factors – within the school system, and in tertiary education – that limit or distort student decision-making.

Three policy directions are proposed to generate more student-led decision-making:

1. Address systemic incentives for 'gaming' senior secondary curriculum choices, to prioritise students' interests and strengths.

Evidence indicates that student subject choices are often driven by the prioritisation of examination scores, including subject scaling or mark-up advantages (Pilcher & Torii, 2018; Yates, Woelert, Millar, & O'Connor, 2017; Oo, 2017). 'Gaming' of curriculum occurs when students choose subjects to gain higher scores, rather than exploring individual interests (Leat, 2017; O'Connell, 2018; Shipley & Stubley, 2018). For example, a recent NSW study found that maximising their ATAR score was the reason for students' selection of different options for senior secondary mathematics (Oo, 2017).

Leat (2017, p. 2) argues that the "thin gruel of meaning" represented by schools' current focus on academic results causes less academically able students to disengage from school. Given that motivation for learning often decreases during adolescence (Peetsma & Van der Veen, 2008), it is especially important for schools to foster a strong sense of engagement to curriculum in the senior secondary years. Connectedness to school can also help senior secondary students meet the other challenges of adolescence (Waters, Cross, & Runions, 2009); but may be undermined if students feel forced into less engaging choices. This risk is equally, if not more, relevant for high-achieving students, who may feel alienated from school even while sustaining high academic achievement.

Other policy directions proposed in this report would assist in addressing this concern. Student-led learning, portfolio-based assessment, and strengths-based career education can all encourage students to identify their interests and make curriculum choices accordingly. However, these reforms may gain little traction if incentives remain to pursue particular subjects in order to maximise a study score. Any future design for senior secondary certification must guard against perverse incentives and 'gaming', and support the prioritisation of student interests in selecting curriculum options.

Promising program: Rural Youth Ambassadors

Victoria's Rural Youth Ambassadors are a group of around 20 senior secondary school students convened by the Country Education Program, who advocate for better rural

education. In 2019, they are focusing their advocacy on increasing flexibility in senior secondary school, to improve options for combining vocational and academic learning.

The Rural Youth Ambassadors exemplify a solutions-oriented approach to the challenges of senior secondary education in rural communities. They work with schools and government to identify solutions at the local level, exploring a range of levers including distance education (supported by face-to-face support or online tutoring); cooperation between schools, and new ways of structuring the school timetable.

The Rural Youth Ambassadors program demonstrates the benefits to schools and government of directly involving students in the design of education provision and policy.

2. Introduce greater flexibility in the school timetable.

The 'tyranny' of the school timetable is widely recognised as a significant constraint on student curriculum choices in the senior secondary years (Brady, 2006). It constitutes a real and practical constraint on student pathways, as subject combinations must be tailored to fit the availability of classrooms, resources and teaching staff. It is especially limiting in small schools, and in circumstances where students need to be transported between locations, to access their preferred subject choices. At the same time, new technologies are disrupting how young people use space and time, and may offer new possibilities for rethinking the organisation of the school timetable to increase flexibility.

Promising practice: Reinventing the timetable

At the recent Rural Youth Ambassadors Forum in Victoria, students suggested two ways in which the school timetable could be reconfigured, to expand students' subject choice:

- Students could undertake distance learning in different subjects within a single 'class', with a teacher present to provide face-to-face assistance when necessary. This model was suggested as a way of overcoming the delays in feedback that students experience in distance learning, and the isolation of working alone. One teacher remarked that the model may be too expensive for smaller schools; while another suggested that teachers could undertake their own non-contact period work alongside students, given that they would mainly be working independently.

- The year could be reconfigured into intensive 'blocks ', in which students study a single subject for an intensive period of time. The students felt that this model – which is currently being applied successfully in higher education – would open up greater flexibility in students' combinations of subjects, and also allow teachers to be shared more efficiently between schools, as they could relocate for whole 'blocks' at a time. Exams could be taken at the end of each 'block ', rather than the end of the year. While one student noted that students' level of maturity may differ between earlier and later blocks, and some subjects (such as English) may need to be sustained all year, there was support for the model as an option worth investigating.

