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Ameliorating disadvantage: Creating accessible, effective, and equitable careers and study information for low SES students

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2022

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Ameliorating disadvantage: Creating accessible, effective, and equitable careers and study information for low socioeconomic students: Final report

2022

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This research was funded by the Australian Government Department of Education. The findings, recommendations and guidelines in this report do not represent the views of the Australian Government.

Acknowledgements

The project team would like to acknowledge the many participants involved in this study. These include career practitioners and advisers who responded to the national survey, students and young people who participated in focus groups, and the many people who contributed time and expertise across the duration of the study. We would like to particularly thank Catholic Education WA for their assistance in accessing school communities for the focus groups.

Short biographies for each team member are included as Appendix 1.

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This report was funded by the Australian Government Department of Education.

This report should be cited as:

Bennett, D., Coffey, J., Bawa S., Carney, D., Dockery. A. M., Franklyn, K., Koshy, P., Li, I. W., Parida, S., & Unwin, S. (2022). *Ameliorating disadvantage: Creating accessible, effective and equitable careers and study information for low SES students*. National Centre for Student Equity in Higher Education.

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Glossary of terms

The language used in this report is consistent with the Career Industry Council of Australia (CICA) *Professional Standards for Australian Career Development Practitioners* (see https://cica.org.au/professional-standards/).

Alternate pathways are ways to access university studies without completing ATAR courses (see below). The majority of university students in Australia take an alternative pathway; however, alternative pathways differ according to both Australian state and higher education institution (see also portfolio entry).

Australian Tertiary Admission Rank (ATAR) is the primary criterion for domestic student entry into undergraduate courses in Australian public universities. ATAR is calculated on the basis of student performance in state-based secondary school certificates. These include the Western Australian Certificate of Education (WACE), the Higher School Certificate (HSC) in New South Wales, and the Victorian Certificate of Education (VCE).

Career practitioners provide services that help people manage their careers, make occupational and study decisions, plan career transitions, and source careers information. A career development practitioner may also be known as a career practitioner, career counsellor, career adviser, guidance officer, guidance counsellor, school counsellor, or career teacher.

Continuing professional development (CPD) refers to the ongoing maintenance and growth of professional excellence through participation in learning activities that are planned and implemented to achieve excellence for the benefits of participants, clients, and the community (Australian Association of Social Workers, 2002, cited in CICA, 2011).

General entry or **general pathway** refers to coursework that culminates in neither assessment for ATAR nor the completion of certificates and diplomas for VET. These courses can offer, among other things, remedial English and mathematics courses.

Higher education refers to education at the postsecondary school level. Higher education can also be referred to as postsecondary, further, or tertiary education.

Higher Education Contribution Scheme Higher Education Loans Program (HECS-HELP) is a study loan scheme for higher education students enrolled in a Commonwealth Supported Place.

Higher Education Participation and Partnerships Program (HEPPP) is the Commonwealth-funded program for outreach, participation, and retention activities in relation to low socioeconomic status (SES; see below) students in Australian higher education. From 2021, HEPPP's activities were gradually funded and expanded through the Indigenous, Regional and Low SES Attainment Fund (IRLSAF). At the time of publication and until 2023, funding for the composite programs was distributed in accordance with current program guidelines. The government had planned to work with the higher education sector to design a more refined funding model to support equity outcomes for implementation from 2024.

Index of Community Socioeconomic Advantage (ICSEA) refers to a scale that represents levels of educational advantage and makes a comparison of students' levels of educational advantage or disadvantage (see *Guide to Understanding ICSEA*). In this study, survey

responses from schools with an ICSEA score of 0 to 54 were classified as low SES, and the remaining schools (ICSEA score 55 to 99) were classified as middle or high SES.

Indigenous, Regional and Low SES Attainment Fund (IRLSAF) provides funding to universities to support Indigenous students and students from regional and low SES backgrounds.

Influencers are defined in this study as people who influence students' career thinking or provide careers information and support to students. The term "influencers" is inclusive of people within secondary schools who provide such services and are not necessarily employed in, or qualified for, a career-related role.

The **National Assessment Program — Literacy and Numeracy** (NAPLAN) is an annual assessment for school students in Years 3, 5, 7, and 9.

National Priorities and Industry Linkage Fund (NPILF) was designed to fund university initiatives relating to workplace integration, STEM (science, technology, engineering, and mathematics) education, and industry alignment with university teaching, supporting the government's focus on Job-Ready Graduates.

Portfolio entry is one form of alternate entry into postsecondary education. Prospective students compile and submit for assessment a portfolio demonstrating previous work, study, and community activities.

Socioeconomic status (SES) relates to terms such as socioeconomic background. Please note that survey data in this study were split into two categories for analysis, with schools with an ICSEA score of 0 to 54 classified as lower SES and the remaining schools (ICSEA score 55 to 99) classified as higher SES. We use these terms in reference to schools and only when reporting results of the survey; elsewhere, we use the more common terms of low and high SES.

Technical and Further Education (TAFE) institutions provide a range of predominantly vocational education and training courses, most of them qualifying courses under the National Training System/Australian Qualifications Framework and Australian Quality Training Framework. Many institutions also deliver undergraduate degrees and postgraduate diploma courses.

Victorian Certificate of Applied Learning (VCAL) can be achieved by students who successfully complete 10 units of VCAL coursework, VCE coursework, VET qualifications, or a combination thereof.

Victorian Certificate of Education (VCE) graduates are considered more academically prepared for higher education study than are VCAL graduates.

Vocational Education and Training (VET) offers students the opportunity to combine general and vocational studies. The ways VET can be used as credit to university or other study pathways differ across Australian states. These differences became apparent in the student focus groups, so we mention them here.

- New South Wales: VET is dual accredited for NSW school students in Years 9 to 12. Through VET, students receive recognition towards their school qualification (Record of School Achievement or High School Certificate [HSC]) as well as a nationally recognised VET qualification (certificate or statement of attainment).

- South Australia: The South Australian Certificate of Education: The majority of students in South Australia start their journey with a Personal Learning Plan in Year 10, their selection of Stage 1 subjects in Year 11 (includes compulsory mathematics and English), and Stage 2 subjects in Year 12. VET options are available at each stage.
- Victoria: The Victorian Certificate of Education (VCE) or Victorian Certificate of Applied Learning (VCAL) enables students to include vocational studies within their senior secondary certificate. Students undertake nationally recognised training that contributes to their VCE or VCAL (see above).
- Western Australia: The Western Australian Certificate of Education (WACE) is the credential awarded to students who have completed senior secondary education in Western Australia, and it can include VET courses.

Western Australian Certificate of Education (WACE) is earned from the successful completion of senior secondary school in Western Australia from any available pathway.

WAM is an acronym for weighted average mark.

Executive summary

This study examined low socioeconomic status (SES) students' access to information about higher education study options, pathways, and careers and the efficacy of that information. It reports in the context of a shift in higher education policy towards including outcomes as a key component of institutional performance.

Wellings et al.'s (2019) review of the Commonwealth Grant Scheme, the primary funding source for Australia's public higher education institutions, recommended that graduate employment rates be included in performance funding measures. The review also recommended that equity student participation be reported, with specific mention of Indigenous, low SES, and regional and remote students.

Although the 2019 review did not make an explicit link between equity participation and graduate outcomes, the Australian Government's response reflects its commitment to addressing equity challenges across the education lifecycle, from pre-access outreach to graduate employment outcomes. The Job-Ready Graduates legislation and related policies, and the creation of the National Careers Institute, are important developments in focusing policy attention on employment outcomes for graduates, including low SES graduates (Department of Education, Skills and Employment, n.d.).

The Job-Ready Graduates legislation prefaced the introduction, in 2021, of the Indigenous, Regional and Low SES Attainment Fund (IRLSAF), which incorporates the Higher Education Participation and Partnerships Program (HEPPP). The IRLSAF has a broader focus on supporting Indigenous, low SES and regional and remote students as opposed to the HEPPP's singular focus on low SES students. The fund aligns with initiatives such as the National Priorities and Industry Linkage Fund (NPILF), which funds public university initiatives relating to workplace integration, STEM education, and industry alignment.

An additional government response has been seen in the regional context, with separate initiatives responding to two regional student reviews. Both the *Independent Review Into Regional, Rural and Remote Education* (Halsey, 2018) and the *National Regional, Rural and Remote Tertiary Education Strategy Final Report* (Napthine et al., 2019) advocated a focus on employment outcomes as part of addressing regional disadvantage in education. Of particular importance and in line with the findings of this study, the reviews and subsequent government initiatives recognise the need to refocus equity policy such that it considers the impacts of compounding disadvantage and both measures and reports student participation, completion rates, and graduate (employment) outcomes.

The study

The study reported here asked a single research question: How might the information about higher education study options, pathways, and careers available to students from low SES backgrounds be made accessible, equitable, and effective? The research question was answered through three interrelated inquiries.

Inquiry 1 sought to better understand study pathways and careers support as experienced by students and influencers within low SES and other secondary schools. This involved a literature review and analysis of data from the Longitudinal Surveys of Australian Youth (LSAY). The literature review paid particular attention to literature on students from low SES

backgrounds. The review highlighted the paucity of research focused on study options, pathways, and careers for people from disadvantaged groups alongside inequitable access to career and study information given by qualified career practitioners.

Extensive analysis of data from the LSAY collected between 1998 and 2015 focused on career guidance and information received by students in Years 11 and 12. The analysis drew on five LSAY cohorts launched in 1998, 2003, 2006, 2009, and 2015, and each commenced with nationally representative samples of around 14,000 high school students. These provided over 50,000 pooled observations for multivariate analysis of careers information accessed by students in Years 11 and 12.

The findings of the literature review and LSAY analysis informed the design of a nation-wide survey of secondary school career advisors and influencers, which attracted 92 responses. The survey found that school staff who were not qualified career practitioners were more likely to be responsible for providing career and study pathways guidance in lower[1] SES schools. Moreover, qualified career practitioners in lower SES schools tended to be less experienced than their peers.

Career practitioners and influencers across all settings reported being undervalued and overworked, with insufficient time and/or human resources to meet students' needs; respondents from lower SES schools also reported limited financial resources. Although career practitioners and influencers reported that they could provide adequate guidance with their existing time and resources, students who participated later in the study disagreed that the support and guidance available to them had met their needs.

Inquiry 2 employed and analysed data from Bennett's (2019a) social cognitive measure of perceived employability, which encompasses 16 aspects of study and career confidence ranging from academic self-efficacy to communication skills. Data from 6,300 participating students at three Australian universities were linked with institutional and national datasets to compare the confidence of university students from low SES backgrounds with that of their peers.

Students' self-assessments of career and study confidence revealed that the impact of SES on confidence is complex, with school background and prior academic performance variously amplifying and reducing its impact. The data suggest that students from government schools, regardless of SES, are disadvantaged in relation to employability thinking and preparation. Moreover, university students with lower ATAR scores are more likely to be disadvantaged in both their career and study confidence and their academic performance. ATAR was a far better predictor of weighted average marks (WAM) for students from low SES groups than for their peers.

Informed by the results of Inquiries 1 and 2, *Inquiry 3* engaged 54 secondary school and university students in focus group discussions about their experiences of career and study decision-making. The students shared crucial insights into how disadvantage is experienced during the transition into study and across the student experience.

[1] Survey data in this study were split into two categories for analysis, with schools with an ICSEA score of 0 to 54 classified as lower SES and the remaining schools (ICSEA score 55 to 99) classified as higher SES.

Focus group participants revealed that irrespective of a school's location, type, or SES, career and study guidance in Australian schools is often limited to subject selection, with this based largely or entirely on academic grades. Moreover, guidance typically takes the form of a single short meeting after which students are streamed into classes that focus exclusively on university entrance or other pathways.

In line with the literature, Australian students' postsecondary decision-making appears to be based almost entirely on academic performance, and in-depth discussions about careers, study pathways, and individual interests are rare. Study pathways information is also significantly skewed towards university study, and students are uninformed about alternative pathways into postsecondary education. Unprompted, participants in every focus group reported that students felt valued by their schools only if they were on a university pathway.

In the final phase, the themes and issues identified by students were compared with the findings from the LSAY analysis (Inquiry 1) and students' self-assessments of career and study confidence (Inquiry 2). Combined, the study findings informed five elements through which students' career and study decision-making might be understood and enhanced:

information and guidance provided to students
students' **interpretation** of the information and guidance they receive
influence of information and guidance on stakeholders
temporal **impacts** of information and influence
improvements to students' access to and use of study and career pathways information.

Figure 1 illustrates the relationship between the five elements as one of increasing impact.

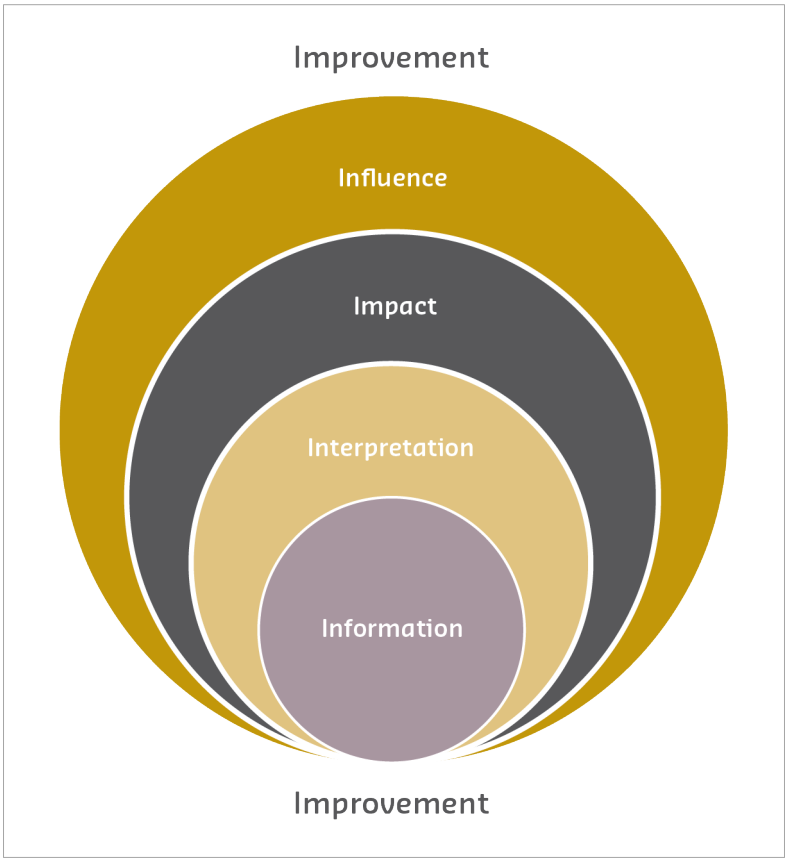


Figure 1. The five "I"s of students' career and study decision-making

The study concludes that effective career and study guidance is dependent on students' (unequal) access to qualified career practitioners or, in many cases, to teachers with career guidance duties and little or no career and study guidance training. In cases where there is no qualified practitioner, Australian students are mystified by the multiple, state-based pathways they see online or in generic fliers. The result is that many Australian students base essential career and study decisions on information from parents, peers, and social media.

Students from disadvantaged groups experience higher rates of postsecondary attrition and deferral and poorer graduate employment outcomes. Despite considerable attention, we find there to be inequitable provision of careers and study information from the early years of secondary school. The impacts of this are long-lasting.

The COVID-19 pandemic is the most recent of numerous factors that combine to adversely impact disadvantaged students. The lessons of previous recessions and other macro-economic disruptors highlight that the immediate and longer term impacts of the pandemic will be felt most keenly by students and workers with disadvantage. We conclude that without urgent action, the impacts of disadvantage will become irreparable, exacerbated by an increasingly diversified student population, labour market changes marked by the fourth industrial revolution, and the longer term impacts of COVID-19.

The study outcomes have significant potential to improve access to effective careers and study information, with a particular focus on students from disadvantaged groups and those who seek to assist them. We urge policymakers and sector leaders to collaborate on both short-term and longer term bipartisan solutions. We advocate for careers information that introduces multiple study and career pathways and that these pathways be valued equally. The following recommendations are made to advance these aims.

Recommendations for broad reforms and future research

a. Develop a national approach to ameliorating the inequitable provision of career and study pathways guidance.

b. Establish a nation-wide repository of student-centric career and study information that complements the existing (Quality Indicators for Learning and Teaching [QILT]) website and enhances students' ability to make well-informed future career and study choices and connect with various sources of expertise, potentially hosted by the National Careers Institute.

c. Craft a national approach to assisting school students and career influencers to navigate the postsecondary environment within and across jurisdictions.

d. Found a national approach to the collection and analysis of data in relation to secondary pathways and education-to-work reporting.

e. Create national datasets with which to examine the changing role of disadvantage in career guidance.

f. Include the student voice in policymaking.

g. Incorporate initial career development information in preservice teacher programs.

Recommendations to enhance career education in schools

h. Recognise the career practitioner role as being critical to the core business of schools.

i. Ensure that career education is undertaken by qualified practitioners in conjunction with trained educators.

j. Make sure that career and study pathways guidance is universal and extends across the student lifecycle.

1. Introduction and background

In general, higher education students from disadvantaged groups experience higher rates of attrition and deferral and poorer graduate employment outcomes. This project addressed the critical need to understand and improve access to, and the efficacy of, information about higher education study options, pathways, and careers for students from low socioeconomic (SES) backgrounds.

We begin the report with an overview of the literature and then report each inquiry in turn. We bring the findings together in the final chapter and outline recommendations for broad national reform, further research, and the enhancement of career education in schools.

The study examined access to, and the efficacy of, information about higher education study options, pathways, and careers for students from low SES backgrounds. It reports in the context of a shift in higher education policy towards including outcomes as a key component of institutional performance. The 2019 *Review of Performance-Based Funding for the Commonwealth Grant Scheme* (Wellings et. al., 2019) recommended the inclusion of a measure of the "overall employment rate" for graduates as part of performance measures for allocating funding under the Commonwealth Grant Scheme: the primary funding source for Australia's public higher education institutions. Of note, the review also recommended that a measure of equity student participation be included in deliberations, specifically in relation to Indigenous, low SES, and regional and remote students.

While no explicit link was made between equity participation and student outcomes in the 2019 review's proposed performance-based funding system, the Australian Government's response reflects its commitment to addressing equity issues over the education lifecycle — from pre-access outreach to postgraduate employment outcomes. Enactment of the Job-Ready Graduates legislation and related policies is an important development in focusing policy attention on employment outcomes for graduates, including low SES graduates (Department of Education, Skills and Employment, n.d.).

In particular, the legislation saw the introduction of the new Indigenous, Regional and Low SES Attainment Fund (IRLSAF) in 2021, which incorporates the Higher Education Participation and Partnerships Program (HEPPP) but focuses more broadly on supporting Indigenous, low SES, and regional and remote students as opposed to the HEPPP's singular focus on low SES students. This was coupled with specific initiatives around measures such as the National Priorities and Industry Linkage Fund (NPILF), which funds university initiatives relating to workplace integration, STEM education, and industry alignment with university teaching.

An additional response was seen in the regional space, with separate initiatives following two recent regional student reviews—the *Independent Review into Regional, Rural and Remote Education* (Halsey, 2018) and the *National Regional, Rural and Remote Tertiary Education Strategy Final Report* (Napthine et al., 2019)—both of which advocated a focus on employment outcomes in addressing regional disadvantage in education. These initiatives support the findings from this study that indicate a focus on compounding disadvantage is required—one that includes low SES and other sources of disadvantage—as well as refocusing equity policy on graduate outcomes rather than just participation.

1.1 Career education in Australia

The aims of an effective career education for Australian secondary school students centre on developing the requisite skills and knowledge to facilitate the transition to a career (Furbish & Reid, 2013) and securing their place in the world of work (McMahon et al., 2003). An uncertain and changing labour market has increased scholarly attention on effective career support for Australian secondary students (Keele et al., 2020; Noble & McGrath, 2016). The presence or lack of this kind of educational support is particularly important for the careers and futures of disadvantaged groups (Keele et al., 2020; Kewalramani & Phillipson, 2019) and potentially impacts their engagement with secondary education (Rice et al., 2015).

While scholars have emphasised the need for equity of access, the promise of quality career development for all students has not yet been realised. Keele and colleagues (2020) suggested that career education in secondary schools is variable at best, and numerous commentators find it to be fragmented and inadequate (e.g., Dandolo Partners, 2017; Department of Education and Training, 2018; Parliament of Victoria Economic, Education, Jobs and Skills Committee, 2018). Extant studies have largely centred on middle-class populations (e.g., Blustein, 2011), and few studies have focused on culturally diverse groups in Australia (see Kewalramani & Phillipson, 2019). In sum, the needs of disadvantaged and marginalised groups are not yet fully understood (Keele et al., 2020).

1.2 Study pathways for secondary students in Australia

Australia's postsecondary pathways are difficult to understand and navigate for people who are familiar with the system, let alone those who are not.

Secondary school students in Australia have multiple pathway options into postsecondary education and work. Perhaps the most recognisable of the study pathways is an Australian Tertiary Admission Rank (ATAR), which is the traditional academic pathway to university studies. The priority in ATAR courses is to provide a comparative measure for all students across a number of subjects, and the ATAR is calculated differently across states. Irrespective of how it is used to determine final outcomes, the purpose of ATAR is clear:

> *The ATAR is not a measure of performance in senior secondary school. It is not a mark or grade. It is not an indicator of school or university quality. It is a ranking system that provides a relative measure of a student's academic achievement across the senior secondary years relative to all other students in the same year. (Shergold et al., 2020, p. 42)*

Although the ATAR system places pressure on students in Years 11 and 12, it provides universities with a simple way to rank applicants. Higher education institutions accept that ATAR is one of many pathways available to aspiring university students; however, this is often not how it is presented in the media or understood by students. Indeed, Shergold et al. (2020) recently described ATAR as "dominat[ing] senior secondary education" (p. 42) despite accounting for only 31% of university entrants in 2014 and still less in successive years.

The most prominent alternative to ATAR is a VET study pathway, which centres on earning certificate-level qualifications. In some Australian states, certificate levels are correlated to points that go towards achieving certified completion of secondary school. An example of this is the Western Australian Certificate of Education (WACE; School Curriculum and Standards Authority, 2020). Students can complete certificates at school if their school is a registered training organisation and there are suitably qualified teachers to deliver the course (SCSA, 2020). Alternatively, students can attend public training organisations (e.g., TAFE providers) or private providers. Kewalramani and Phillipson (2019) noted that these postsecondary pathways are unique to Australia.

Our review of student-facing information on study and career pathways revealed this information to be inconsistent and confusing. This was particularly evident at a national level, with inconsistent terminology and rules making it very hard for students to navigate pathways across state borders. We also found little consistent information for students who might seek to use entry combinations such as ATAR and VET to access postsecondary education; again, acceptable entry combinations, language, and information differed significantly from state to state. We conclude that Australia's postsecondary pathways are difficult to understand and navigate for people who are familiar with the system, let alone those who are not.

1.3 Socioeconomic status and career education

The findings of previous studies agree that students' career aspirations are shaped by a variety of contextual factors including family (Chesters, 2018; Renzaho & Vignjevic, 2011), neighbourhoods (Gilby, 2012), and schools (Furbish & Reid, 2013; Keele et al., 2020). These factors vary and combine in unique ways across different settings: for instance, each school's location, size, SES, population, and characteristics demand a targeted approach (Keele et al., 2020; Kewalramani & Phillipson, 2019).

Research into career education has traditionally centred on mainstream, middle-class populations (Blustein, 2011), with the result that the career needs of disadvantaged groups are not yet fully understood (Kewalramani & Phillipson, 2019). Keele et al. (2020) observed that this can lead to a disconnect between the programs delivered in schools and the needs of program recipients. Gilby (2012) and Kewalramani and Phillipson (2019) found, for example, that the cultural needs of students from immigrant families necessitated strong parent–school relationships and culturally responsive communication for career education and advice to be effective.