3. Address inequitable funding arrangements that limit students' choices, especially in relation to VET pathways.

Funding inequalities are another way in which systemic factors limit students' choices. VET for secondary school students programs are not resourced according to their needs (Polesel et al., 2004), and are often extremely costly to implement for schools. Fees charged by schools for VET intensify socio-economic inequalities, as they impact most heavily on the poorest students, who are most likely to do VET (Polesel, 2010).

Schools' capacity to deliver Certificate III and higher VET programs is especially limited (Misko, Ackehurst, Polvere, Erzinger, & Korbel, 2019), in part due to the prohibitive costs of on-site facilities or 'buying in' provision from a TAFE or other provider (Polesel et al, 2004). This means that most VET for secondary school students is offered in the form of low-cost Certificate I and Certificate II qualifications (Masters et al., 2016); despite these certificates having limited value in the labour market. Current funding models also do not enable VET providers to make longer-term plans, which compromises their ability to collaborate with schools (Van Dyke & Jackson, 2019).

Funding inequalities are also apparent at the tertiary level. Students' decisions about post-secondary education and training may be distorted by up-front costs for VET courses, compared to higher education (Noonan & Pilcher, 2015). Variability in VET funding models also means that the financial barriers in relation to VET participation differ across Australian jurisdictions (Noonan & Pilcher, 2015). Availability of income-contingent loans for post-secondary VET would remove one potential deterrent to VET participation, and encourage more school students to engage in VET-bound pathways.

Priority problem: Financial barriers to post-secondary education and training

Funding arrangements and student support impact on many aspects of students' decision-making. Australian students are unable to access income contingent loans for many VET courses, which acts as a deterrent to VET pathways for low socio-economic status groups. Fees are not the only barrier, however – costs of participation in higher education are also substantial, once living costs are taken into account.

These barriers impact on students' pathways through senior secondary schooling by constraining their aspirations and options for further learning. Perceptions that post-school pathways are not affordable can also affect engagement in senior secondary education, especially for students from low socio-economic status backgrounds.

Start early, and sustain support

Senior secondary pathways stem from learning trajectories that begin in early childhood, which require sustained support.

Low achievement in senior secondary school incurs a high personal, social and economic cost. Only 74% of Australian students attain a Year 12 certificate or equivalent by age 19, and just 73.5% of 24-year-olds are fully engaged in employment, education or training (Lamb, Jackson, Walstab, & Huo, 2015). As many young people who disengage from school early remain disengaged throughout their lifetime, the estimated cost of early school leaving in Australia is $12.6 billion over a lifetime for a single cohort (Lamb & Huo, 2017).

These learners have commenced their pathway to disengagement well before the senior secondary years. Evidence shows that by Year 9, students have largely already decided whether or not they will complete Year 12 (Lamb & Rice, 2008). Even earlier, students who do not meet learning milestones at Year 7 show a decline in their self-belief and school engagement from the early to middle years. These children come to understand themselves as low achievers, which often leads to disengagement from school and early leaving (Lamb et al., 2015). Early intervention and sustained support is essential to keep students on track, and ensure they enter senior secondary school ready to succeed in their chosen pathway.

Three policy directions are proposed to keep students on track to senior secondary school:

1. Provide early and sustained support for all students' learning.

A commitment to senior secondary pathways also requires a commitment to preparing students for success at all stages of learning. For students struggling with core skills, early identification and support is more cost-effective than later remedial interventions. At the same time, research indicates that students who fall behind in their learning can catch up again, with appropriate support (Lamb et al., 2015). Targeted interventions for students who need them therefore remain important, throughout their schooling. High-performing lower socio-economic status schools routinely provide targeted support for students, both within and outside the traditional school day (Lamb & Rice, 2008).