Kewalramani and Phillipson (2019) warned that a failure to account for cultural differences can lead to misunderstandings about Australian educational pathways. Lichtenberg and Smith (2009) noted that many Australian Indigenous students would benefit from unique approaches that connect with community and culture as well as with industry and career. Acknowledging indigenous communication styles in career education is also gaining increased scholarly attention (see Tomaszewski et al., 2019), but research in the Australian context is only just emerging (Bailey et al., 2020).

There is general agreement that contextualising career education to meet students' specific needs has the potential to positively impact both educational engagement and academic achievement (Bennett, 2019b; Rice et al., 2015; Raciti, 2019). This is important also because there is compelling evidence that the impacts of disadvantage persist both into postsecondary study and after graduation (Pitman et al., 2019; Richardson et al., 2016).

Austen et al. (2020) argued that “best practice” career development learning could be the key to equitable outcomes in both education and the labour market, and quality career development learning has the potential to reduce outcomes gaps between students from low and high SES backgrounds. Our review found no studies that specifically addressed the development of generic (soft) skills in relation to unpredictable labour markets for secondary students or specific strategies to address the unpredictable contexts presented to secondary students. While a number of career development theories posit possible frameworks (see Becker, 2003; Becker & Hecken, 2009; Lent et al., 1994; Marginson, 1993), this remains a gap in the literature.

A focus of this study was the extent to which schools have qualified career practitioners available to them. While policy documents (e.g., Ministerial Council for Education, Early Childhood Development and Youth Affairs [MCEECDYA], 2010) and professional standards (CICA, 2019) have long emphasised the importance of qualified career practitioners in secondary schools, studies consistently show that many of the people providing career education are not qualified career practitioners (Furbish & Reid, 2013; Keele et al., 2020; Vaughn & Gardiner, 2007). Rather, these career influencers are in the role by chance or because of a tap on the shoulder by their school principal (Irving & Cook, 2011). Despite these challenges, teachers form part of the solution. This is because, as Schloss (2011) argued, it is unrealistic in many secondary schools to expect a single career practitioner to reach all students. While teachers may be best placed to provide career education that has been embedded into school curriculum (Welde et al., 2015), teachers may be ill-prepared for this task (Schloss, 2011). A further challenge is that although many teachers are committed to the promise of quality career education, they can hold a narrow view of career education that is not in line with either good practice or the professional standards (Keele et al., 2020; Schloss, 2011).

The answer is likely to lie in a collaborative approach. An obvious though underused solution is for career practitioners and teachers to collaborate on embedding and codelivering career education within the school curriculum (Galliott & Graham, 2014; Keele et al., 2020). Furbish and Reid (2013) asserted that the embodiment of a teacher or leader alongside a career educator can support a whole-school approach. The literature also supports the engagement of school, community, family, and industry, particularly in regional, rural, and remote settings (Kilpatrick et al., 2021). These strategies have particular relevance for students from disadvantaged groups because they are less likely to have access to cocurricular career practitioner support (Lichtenberg & Smith, 2009).

Finally, we note the role of social and human capital alongside identity and agency in effective career education and influence—so-called opportunity hording (Oxfam, 2014)—that perpetuates social disparities. Parents and caregivers are key career influencers (Furbish & Reid, 2013) in that parental level of education is a strong predictor of a child’s educational achievement (Chesters, 2018) and predicts a parent’s ability to positively influence career aspirations and pathways (Chesters, 2018). As Tomlinson (2016) attested, “Families with financial, social, cultural or political capitals bring those capitals to bear on education and continue to do so in the transition to work and beyond” (p. 422). This has obvious relevance to understanding disadvantage and decision-making at the secondary school level and merits far more attention.

The review of literature, together with our attempts to navigate publicly available postsecondary pathways information without the help of a career practitioner, confirmed not

only that career education has a crucial role to play in preparing young people for their futures but that it is all but impossible to navigate postsecondary education pathways without expert help. The themes that emerged from the review informed the survey and focus group instruments employed later in the study.

2. Overview of procedures

This study asked one main research question and three ancillary questions:

1. How might the information about higher education study options, pathways, and careers available to students from low SES backgrounds be made accessible, equitable, and effective?

    a. What career support is provided to senior students in schools servicing primarily low SES locales and in what ways does this support differ from that provided in other schools?
    b. What capabilities do students from low SES backgrounds bring to higher education with regard to developing employability skills, and how do these differ from other students?
    c. How do students from low SES backgrounds engage with university support services to develop their employability, and does their engagement differ from that of other students?

The research question and ancillary questions were addressed through three inquiries:

Inquiry 1 sought to better understand study pathways and careers support as experienced by students and influencers within low SES and other secondary schools. We conducted a review of the literature, paying particular attention to the literature on students from low SES backgrounds. We also conducted an extensive analysis of data from the LSAY. The findings of the literature review and LSAY analysis informed the design of a nation-wide survey of secondary school career advisors and influencers, which attracted 92 responses.

In Inquiry 2, we employed and analysed data from Bennett's (2019, 2021) social cognitive measure of perceived employability, which encompasses 16 aspects of study and career. Data from 6,300 participating students at three Australian universities were linked with institutional and national datasets to compare the confidence of university students from low SES backgrounds with that of their peers.

Informed by the results of Inquiries 1 and 2, Inquiry 3 engaged 54 secondary school and university students in focus group discussions about their experiences of career and study decision-making. The student voice provided crucial comparative insights into how disadvantage is experienced during the transition into study and across the undergraduate experience. The themes and issues identified by these students were compared and contrasted with the findings from the LSAY analysis (Inquiry 1) and students' self-assessments of their employability (Inquiry 2). The comparative results underpin the identification of five elements through which students' career and study decision-making can be understood and enhanced, discussed in the final chapter.

Shown in Figure 2, each inquiry addressed one or more questions and supported the other lines of inquiry by generating data and findings to complement that of the others. The procedures adopted for each project phase are included within each reporting chapter.

Figure 2. Methodological approach

2.1 Ethics approvals

Ethics approvals were secured through Curtin University's Human Research Ethics Committee (approval number HRE2020-0079). Participating universities secured either reciprocal ethical approvals or new approvals as required. Focus groups held at selected Catholic schools in Western Australia were subject to separate ethical approval from Catholic Education WA (reference number RP2020/36).

All participants received information sheets and consent forms. In the case of secondary school students, these were relayed to parents or guardians by the relevant authority and lodged with the team prior to the student's involvement.

3. Careers information for low socioeconomic status students: evidence from the Longitudinal Survey of Australian Youth

3.1 Overview

Inquiry 1 featured an extensive analysis of the career guidance information contained in the LSAY. The LSAY tracked cohorts of youth through to age 25 years, with each cohort commencing with surveys of a nationally representative sample of high school students. The data include information on whether students accessed career guidance in secondary school and their satisfaction with that advice. Our analysis drew on five LSAY cohorts launched in 1998, 2003, 2006, 2009, and 2015 and focused on career guidance and information received in Year 11 and Year 12.

The analysis was designed to reveal differences in access to and the perceived quality of career guidance advice according to student SES status, including how this has changed over time in Australia. We used measures derived from student family background and school sector attended as indicators of SES. Descriptive analyses are presented of career guidance activities students engaged in and the reported usefulness of those activities, focusing on Years 11 and 12 students, and how these varied by SES background and school sector. To the extent possible given changes in the information collected in different years, multivariate logistic regression models were used to estimate the independent effect of SES background on the likelihood of students accessing different forms of careers advice and whether this relationship varied over time.

This chapter provides an overview of the data, analysis approach, and key findings relating to SES gradients in access to careers information. Supplementary details and statistical results, including the wording of survey questions and analyses of student perceptions of the usefulness of different sources of careers information, are contained in Appendix 2.

3.2 Data and methods

3.2.1 LSAY samples and careers information

The LSAY comprise surveys of six cohorts of young Australians in their transition from school, initiated in 1995, 1998, 2003, 2006, 2009, and 2015 (referred to as Y95 … Y15, respectively). For each cohort, data were collected from an initial sample of around 14,000 youth. From 2003, the initial cohorts were integrated with samples chosen for the Organisation for Economic Co-operation and Development's (OECD's) Programme for International Student Assessment (PISA). For these cohorts, most respondents were aged 15 and in Year 10 of high school in the first wave. All LSAY cohorts are tracked through to (modal) age 25, with data collection ongoing for the Y09 and Y15 cohorts at the time of writing.

For the Y95 cohort, questions on careers information were not asked until participants were in postschool education. Given this report's focus on careers advice provided to secondary students, data from Y95 were not included in the analysis. Table 1 shows the number of

responding students contributing data to the analysis, by cohort and school year. Table A2.6 in Appendix 2 provides details on the full LSAY cohort samples and attrition.

Table 1. LSAY data used in the analyses: responding students by cohort and school year

		Responding student sample by school year		
Cohort	**Year**	**Year 10**	**Year 11**	**Year 12**
Y98[a]	2000		8,241	
Y98	2001			7,032
	2002			
Y03	2003	7,378[b]		
Y03	2004		5,717	
Y03	2005			4,856
Y06	2006			
Y06	2007		5,644	
	2008			4,837
	2009			
Y09	2010		5,563	
Y09	2011			4,703
	2012			
	2013			
	2014			
	2015			
Y15	2016		2,786	
Y15	2017			2,534

Notes: a. Data from 1995 (Y95) were not included in the analysis as the relevant questions were not asked in that iteration of the LSAY. b. Data not included in multivariate analysis.

The LSAY collected a wealth of information on students' experiences and activities at school, their postschool education and training, and their entry into the workforce. Critically, for this study, the LSAY collected information on sources of careers advice and career guidance services that students accessed while at school. The main source of information relating to careers information received by students was in the form of questions on what activities students engaged in or what sources of advice they accessed to help them make decisions about their future. Other questions were asked in various years relating to how useful students found the information they received, how well prepared they felt for leaving school, developing a formal career plan, and the main influences on their decisions about their careers. The wording of questions was not consistent between the surveys, or even from wave to wave for each cohort, limiting capacity to make comparisons over time and as youth progressed through school. Y03 was the only cohort for which information on careers information accessed was collected from students in Year 10.

3.2.2 Measuring socioeconomic status

Two broad indicators of SES were used. One relates to the socioeconomic background of students' families and the second to school sector. For all students still at school, the LSAY record whether the school they are attending is a government school, a Catholic school, or "other". The "other" category will be composed of non-Catholic or independent

private schools and can be expected to have a student population from higher socioeconomic backgrounds. This categorisation is available for high school students in all five cohorts analysed.

To gauge how access to careers information differed by socioeconomic background for the Y98 cohort, we used a derived variable available in the data based on the student report of their father's occupation in Wave 1. The variable is the "ANU3 scale" of occupational prestige of that occupation and scaled to range from 0 to 100. On the basis of that scale, the sample of Year 12 students in 2001 (Wave 4) were divided into quartiles, with the lowest quartile (Q1) comprising students whose fathers had the lowest occupational prestige, and the top quartile (Q4) comprising students whose fathers had the highest occupational prestige. Derived variables are also available based on the ANU3 scale of the mother's occupation and a corresponding scale based on both parents' scales. The use of the scale based on father's occupation was purely a pragmatic decision in that this had substantially fewer missing values (at 14%) than the alternative options.

The data from the Y03 to Y15 cohorts included a derived variable known as the "index of social and cultural status" that is generated from information collected in the initial (Wave 1) survey for each cohort. The construction of the index is described by the OECD (2002, n. p) as follows:

> *The Programme for International Student Assessment (PISA) index of economic, social and cultural status was created on the basis of the following variables: the International Socio-Economic Index of Occupational Status (ISEI); the highest level of education of the student's parents, converted into years of schooling; the PISA index of family wealth; the PISA index of home educational resources; and the PISA index of possessions related to "classical" culture in the family home.*

Again, the index was used to allocate students to SES quartiles, with the 25% of students with the lowest index values referred to as Q1, and the 25% of students with the highest SES background referred to as Q4. For the Y03 to Y15 cohorts, the quartiles were calculated with reference to the distribution of the index for that cohort's sample of students attending school at Year 11.

3.2.3 Methods

A comprehensive overview of career guidance information accessed by high school students was generated through descriptive analyses of key variables available across the cohorts, including the proportion of students accessing various forms of careers information by school year and means of their ratings of the usefulness of that information. This chapter focuses on the evidence relating to

- how access to careers information has changed over time
- how access to careers information varies by SES
- whether the SES gradient—the relationship between SES status and access to careers information—has changed over time.

Changes over time were assessed, first on differences in the means for key variables between cohorts, with those means calculated using the population weights provided in the LSAY data. As shown in Table 1, 16 years elapsed between the Y98 Year 12 students and the Y15 Year 12 students being surveyed. In practice, however, the lack of consistency in

questions between surveys meant that comparisons could only be made over a shorter interval, often for the 9-year gap between the Y06 and Y15 cohorts.

Differences by SES were assessed by comparing weighted means by school sector and by quartile of the family socioeconomic background, as defined above. This is presented based on data from the earliest (Y98) and most recent (Y15) cohorts. Finally, students' access to careers information in Years 11 and 12 was modelled using pooled data from Y03, Y06, Y09, and Y15, the cohorts for which there is a reasonable degree of consistency in the careers information collected. Multivariate logistic regression models were used to provide estimates of the independent effect of school sector and SES background on the likelihood of a student accessing selected sources of careers information. The inclusion of dummy variables for each cohort generated a formal estimate of whether the likelihood of accessing each type of information changed over time. Finally, interaction terms between cohort and school sector and between cohort and SES quartile were added to test whether those relationships changed over time.

3.3 Participation in career guidance activities at school

Career and study information for Years 11 and 12 students has become increasingly focused on university pathways. This is out of line with university entrants of whom more than half enter through alternative pathways.

This section focusses on the main source of information relating to careers information received by secondary school students: namely, questions on which activities students engaged in, or what sources of advice they accessed, to help them make decisions about their future. Other questions were asked in various years relating to how useful students found the information they received, how well prepared they felt for leaving school, developing a formal career plan, and the main influences on their decisions about their careers. Analyses of these items are presented in Appendix 2.

Almost all students participated in some form of careers advice activity or accessed careers advice information, with that participation being highest in Year 12. Common activities included talking to family and friends, listening to a talk by a school career advisor, reading printed information or accessing information on the internet, talking to teachers or career advisors, and attending university or TAFE information sessions. There were substantial changes to the response categories between cohorts, prohibiting direct comparisons over all cohorts. The proportion of students participating in the various activities to source careers information is summarised in the figures below for the Y06, Y09, and Y15 cohorts. We refer readers to Appendix 2 for more details and frequencies for earlier cohorts. Figure 3 shows the incidence of participation in different activities for Year 11s and Figure 4 for Year 12s.

The most reported source of careers information were the informal channels of simply talking to family and friends. Around 90% of students reported having had such conversations about their future career options. Reading either printed or online material was also common, applying to around 80% of students. In regard to career advisors, the Y06 and Y09 cohorts were asked whether they had spoken to the career advisor individually, and around 70% reported having done so. For the Y15 cohort, the category was a more general one of having

spoken to a teacher or career advisor at school about career plans, and 75% of Year 11s and 81% of Year 12s responded affirmatively.

In terms of the change in participation in careers information activities between Year 11 and Year 12, there was a substantial increase in attendance at university information sessions from less than 50% to over 60% for all three cohorts. For the Y15 cohort, there were also increases of around 10 percentage points from Year 11 to Year 12 in the proportion of students who reported developing a formal plan about future study and work and in the proportion accessing careers information online. For the Y06 and Y09 cohorts, organised visits to a workplace were much more common in Year 11 than in Year 12.

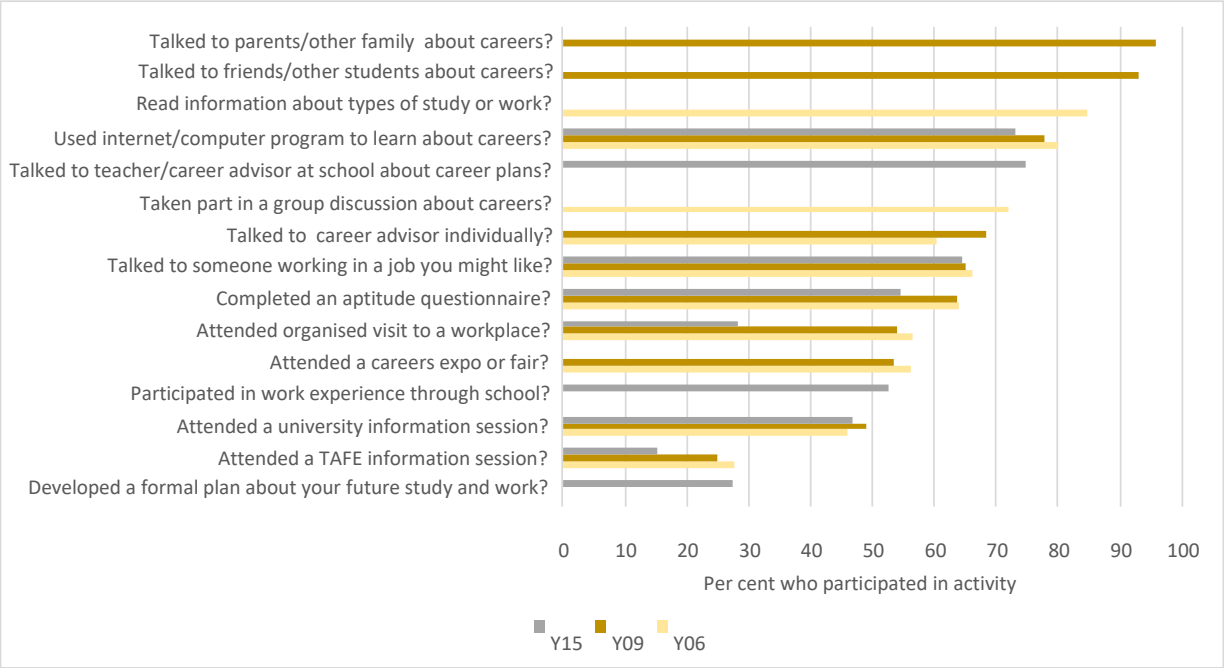


Figure 3. Proportion of students participating in careers advice activities, Year 11s: Y06, Y09, and Y15

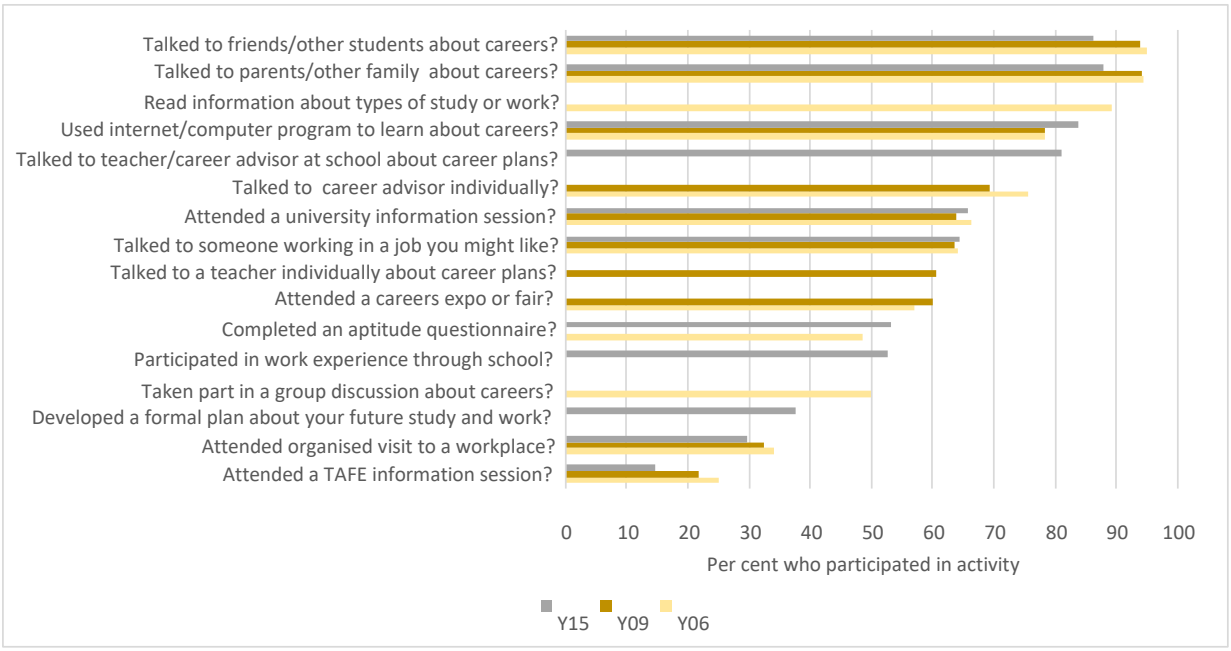


Figure 4. Proportion of students participating in careers advice activities, Year 12s: Y06, Y09, and Y15

There appears to have been a decline over time in engaging with a number of avenues of careers information, particularly for Year 11 students. For Year 11s, the decline appears particularly substantial for organised visits to a workplace; TAFE information sessions; completing a questionnaire on their interests, strengths, and abilities; use of the internet or computer program, and talking to someone working in a job of interest. For Year 12s, this decline in engagement with careers information is apparent for TAFE information sessions, talking to friends, talking to family, and workplace visits. There is evidence that accessing careers information online rose for Year 12s; for both Years 11 and 12 students, attendance at university information sessions remained relatively constant over those 9 years.

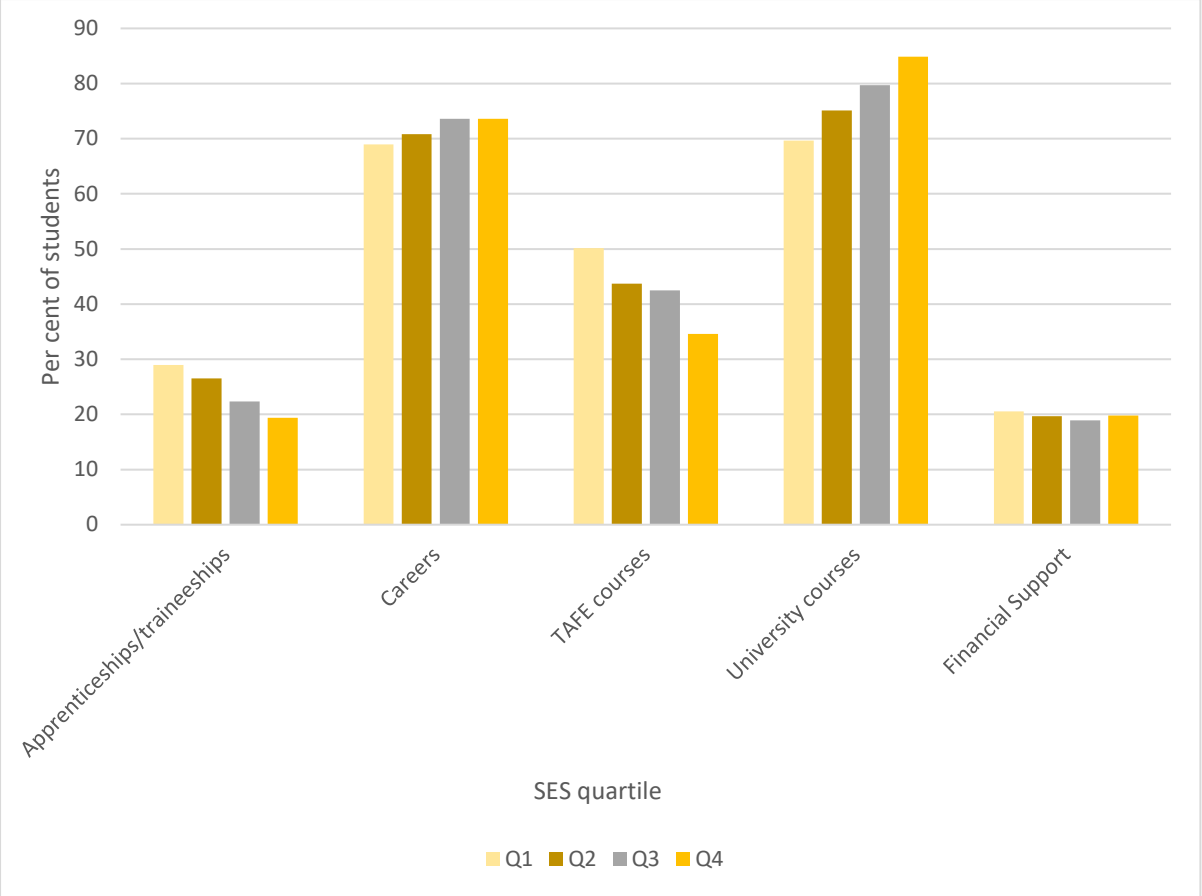
Potentially, these trends suggest a growing expectation over time that students will progress from school to higher education and a commensurate decline in the provision of, and student demand for, information about other vocational options. This is concerning given that students' assessments indicate they placed a high value on a number of those direct vocational sources of information, notably talking to people in a job of interest, workplace visits, and talking to parents and other family members (see Appendix 2, Table A2.3 and Figures A2.1–A2.3). Unfortunately, the changes in categories make it hard to assess whether there has been a change over time in the proportion of students receiving information through career advisors. The available evidence indicates that students found talking to career advisors to be a useful source of information.