Students enter the senior secondary years wearing the labels that they have been given in their previous years of schooling. Assessment can contribute strongly to how students perceive their abilities. For example, NAPLAN was originally intended for the purpose of identifying individual students at risk in literacy and numeracy achievement to enable early intervention (Cumming, Wyatt-Smith, & Colbert, 2016); but also carries a risk of students being labeled as not literate or numerate (Marklund et al., 2012). Measures of students' learning progress, which recognise students' achievements relative to their starting point, can help all students to recognise themselves as capable of learning. Combining universal, targeted and intensive approaches can also ensure every student receives the support they need, without being defined by their level of achievement.

Promising practice: Rooty Hill High School

At Rooty Hill High School in NSW, 60% to 80% of each Year 7 cohort arrives below grade average. Yet the school refuses to accept a predetermined path for their students, and is committed to innovation in preparing students for life, work and future learning.

The school has strong links to industry and approaches to entrepreneurial education across Year 7 to Year 12. It has moved from 'individual pathways' to creating a work and enterprise learning framework, using research from the Foundation for Young Australians that identifies seven job clusters most common in Australia. This gives the school a new way to think about employability, and higher order learning experiences – and assists students to identify, demonstrate and deploy their strengths.

The school combines universal, targeted and intensive approaches to ensure that all students benefit from education tailored to their interests and needs. Learning in core curriculum areas is delivered in ways that engage all students, including through connections to real-world applications. For example, the school has experienced success with a Trade Maths course, to equip students with the mathematics that they need for a trade. The course meets the NSW mathematics syllabus and assessment requirements, while using applied learning tasks linked to the numeracy and mathematical capabilities required in over 20 industries.

Many other examples of universal, targeted and intensive strategies exist at Rooty Hill; including a recent universal whole of Year 8 'Careers Explorers' entrepreneurial education strategy with business. Rooty Hill shows that better outcomes are possible, with a capability driven curriculum where students, teachers and business leaders identify, use and combine their strengths.

2. Commence career education from at least the early years of secondary school, integrated across the school curriculum.

The evidence indicates that career education is a complex process, requiring intervention at multiple points in time (Bennett & Robertson, 2015). Young people's intentions about their pathways are formed early – often following gender stereotypes, and reflecting students' interests and achievement in traditional school subjects (Torii, 2018). By age seven, children are already capable of envisaging realistic future careers (Moulton, Flouri, Joshi, & Sullivan, 2014). By the senior secondary years, many students have already narrowed their career aspirations – a process that is influenced strongly by their levels of academic achievement (Mitchell Institute, 2017).

Career education must therefore start earlier, in the early secondary years – or even in primary school. Ganbina, for example, is an Indigenous school to work transition program in rural Victoria that begins at age six. discussing why education is important, and exploring career options and work experience opportunities, and industry tours.

Ample research exists on effective practices in career education (Bennett & Robertson, 2015). Effective career education programs for younger learners include raising awareness of their own interests and strengths, recognising that these may change over

time as a natural part of development. Given the rapidly-changing labour market (Mitchell Institute, 2017), effective career education also includes exploration of students' interests and capabilities, to prepare them to navigate a range of future options, rather than to identify a single career. It is most valuable when it includes the development of action plans, not simply information (Van Dyke & Jackson, 2019); and when it includes formal and informal conversations with a range of teaching staff. These evidence-based practices are increasingly reflected in Australian career education.

Promising policy

The Victorian Government's *Transforming career education in Victorian government schools* strategy adopts many of the principles of effective career education outlined above. The strategy is also based on evidence from the evaluation of Victoria's previous Managed Individual Pathways program, which was found to be most effective when it was integrated within a whole-school approach, and commenced in the early years of secondary schooling (Centre for International Research on Education Systems, 2017). During Mitchell Institute's participation in recent consultations for the Expert Advisory Panel into Rural and Regional Students, the career education strategy was frequently identified as having improved preparation for senior secondary pathways.

Also promising is the recent endorsement by all education ministers of *Future Ready: A student focused National Career Education Strategy*, which focuses on developing students' career management and navigation skills.

3. Sustain the more holistic focus on student learning that occurs in the early and primary years into senior secondary school.

Australia's Early Years Learning Framework (EYLF) for children aged birth to five sets out five learning and development outcomes for all Australian children:

- Children have a strong sense of identity
- Children are connected with and contribute to their world
- Children have a strong sense of wellbeing
- Children are confident and involved learners
- Children are effective communicators.