3.4 Access to careers information by socioeconomic status

To provide some appreciation of variation by SES, we present descriptive analyses for the earliest (Y98) and most recent (Y15) cohort to have collected data on access to careers information. Figure 5 shows the incidence of access to each type of information reported in Y98 by SES quartile. A clear pattern is evident in which students from higher SES backgrounds were more likely to access information about university courses. This is also true of more general information about potential careers of interest, albeit with a less pronounced SES gradient. In contrast, for this cohort, coming from a lower SES background was associated with a higher likelihood of accessing information on apprenticeships or traineeships and on TAFE courses.

The patterns by SES are highly statistically significant for each type of information except for information on financial support for TAFE or university studies. That is to say, the differences are unlikely ($p < 0.01$) to be observed purely through random variation across the categories.[2] The absence of a relationship for information on financial support is likely to reflect a lower need for financial assistance for youth from high SES backgrounds. We cannot say how much of these gradients are driven by the type of information sought by students (and their parents) as opposed to how the information is targeted to students of different backgrounds. Each type of information was potentially available at almost all schools.

[2] Statistical significance is assessed using the Mantel-Haenszel chi-square statistic, which takes account of the ordering of the four SES categories (Q1 to Q4).



Notes: Based on observations for around 1,500 students in each quartile.

Figure 5. Proportion of Year 12 students accessing careers information, by SES quartile, Y98 cohort

The other proxy investigated for socioeconomic background is school sector (Figure 6). A substantially higher proportion of students from independent private schools reported receiving information about university courses, apprenticeships or traineeships, and about careers in general. Students from Catholic schools were also more likely than those from government schools to receive information on university courses, while the government sector stood out as providing the highest proportion of students with information on TAFE courses.

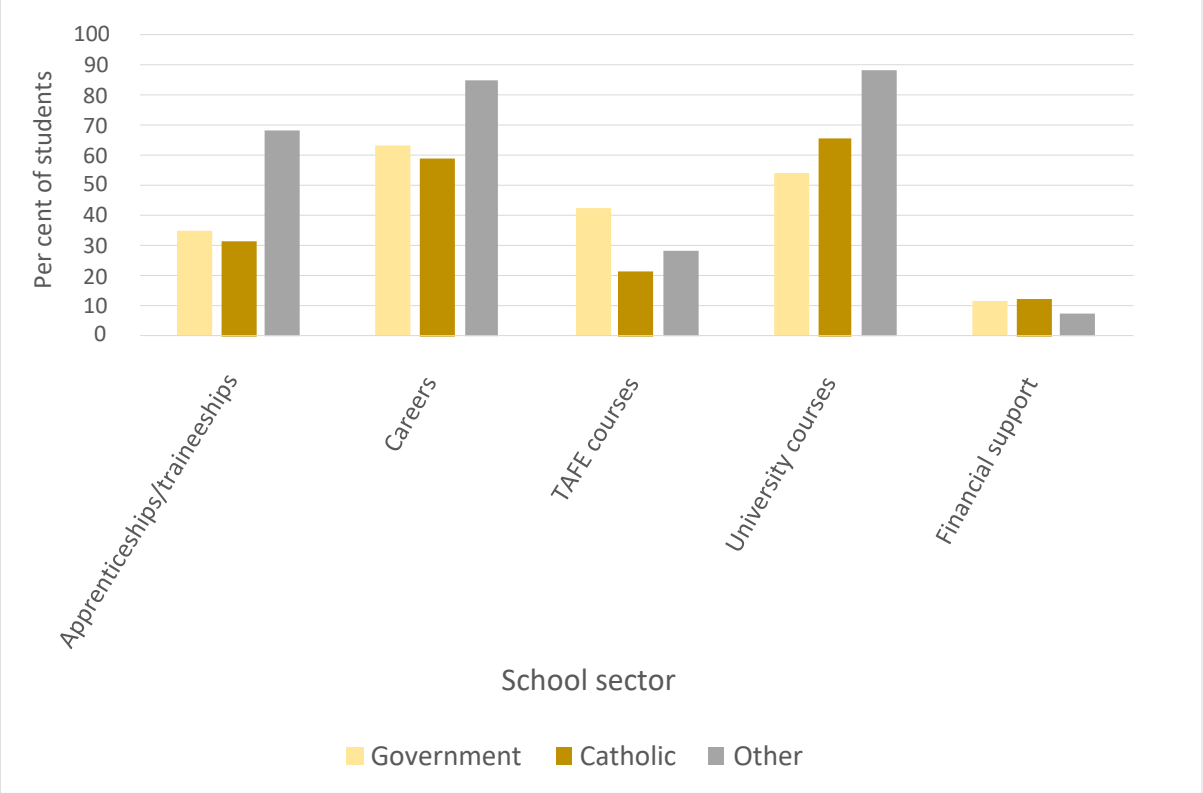


Figure 6. Proportion of Year 12 students accessing careers information, by school sector, Y98 cohort

Figure 7 depicts the socioeconomic gradients in participation for selected careers information activities for Year 12 students from Y15. All the careers information activities that the Y15 Year 12s were asked about displayed significant differences in their incidence across SES quartiles by the chi-square test.[3] Students from higher SES backgrounds were more likely to access information about university courses, while low SES students were more likely to access information on nonprofessional pathways. The only three sources of information that displayed decreasing engagement with SES quartile were participation in work experience, organised visits to a workplace, and TAFE information sessions. This is a similar pattern to that seen in the Y98 data, collected 17 years earlier.

[3] Using the Mantel-Haenszel chi-square statistic; see Footnote 2. Each was significant at the 1% level, except for talking to someone in a potential job of interest (p = 0.02), work experience through school (p = 0.03), and developing a formal plan (p = 0.04).

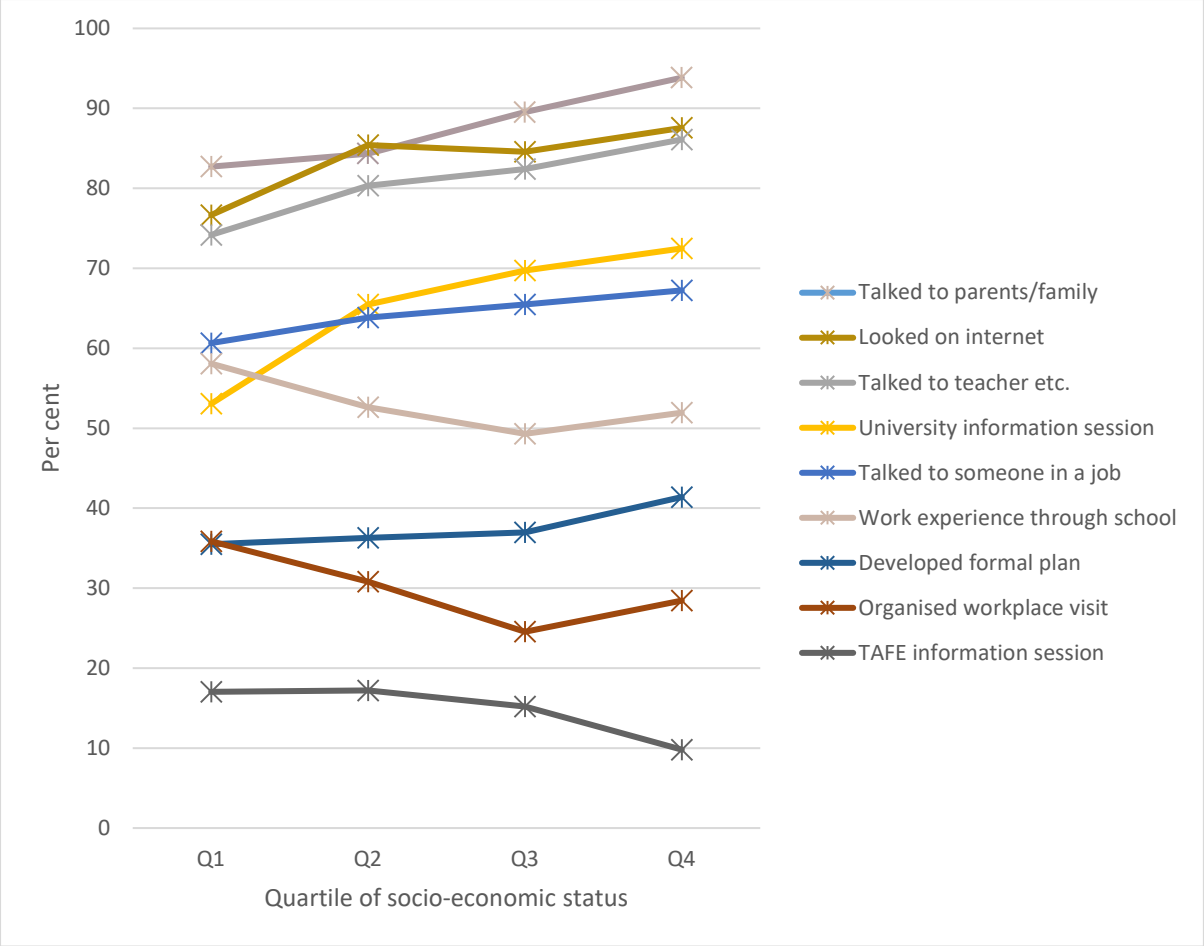


Figure 7. Gradients in selected career planning actions by SES quartile, Y15 cohort, Year 12 students

3.5 Multivariate logistic regression analysis

Students' access to careers information in Years 11 and 12 was modelled using data from Y03, Y06, Y09, and Y15, the cohorts for which there was a reasonable degree of consistency in the careers information collected. As data on careers information were collected for Year 10 students only for the Y03 cohort, Year 10 students were not included in the multivariate analyses. The data for estimation were obtained by pooling observations from all cohorts and year levels for which consistent variables were available and could comprise data from a maximum of eight cohort waves: two year levels (Year 11, Year 12) for four cohorts (Y03, Y06, Y09, Y15). Dummy variables were included to capture cohort and year effects, with additional controls included for gender, Indigenous status, non-English-speaking background (NESB), and state or territory, all in the form of binary dummy variables. Students were classified as having an NESB background if they reported speaking a language other than English at home in the Wave 1 survey. State or territory relates to the location of the school attended. Note that for most of the cohorts, the data did not permit distinguishing between South Australia and Northern Territory, and hence, students from these two jurisdictions were grouped into a single category.

We used the quartiles of the index of social and cultural status discussed above as a measure of SES that was comparable across cohorts. Hence, this entered the models as a continuous variable ranging from 1 to 4. As the quartiles were calculated with reference to the sample of students attending school in Year 11, the value remained fixed for each

student in Year 11 and Year 12. The school sector variable was measured concurrently and could change from Year 11 to Year 12 if the student changed school. School sector was modelled by the inclusion of two dummy variables capturing attendance at a Catholic private school and attendance at an independent private school, making attendance at a government school the omitted (or comparison) category.