In contrast, Australian education policies for schooling, particularly in the senior secondary years, have been described as largely oriented toward preparing human capital for the labour market and growing the economy (Chapman, 2015; Wyn, 2007). This orientation is perceived as underpinned by a focus on academic outcomes, such as PISA and NAPLAN (Gorur & Koyama, 2013; Klenowski, 2009; Lingard, 2011); which may marginalise other conceptualisations of learning and wellbeing (Wyn, 2007).

There is scope for greater continuity between the holistic learning and development outcomes in the EYLF, and the outcomes that are emphasised in later years of learning. This would enable learners' trajectories to be monitored across all domains of learning

and development, not only the academic domain. Initiatives such as the Middle Years Development Index (trialled in Victoria and South Australia) signal promising moves towards ongoing monitoring of the outcomes measured at entry to school using the Australian Early Development Census, which could be extended to later school years.

The most promising of the five EYLF outcomes to be taken up in schools may be a *sense of wellbeing* for their students. While uncertainty remains regarding how wellbeing is understood and best facilitated within the context of schools (Powell & Graham, 2017), schools are increasingly recognised as having a key role in supporting and promoting the wellbeing of their students (Gray & Hackling, 2009; Noble, McGrath, Wyatt, Carbines, & Robb, 2008; Urbis, 2011); As discussed earlier in this report, health literacy is an important component of young people's pathways, and a strong sense of identity is another related EYLF outcome that may be worthy of consideration when defining appropriate outcomes for pathways initiatives. Research indicates that asking students how schools can best support their sense of wellbeing can help inform school improvement in this area (Simmons, Graham, & Thomas, 2015).

Priority problem: Measuring what matters

A narrow focus on academic outcomes also inhibits the flexibility of school curriculum. Principals at the Rural Youth Ambassadors Forum explained that while they support more flexible pathways, the focus on NAPLAN and ATAR as measures of school performance devalued their schools' successes in supporting students to pursue vocational learning pathways (within secondary school and beyond). For example, a student who thrives in a school-based apprenticeship might transition to a full apprenticeship mid-way through Year 12 – representing a positive outcome for the student and their employer, but represented as a 'failure' in school performance data.

Special schools and alternative programs also struggle to demonstrate their successes according to academically-oriented school performance measures. For example, special schools that transition high proportions of their students direct from school to work are setting their students up for independent futures, but invisible in most measures of school success. Similarly, alternative education programs that re-engage students in learning – whatever their subsequent achievement – are less likely to gain recognition.

These examples indicate that a more holistic focus for senior secondary school outcomes – potentially including students' sense of identity and wellbeing – may empower schools to define success in ways that are meaningful to their communities.

Connect students and their communities

Senior secondary pathways require strong relationships between schools, students, families and communities.

Students are by definition connected to families and communities, and these connections are a powerful resource for strengthening senior secondary pathways. At the same time, building relationships with families and communities requires a significant investment of time from schools, and must be adequately supported in order to be sustainable. A forum held by the Mitchell Institute on new approaches to persistent problems in Australia's schools concluded that schools need to be supported to better engage with parents, communities, health providers, business and support services (Glover, Hinz, & Ross, 2014).

Four policy directions are proposed to strengthen connections beyond the school gate:

1. **Involve families and the whole school community in conversations about pathways (not just information-sharing by schools).**

   Parents and families are a significant influence on students' pathways (Kewalramani, Phillipson, & Belford, 2018), and students rely heavily on information from parents about appropriate choices. University aspirations are especially influenced by parental advice and expectations (Smith, Trinidad, & Larkin, 2015), with the influence found to be strongest in low socio-economic status schools (Watson, Vernon, Seddon, Andrews, & Wang, 2016). Yet parents often have limited knowledge about study options within and beyond school, often based on their own pathways. In particular, vocational pathways are less well understood by both students and parents (Shipley & Stubley, 2018).