The estimated coefficients from the regression models and their associated significance levels are reported in Appendix 2, Table A2.4. There is robust evidence that being from a higher SES background is associated with greater engagement with most of the careers advice activities, including talking with a career advisor individually, attending a university information session, speaking to a person who works in a job of interest, discussing potential careers with family, and accessing careers information on the internet. In contrast, students from higher socioeconomic backgrounds were estimated to be less likely to attend a TAFE information session or to attend an organised workplace visit. Students attending independent private schools were significantly more likely than those from a government school to have participated in each of the careers advice activities with the exception, again, of a substantially lower likelihood of attending a TAFE information session. Students from Catholic private schools also appeared to have greater access to most forms of careers information compared with students from government schools, although the effects were not as pronounced. For Catholic school students, there was a reduced likelihood of attending a TAFE information session and of attending an organised visit to a workplace, relative to students from government schools.

To provide a gauge of the magnitude of these effects, Table 2 presents the percentage point effect of a 1-unit increase in these variables on the probability of having participated in each activity, evaluated at the mean. For the SES variable, this relates to the effect of a move up by one SES quartile, while for the school sector dummy variables, it can be interpreted as the estimated effect of attending a Catholic school or an independent private school, as opposed to a government school. Note that there is a very large effect of each of these variables on the effect of attending a university information session, particularly when considering that the SES variable can vary from 1 to 4. The probability of having attended a university information session increases by about 5 percentage points in each case from a baseline of 57%. Greater access to career advisors at nongovernment schools is also apparent. Moreover, these markers are additive — the estimates relate to the independent effect of one variable holding the others constant. In reality, students from higher SES backgrounds were also more likely to attend private schools. Hence, estimating the effect of SES while excluding the variables for school sector, and vice versa, would generate even larger estimates.

Table 2. Estimated effect of SES and school sector on participation in careers information activities (marginal effects at mean)

Careers information activity	Baseline probability (sample mean)	Percentage point effect of …		
		+1 quartile of SES	Attending Catholic school v. Govt school	Attending other private school v. Govt school
Talked to career advisor individually	63.4%	+0.9 ***	+3.5 ***	+5.8 ***
Talked to career advisor or teachers	77.5%	+1.0 *	+1.8 ns	+6.1 ***
University information session	57.3%	+5.1 ***	+5.7 ***	+6.9 ***
TAFE information session	21.9%	−2.1 ***	−2.4 ***	−7.1 ***
Organised workplace visit	41.5%	−0.5 *	−2.9 ***	+2.3 ***
Spoke to person in job of interest	64.9%	+1.9 ***	+2.2 ***	+5.0 ***
Talked to parents or other family	94.2%	+1.5 ***	+2.0 ***	+1.7 ***
Looked for information online	71.2%	+1.7 ***	+2.5 ***	+1.5 **

Notes: ***, **, and * indicate the underlying estimated coefficient was significant at the 1%, 5%, and 10% level, respectively; ns indicates the underlying coefficient was not significant at the 10% level.

It was also possible to formally test whether these effects were changing over time. Note the model for looking for information online uses data collected at intervals spanning 13 years and four cohorts, and the other models span three cohorts and either 6 or 10 years. We assigned the four cohorts' values of 1 through to 4 as a rough proxy for time and included interaction terms between cohort and the SES quartile and the school sector variables to see if there was an additional time effect associated with those variables. Table 3 reports the coefficients only for the key time-by-SES and school sector interaction terms.

The results indicate that many of these gradients in SES are becoming more pronounced over time. These include the effects of SES quartile and attendance at a Catholic school on individual access to career advisors, of SES status and attendance at an independent private school on attendance at university information sessions, and the reduced likelihood of attendance at TAFE information sessions and organised visits to workplaces by SES status.

Table 3: Likelihood of engaging selected sources of careers advice: results for interaction terms

	Cohort interacted with:					
Activity (dependent variable)	**SES quartile**		**Catholic school**		**Private school**	
Talked to career advisor individually	0.077	***	0.130	***	0.051	
University information session	0.018	**	−0.086	**	0.154	***
TAFE information session	−0.114	***	−0.137	***	0.030	
Organised workplace visit	−0.095	***	−0.138	***	−0.044	
Spoke to person in job of interest	−0.012		0.035		0.063	
Talked to parents or other family	−0.133	***	−0.182		−0.198	
Looked for information online	0.177	***	0.025		−0.017	

Notes: ***, **, and * indicate the estimated coefficient was significant at the 1%, 5%, and 10% level, respectively.

3.6 Key findings

Almost all students reported engaging in some activity to access careers information, although the range of activities canvassed included informal channels of information such as talking to parents, other family, or peers. However, there appears to have been a decline in the proportion of students accessing a number of sources of careers information over time, including TAFE information sessions, organised workplace visits, and discussions with existing workers in potential jobs and even conversations with parents, other family, and peers.[4] Possibly this reflects an increasing expectation that students will progress to university, with a declining commitment on behalf of schools and families to provide information on alternative pathways. This is concerning given students ranked the value of visits to workplaces and talking to someone in a job of interest as particularly valuable sources of careers information (as detailed in Appendix 2). Speaking individually with a career advisor was also consistently rated by students as one of the most important or useful sources of careers information, particularly for students in Year 12.

Significant SES gradients were observed in student access to careers information. Students from higher SES backgrounds were more likely to access most forms of careers information, including from career advisors and from universities. However, those from low SES backgrounds were more likely to receive information on nonprofessional pathways, such as from TAFEs and organised workplace visits. This was apparent in 1998 and continues to be the case. These findings relate both to variation by quartile of the families' socioeconomic backgrounds and to variation by school sector. For the Y98 cohort, the proportion of students accessing university information increased by around 5 percentage points per SES quartile. Estimates from multivariate models for the Y03 to Y15 cohorts suggest this effect and its magnitude persisted across the period despite the introduction of the demand-driven system in higher education providing, in theory, greater access to university. The evidence also shows that students from Catholic and independent private schools had greater access to a career advisor, as did students from families of higher socioeconomic background,

[4] Note the coefficients for the cohort dummies reported in Appendix 2 provide further evidence of an increase over time in individual access to a career advisor and participation in university information sessions, and a decreased participation over time in TAFE information sessions, organised workplace visits, speaking to people in a job of interest, and talking to parents or other family.

irrespective of school sector attended. If anything, this divide in access—whereby students of high SES were more likely to access career advisors and university information, and students of low SES were more likely to access direct vocational information—appears to have become more entrenched over time. A further concern is that access to those direct vocational sources of information appears to have declined over time.

Students from high SES backgrounds are more likely to access most forms of careers information. Students from low SES backgrounds are more likely to receive information from TAFEs and organised workplace visits. This trend was apparent in 1998 and continues to be the case.

University education still emerges as a pathway of privilege: Students from high SES backgrounds are more likely to enter university and gain a university degree, which is strongly associated with better outcomes in life across many domains. The evidence here suggests that this facet of Australian society is partly perpetuated by information provided to students in high school. Students from more privileged backgrounds are more likely to access information on pathways that will lead to professional occupations, while students from low SES backgrounds are more likely to receive information on pathways to nonprofessional vocations.

What we cannot say is how much of this divide is driven by variation in access to different forms of careers information, as opposed to the differences in the sources of information sought by students of high versus low SES background. It is the case that students from low SES backgrounds placed relatively more value on direct vocational careers information, and those from high SES backgrounds placed more value on university information, suggesting that student demand drives some of the socioeconomic gradients observed. How much this is reinforced by practices and biases within the education system is difficult to say; analyses of within-school versus across-school effects might throw some light on this question. Another potential avenue for future research is to look at whether accessing careers advice leads to better outcomes in the school-to-work transition.

4. Careers information for students from low socioeconomic status backgrounds: evidence from career advisors and influencers

4.1 Overview

Results from the literature review and LSAY data analysis informed a nation-wide survey of career influencers at government and nongovernment schools. The survey prioritised ancillary questions 1a and 1b:

1a. What career support is provided to senior students in schools from different socioeconomic backgrounds?

1b. What support is provided to the career advisors in schools from different socioeconomic backgrounds and their self-assessment of the service provision?

The team solicited responses from a diverse range of schools to compare the findings from lower and higher SES schools (please refer to the "Glossary of Terms"). Where a career advisor position did not exist, the survey targeted teachers and other stakeholders (e.g., deputy principals) who were charged with similar responsibilities. The survey was the first nation-wide picture of careers and study advice from an equity perspective. The survey instrument amassed data on respondents' career histories, formal and informal training, how they viewed their roles, their employment arrangements, how and where they sourced careers information, and how they determined what advice they provided. The survey also explored whether career and pathway advice varied according to students' backgrounds and genders.

All schools in Australia were invited to participate in the survey via direct contact, education events, mailing lists, and networks. Survey questions were primarily quantitative to allow for statistical analysis and comparison of results across low SES and other schools. Qualitative questions enabled the team to explore the quantitative data in greater detail and to triangulate the findings with the findings of Inquiries 2 and 3. The survey received 92 valid responses from career advisors of which 65 respondents were from schools and 27 from postsecondary sectors including TAFE colleges, departments of education, and universities.

The SES of schools was measured using the Index of Community Socioeconomic Advantage (ICSEA; see "Glossary of Terms"). Schools can be categorised into low, medium, and high SES using ICSEA scores. To enable broad comparisons between career advisors in low SES and in high SES schools, we divided the sample into two categories, with the lower 50% of the sample (ICSEA score ranging from 0 to 54) classified as lower SES and the higher 50% of the sample (ICSEA score ranging from 55 to 99) classified as higher SES. This categorisation enabled us to make a comparative analysis of lower and higher SES schools and to comment on how the access and provision of careers advice varied based on the SES of schools. In this report, we use the terms lower and higher when discussing survey results.

Dividing the sample resulted in 32 respondents categorised as lower SES, 33 respondents as higher SES, and 27 from postsecondary advisors. The postschool category was analysed

separately as ICSEA scores can only be assigned to schools. This chapter reports the overall trends and a comparative analysis of lower and higher SES schools. We include a brief analysis of postsecondary advisors and their challenges in the provision of career education.

4.2 Overall trends and a comparative analysis of lower and higher socioeconomic status schools

Career and study pathways guidance in lower SES schools is more likely to be provided by staff who are not qualified career practitioners. Qualified career practitioners in lower SES schools tend to be less experienced than their peers.

Career practitioners (self-identifying as their main role) accounted for 44.5% of the total sample, while 55.5% included other influencers such as teachers involved in career education (17.4%), vocational pathway coordinators (16.3%), school leaders (14.1%), and others including generalist teachers (7.6%).

In comparing roles by SES, 54.5% of the career advisors identified career practitioner as their main role in higher SES schools (n = 33) compared with 37.5% from lower SES schools (n = 32). A further 31.2% of lower SES school teachers (n = 32) indicated involvement in career education as part of their work (Figure 8), and 40.7% of the postsecondary respondents identified as career practitioners (Figure 8). While specialist career practitioner roles clearly existed across all school sectors, it is also clear that few schools had the financial resources to provide these dedicated roles. This appears to be a more widespread issue in lower SES schools, with only one third of career practitioners in lower SES schools reporting that they were employed on a full-time basis.

The data also highlight a difference in the proportion of qualified career practitioners between lower and higher SES schools: while 70% of the respondents from higher SES schools (n = 33) were qualified career practitioners, this was the case for only 47% of those from lower SES schools (n = 32) (Figure 9).