   Australian schools often attempt to address this information deficit by sharing knowledge and resources to increase parents' expertise. Yet the complexity of senior secondary pathways and student aspirations suggest that a deeper and more sustained conversation is likely to be more effective, in creating a two-way partnership to support better decision-making by students. While schools may have a clearer understanding of the options available to the studen, families bring important expertise in relation to the student, and their family and community environment – essential context for decisions about the student's future. Community role models can also be powerful influencers on student decision-making, and may be valuable contributors to pathways discussions.

   Promising approach: Ourschool – alumni service

   Ourschool Ltd, makes it easier for secondary schools across Victoria to grow supportive alumni networks. The service is co-located at the Victorian Association of State Secondary Principals (VASSP) and it auspiced the two-and-a-half year pilot. The service finds former students of government schools and enables, through a set of processes, the leadership executive of the school to set up and co-construct forums of interaction between alumni, students and staff.

An independent evaluation of Ourschool indicates that students find connecting with former students meaningful and relatable. They get to hear how former students are navigating post-school life (often these are stories of 'non-linear' pathways and self-discovery). Ourschool's approach has a team member working with and at the school each week, to enable and build the capacity of the school to do this on their own in the future. The model also encourages and facilitates networks of schools to connect. Nineteen rural and metropolitan secondary schools joined Ourschool in 2019.
www.ourschool.net.au

2. Encourage engagement in meaningful work experience.

All students should have work experience before they finish schooling as 'schools alone cannot foster all of the skills and capabilities that young people need to find success in work and life' (Torii, 2018, n.p.). Exposure to the world of work provides opportunities for students to build connections with professionals outside their usual family networks, and to learn by doing in real world context (Torii, 2018). Varied opportunities to engage with the world of work can expand young people's aspirations beyond familiar settings.

Evidence shows that students who participate in meaningful work experience have better learning experiences and stronger pathways into employment as compared with those who do not. This is particularly true for those who participate in apprenticeships (Ranasinghe, Chew, Knight, & Siekmann, 2019). Traineeships, in contrast, do not appear to result in stronger pathways to employment or further education or training (Torii & O'Connell, 2017). An equity concern remains around these different pathways, as students from higher socio-economic status backgrounds are over-represented in apprenticeships, compared to other VET pathways (Klatt, Clarke, & Dulfer, 2017).

Partnering between schools and industry is needed to strengthen pathway and provide greater opportunities for students to combine the world of work with their schooling. Schools often do not understand the needs and requirements of industry, and similarly industry is not always aware of how they can fit into the education system. Input from schools is necessary to ensure that work experiences are meaningful and provide learning for the student. Similarly, industry must have input into the vocational curriculum, to ensure students are gaining appropriate skills (Torii, 2018).

The Mitchell Institute has made several recommendations as to how governments might be able to facilitate these relationships between students and employers (Torii, 2018):

- Participate in, and monitor the effectiveness of, school-industry partnering models
- Provide time and resources to make work experience a priority in schools
- Remove barriers such as regulatory issues, sourcing partners, and identifying needs.

Brokering support can be especially effective in making partnering a part of the day-to-day practice of schools and industry partners, rather than an episodic initiative. Local Learning and Employment Networks are a long-running initiative in Victoria that has proven especially effective in embedding partnering in non-metropolitan communities.

Promising practice: Yakka

Two Year 12 students have come up with an innovative tool to match students to work experience. Yakka, an online platform they developed, helps connect students with businesses for work experience. Through Yakka, companies can find the most suitable student candidate from a pool of applicants and students can find the kind of work experience they are after. www.getyakka.com/

3. Leverage the learning that occurs in students' part-time employment.

Part-time work undertaken by school students is an untapped potential source of learning, which can impact on students' pathways and aspirations. Part-time work while studying is the manner in which most young Australians first enter the workforce (Smith & Patton, 2007). Although students' employability skills may be partly developed in school, they may best be developed in the workplace, and thus student part-time jobs are prime sites for early development of such skills (Smith & Comyn, 2003).