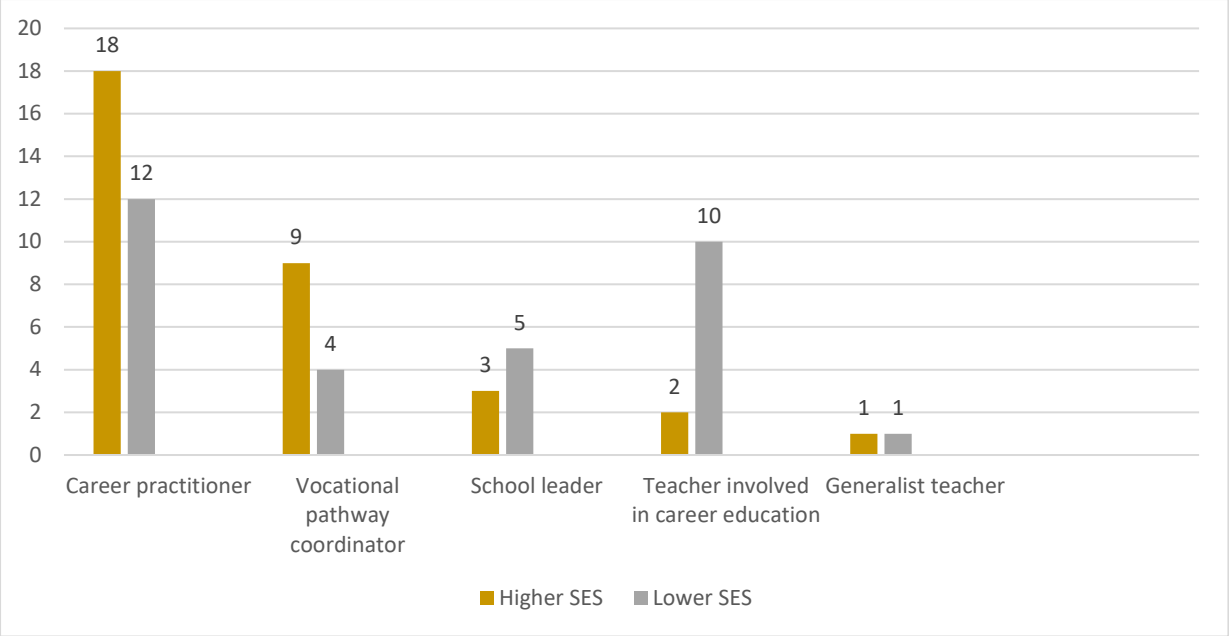


Figure 8. Main role of the respondent

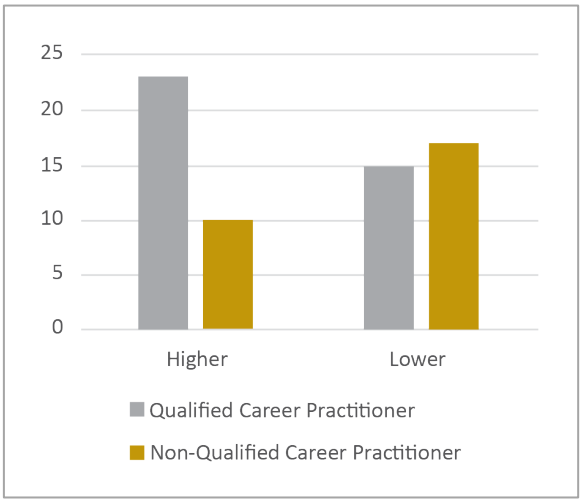


Figure 9. Proportion of qualified career practitioners

A similar comparative difference is evident in the level of experience for career practitioners, with a skew to less experienced practitioners in lower SES schools. Forty-one per cent of respondents in lower SES schools identified as having less than 4 years of experience compared with 18% in higher SES schools; 31% of practitioners from lower SES schools had 5 to 10 years of experience compared to 36% from higher SES schools. Higher SES schools also had a higher percentage (46%) of career practitioners with more than 10 years of experience compared with the lower SES schools (28%). This comparison provides a clear indication that less qualified and less experienced career advisor roles existed predominantly in lower SES schools.

The research team invited respondents to indicate how valued they felt by their institution and analysed these data against responses about resourcing. Not surprisingly, and in line with resourcing, 66.6% of the respondents from higher SES schools felt highly valued, and only 50% of the respondents from lower SES schools felt the same way (Figure 10).

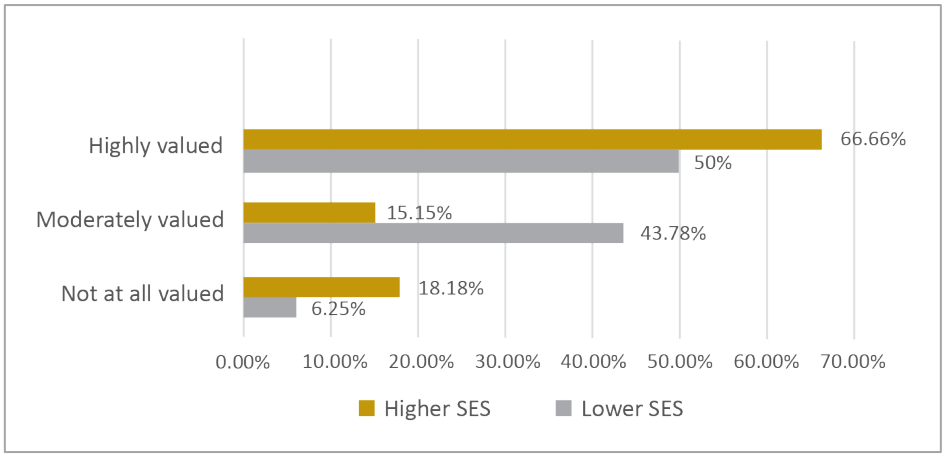


Figure 10. Extent to which respondents felt valued (%)

Text-based survey responses illustrate respondents' concerns that they had insufficient time and that the career practitioner role was not valued by the staff at many schools.

> *The school does not even recognise that I am a qualified career practitioner.*
>
> *The expectations far exceed the duty statement. On average I work 50+ hours per week (and up to 60 hours per week in peak times) which is unrecognised.*
>
> *Job dissatisfaction (too much stress, little time, too much administration and not enough time to perform one-on-one consultations with students), school environment dissatisfaction (too much politics and "key targets"), too much focus on student performance in exams rather than their confidence and readiness for life/work after school.*

Asked whether they would like to be performing the same role in 5 years' time, the survey data showed no significant difference between the two cohorts; however, it is concerning to see that 25% of all respondents did not want to be performing their role in the longer term (Figure 11).

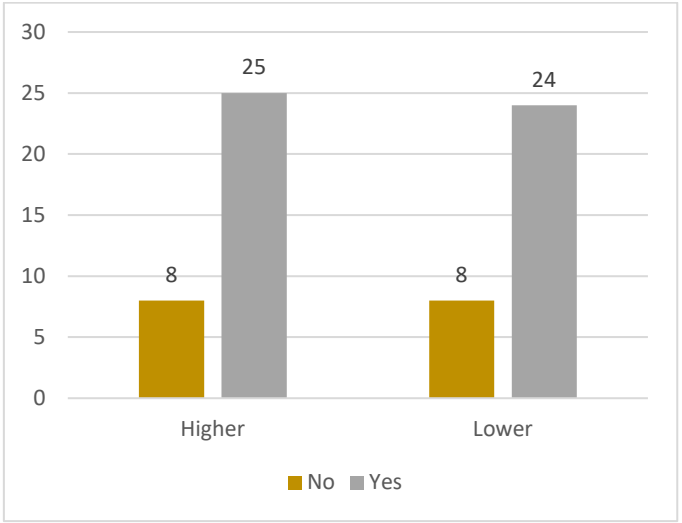


Figure 11. Extent to which respondents wanted to be performing this role in the next 5 years (%)

Qualitative feedback provided greater clarity around this thinking, with 37% of cases citing retirement or a planned move to another position or career. This supports the demographic profile of respondents, with 72% identifying as between 40 and 60 years of age and a further

12% as 61 years and above. The remaining 63% of respondents who planned to leave their roles cited attrition factors such as excessive workload, lack of resources or support, and overall job dissatisfaction, supporting findings discussed above. A typical response follows.

> *I do not believe I can inject enough time and energy into my role as a careers practitioner and am currently struggling to reconcile all of my responsibilities. It is taking too much time outside of my work hours and I do not believe I can sustain the long hours.*

4.3 Careers information and access

The year at which students first receive careers information is important due to the emphasis on early selection of subjects and academic pathways. Survey data suggest that the majority of students (67% from higher SES schools and 44% from lower SES schools) first received detailed careers information in Year 10. Seen in Figure 12, a small proportion (3%) of lower SES students had their first contact with careers information in Year 11.

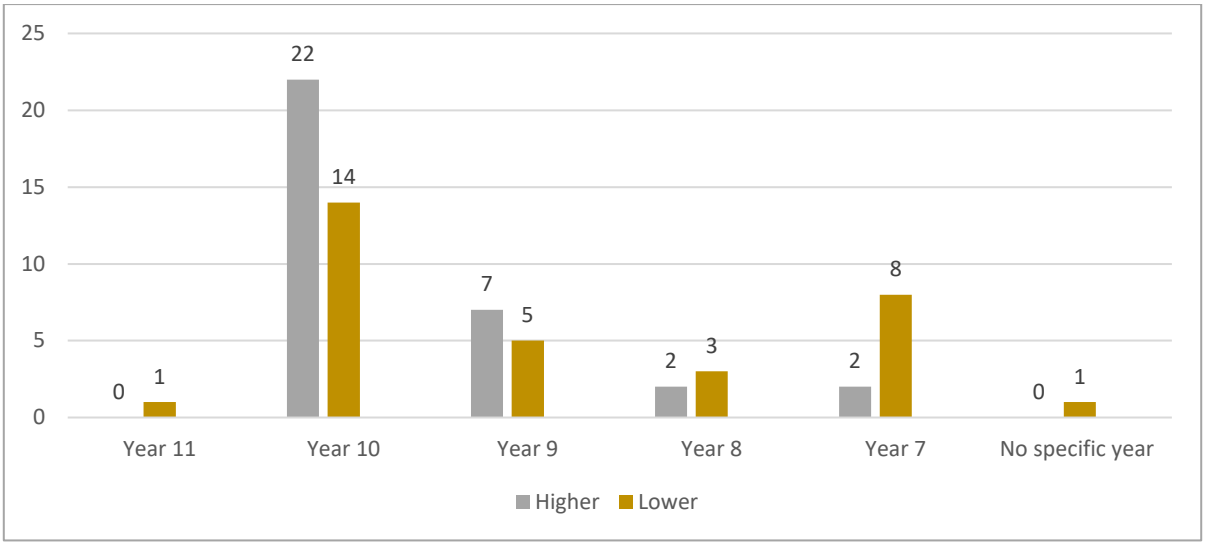


Figure 12. The year in which students first received career and study pathways information (%)

Although 61% of higher SES schools reported that they had mandatory career counselling, this was the case in only 47% of lower SES schools. Overall, 74% of schools provided targeted career and study support to students following an initial career counselling session. The majority of respondents also indicated that students studying non-ATAR pathways were offered advice regarding both university and alternative pathways, although this was an optional process for more than half of those surveyed.

SES had no impact on the reported ability of schools to offer adequate support in relation to different postsecondary pathways or assisting students with specific needs. Asked what factors they considered when providing study and career pathways information, participants from both higher and lower SES schools outlined that the most significant factors to consider were academic grades, interest and motivation, and work preferences; gender was considered least. The area where significant difference between the schools existed was in the consideration of projected Grade Point Average (GPA) or ATAR, with less than a third of lower SES schools suggesting it was a major factor in the provision of careers advice compared to just under half of higher SES schools.

Of interest, career practitioners reported that a student's personality and personal values were the factors that most influenced career discussions and future pathways. The ways practitioners assessed student personality and values were not addressed in the study. Given that these factors are regularly used to determine what study and careers information might be provided to students, it is an area in need of further research.

The use of personality and personal values was also considered by practitioners when providing information for students who were having difficulties with their studies. Practitioners indicated that careers advice for these students was provided on the basis of individual interests and motivations, personal values and work preferences, followed by personality. Least consideration was given to grades and gender, and there were no clear differences between higher and lower SES schools in this regard. The main difference was the consideration of projected GPA or ATAR, with 48.4% of respondents from higher SES schools reporting this as a key consideration compared with only 28% in the lower SES schools. Further research would help to determine the reasons for such a difference.

In response to the open-ended question that asked what other considerations were made when providing careers information to students in lower SES schools, one respondent wrote simply that the information was never limited. A contrasting response is shown below.

> *I have to take into consideration their capacity to access different services and regions. Many of our families are of low SES, are from backgrounds other than English, do not have a history of academic success, don't have access to a private vehicle, cannot afford to buy clothes etc etc.*

Another respondent wrote from a regional location and mirrored these concerns:

> *There are lots of concerns being in a regional location. Kids do not have opportunities to see professionals other than teachers and nurses. Hard to raise their aspirations. . . . Low SES affects goals. Having to leave home to pursue further education and training is severely limiting, especially the costs of living away from home and lack of support when leaving home. Add the cost of HECS [Higher Education Contribution Scheme] to low SES students, and why would you even bother!*

In sum, the study revealed clear, significant, and far-reaching social and academic barriers for lower SES and regional students seeking to access careers information. These barriers had significant implications for students' future careers and work trajectories.