More work is required, to determine how to capture such learning. One investigation of students' learning from their work revealed issues such as: lack of consistency in students' experience; variation in students' interest in the capturing of such learning; and the appropriateness of employers having responsibility for part of the school curriculum (Smith & Patton, 2013). Schools may prefer to pursue less formal methods of capturing learning from students' part-time work, such as personal reflections or portfolios.

Promising practice: Industry links

Wenona College in North Sydney has developed relationships with more than 130 companies across Australia, including Qantas, Macquarie Bank, architecture firms and surgeries, to give students authentic experiences in the workforce. In particular, the school has established a partnership with Quantium, a leading data analytics company, with a focus on getting more female students interested in STEM (science, technology, engineering and mathematics).

4. Leverage connections to community and Country as sources of resilience and motivation for students at risk of disengagement.

Connections beyond the school gate are not only valuable for exposing students to the world of work, but also essential for building connections with community and Country. Evidence shows that such approaches can improve school engagement and outcomes, and provide students with greater meaning and motivation for their learning. The Mitchell Institute conducted three case studies of schools using collaboration with students, parents and the community to build trust and social capital. It found that collaboration among schools, universities, employers and community organisations play an essential role in the achievement of student learning outcomes (Bentley & Cazaly, 2015).

There is particular scope for schools to develop greater awareness of local Indigenous culture and history, as a foundation for identity formation for both Indigenous and non-Indigenous students. A recent literature review found that using Country as a teacher of Aboriginal and Torres Strait Islander histories and cultures fosters a sense of belonging for students, and provides a solid foundation for positioning both Indigenous and western epistemologies at the centre of the Australian Curriculum (Harrison & Skrebneva, 2019). Better mechanisms are needed to enable sharing of promising approaches for incorporating Indigenous perspectives into pathways, so that schools can learn from each other and tailor successful approaches to their own context.

Promising practices: Connecting to Country and community

In Townsville, students in a creative technical college mapped out their physical and digital learning environments, which were then used to map a connected learning ecology of digital learning and participation in Townsville. Discussions between students and the community focused on how links between people, places of learning, and different digital interests could be fostered to enhance the digital capacity of the community (Lankester, Hughes, & Foth, 2018).

A two-day intensive hip hop music program delivered as part of a collaboration between community providers and secondary students in a Melbourne school resulted in higher levels of school engagement, social connection, and personal development as reported by the students. Success factors included linking learning to students' musical preference, and the hip hop culture (Crooke & Almeida, 2017).

A culturally centred outdoor learning project (referred to as 'On Country Learning', or OCL) strengthened Aboriginal students' connectedness to the spiritual, social, cultural, environmental and geographic dimensions of particular outdoor spaces. It also enabled Indigenous and non-Indigenous students and their educators to connect (Nakata, 2007). OCL, according to the evaluation, offers opportunities to transform the ways in which schools engage with Aboriginal perspectives, whilst facilitating deep learning through culturally responsive pedagogies (Jackson-Barret & Lee-Hammond, 2018).

Conclusion

The principles and policy directions identified in this report draw on a well-established base of research and practice. They canvass many trends that have been known to be important in senior secondary education for some time, but which have not yet become system-wide practice. The first step in transforming senior secondary pathways may be to determine why many promising practices remain at the margins, rather than being embedded system-wide.

Achieving change in senior secondary pathways will be challenging. Teaching in the senior secondary years demands deep pedagogical knowledge for transmitting increasingly complex content, while working with an age group whose own lives are often escalating in complexity. Teacher-student relationships can be fragmented and fragile, as students move from class to class according to the dictates of the school timetable. In this context, doing things differently may seem unachievable, with so many moving parts to hold together.

This report proposes that change is possible, if it is guided by a core set of principles that can be operationalised into incremental reform. A key success factor in the reform journey will be for governments to learn from the innovations generated by students and schools, and provide the conditions in which such innovations can flourish. Like student-led learning, this requires a commitment to school-led reform that enables principals and teachers to determine how reform trajectories can best be implemented. If teachers and schools can become drivers of reform and problem-solvers in implementation, there is a better chance that students, in turn, will become drivers and problem-solvers in their own learning.

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