Respondents from higher SES schools suggested that these students struggled with quite different pressures, predominantly related to parents:

> *Parental pressure: Despite basing parent conversations around what is best for the student, parents often disregard advice and pressure students into following the parents' choice of pathway and career direction, many parents selfishly take away their child's wishes and force parental values on students.*

4.4 Resources available to the career advisors

Overall, practitioners reported general dissatisfaction regarding the availability of resources to perform their role. A Likert scale was utilised to ascertain the level of agreement or disagreement with a statement about the sufficiency of available resources. The results are summarised in Table 4.

Seventy-two per cent of respondents from lower SES schools reported that they had insufficient time resources, 65.7% reported insufficient human resources, and 47% reported insufficient financial resources. None of the practitioners in lower SES schools strongly agreed that they had sufficient time or human resources, suggesting a degree of dissatisfaction with what was provided. Respondents from higher SES schools were also likely to report insufficient time and human resources, but only 27% lacked adequate financial resources, indicating a negative difference in the funding of career advisory services within lower SES schools.

Table 4. Resources available to the career advisors

Lower SES	Strongly disagree (%)	Disagree (%)	Agree (%)	Strongly agree (%)
Sufficient time resources	40.	31.3	28.1	0.0
Sufficient human resources	31.3	34.4	34.4	0.0
Sufficient financial resources	21.9	25.0	28.1	25.0
Sufficient online materials/websites	6.3	3.1	53.1	37.5
Higher SES	**Strongly disagree (%)**	**Disagree (%)**	**Agree (%)**	**Strongly agree (%)**
Sufficient time resources	30.3	42.4	24.2	3.0
Sufficient human resources	24.2	48.5	27.3	0.0
Sufficient financial resources	9.1	18.2	54.5	18.2
Sufficient online materials/websites	3.0	3.0	63.6	30.3

Dissatisfaction across all schools represented by this data suggests the need for a national review of the way career advisory resources are allocated. This will become even more vital as the future of the work landscape becomes more complex, with greater emphasis on core employability skills as a prerequisite to participation.

4.5 Resources and tools recommended by practitioners

Asked which resources and tools they were most likely to recommend to students, the majority of practitioners in higher SES schools pointed to TAFE course websites, the Australian Government site Job Outlook,[5] bullseye posters,[6] and Australia's national careers information service website My Future.[7] There was general consensus in the use of these predominantly online resources; however, a number of resource challenges were also identified. Challenges reported by practitioners in lower SES schools included limited access to resources, lack of time, and general access difficulties due to being in a regional location. Practitioners in higher SES schools were most concerned with the difficulty of accessing valid pathways information, lack of time, and financial challenges.

[5] https://joboutlook.gov.au/

[6] https://myfuture.edu.au/assist-others/career-bullseye-posters

[7] https://myfuture.edu.au/

4.6 Quality of the study pathway support and its efficacy

Only 31% of career practitioners from lower SES schools and 55% of practitioners from higher SES schools reported that the study pathway support they provided was fit for purpose.

In the higher SES schools, 54.5% of respondents ranked the quality of the study pathway support they provided as “fit for purpose” (meeting the needs of students). Of concern, this was the opinion of only 31% of practitioners from lower SES schools. In terms of quality and impact, practitioners in higher SES schools also reported more satisfaction (30%) than their counterparts in lower SES schools (22%). Low overall satisfaction rates are concerning and again support the need for a national focus on the provision of quality, well-resourced careers information, advice, and support services.

4.7 Higher education career support effectiveness

Practitioners in both lower SES (75%) and higher SES (67%) schools considered themselves to be effective in their delivery of careers information on a variety of pathways. They also believed that they were delivering an unbiased, contemporary career education curriculum that met the needs of every student. Seen in the following chapter, this view was not borne out by students. Practitioners in lower SES schools commented that many students lacked motivation and were not very competitive. Although these practitioners were confident in their ability to provide accurate and tailored career education to students, they suggested that there was insufficient time to follow up with students appropriately; moreover, they reported that career education was undervalued and neglected by the institutions themselves. The comments were markedly different from those received from practitioners in higher SES schools, where the emphasis was on the challenges of developing career education and appropriate tools.

The survey findings corroborate the LSAY data analysis in that higher SES schools appear better equipped to engage with parents and carers (63.6% compared with 44% in lower SES schools), while lower SES schools are better equipped to address the needs of rural, regional, and remote students (where applicable, 61.5% of lower SES schools compared with 36.8% of higher SES schools). Practitioners’ confidence in equipping school leavers to make informed career decisions arises as an area of concern, with only 53% of respondents from lower SES schools and 63% in higher SES schools reporting high levels of effectiveness in this regard.

In relation to engagement with industry and local employers, 68.7% of the lower SES school practitioners reported high levels of effectiveness compared with only 53% from higher SES schools. The explanation might lie in participants’ reports of how well they were supported to engage with industry and employers, with only 52% of lower SES school practitioners and 36% of practitioners in higher SES schools reporting adequate support. Common concerns about a lack of ability to make these connections indicates a need for an improved approach to the development of school–industry networks.

4.8 Challenges and concluding statements

Shown in Figure 13, career practitioners in both lower and higher SES schools identified challenges to the provision of comprehensive career and study pathway support.

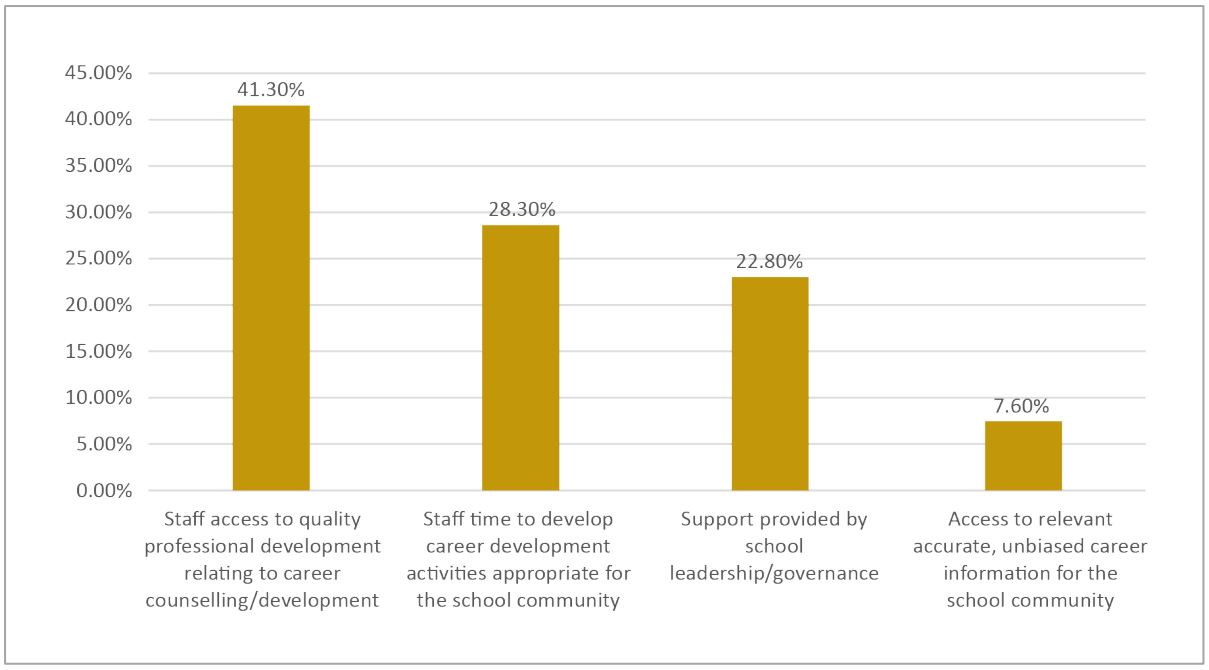


Figure 13. Challenges to the provision of career guidance

The challenges voiced by survey participants were congruent with those identified in a face-to-face forum held with 44 career practitioners as part of the study. During the team's allotted workshop time, attendees were asked to list their "biggest challenges as career practitioners". Shown in Figure 14, attendees from both lower and higher SES schools raised similar concerns, summarised as inadequate support from school leadership, access to community/parent information and resources, access to professional development, and insufficient time. Of interest, and again in line with the LSAY analysis presented in Chapter 3, the responses clearly identified the impact of parental and community expectations on the ability of career practitioners to provide careers advice.

THEMES

Information:	**Leadership/Schools:**	**Time:**	**Student/Parents/Community:**
- Keeping up with changes - Access to experts - Multiple pathways need to be communicated - Breadth of adviser knowledge (variable) - Central information and resources required	- Support/(under)valued role - Career learning is not mandated - Whole school approach needed - Need for effective strategy, processes, administration, and systems	- Administration and compliance - Limited time allowed with students (variable) - Busy curriculum/lack of integration - Breadth and quality of information (variable)	- Parents: views and perceived value - Students and parents: pathways anxiety - Managing expectations of students/parents - Community support/ placement availability

Figure 14. Challenges identified by career practitioners attending a preliminary review of survey results

Quantitative and qualitative data provide strong evidence that adequate career and study pathway support for Australian students is contingent on the provision of more career practitioner time, more financial support, more professional learning, and a cultural shift in the value proposition of careers support in schools. Practical suggestions for improvement include prioritising career and study pathways advice, adopting collaborative approaches, and providing basic, school-based training for all teachers. The findings support the literature in terms of the structural, economic, social, and academic barriers that inhibit the access of lower SES and regional students to career and study pathways information.

5. Understanding the confidence and career thinking of low socioeconomic status university students

5.1 Overview

Inquiry 2 employed the validated employABILITY self-assessment tool (Bennett, 2019a; Bennett & Ananthram, 2021) alongside institutional and national datasets to analyse the perceived employability of university students from low SES backgrounds. The instrument measured students' confidence in their ability to manage and complete their studies and to secure graduate-level work (see Appendix 3). The findings were compared with the responses of other student cohorts, with an additional focus on multiple disadvantages. This aspect of the study prioritised two ancillary research questions:

> 1b. What capabilities do students from low SES backgrounds bring to higher education in regard to developing employability skills, and how do these differ from other students?
>
> 1c. How do students from low SES backgrounds engage with university support services to develop their employability, and does their engagement differ from that of other students?

5.2 Theoretical background

The self-assessment tool adopts a social cognitive approach to learner development and employability and uses social cognitive career theory (SCCT) to explore perceived employability within a student population. SCCT emphasises that learners' employability development is underpinned by their ability to operate as capable, self-regulated learners (Lent et al., 1994, 2000). For the purposes of the study, employability was defined as "the ability to find, create and sustain meaningful work across the career lifespan and in multiple contexts" (Bennett, 2019a, p. i).

5.3 Procedures

Students at multiple Australian universities were invited to assess their perceived employability and generate a personalised profile report based on the results. Some students created an employability profile as part of a unit of study. All students received a consent and information form, and they chose whether to include their response in the research dataset. A summary of the instrument and links to resources are included in Appendix 3.

Complete responses were received from 9,264 students of whom 6,300 entered university via school pathways (the "school-leaver" subsample). Demographic details within the self-assessment tool included current work status, age in years, sex, location, highest completed level of education, and institution. A majority of respondents (62.6% of school leavers) were female, and the mean age of respondents was 19.5 years. An extended demographic profile of students is shown in Table A4.1, Appendix 4.

As the self-assessment data contained limited demographic information on gender and age, a data linkage was undertaken at participating institutions to link self-report data with student unit records. This included the collection of data on the following variables.

Student demographics

- gender (variable name: Female)
- age (Age)
- SES status (Low SES)
- rural or remote location (Rural or Remote)
- non-English-speaking background (NESB)
- disability status (Disability)
- first in family to participate in higher education (First in Family)
- school sector — government or independent (Government School)
- Australian Tertiary Admissions Rank (ATAR).

Student enrolment and academic performance

- mode of study (On-Campus)
- study load (Part-Time Study)
- weighted average marks (WAM)
- field of education (Natural and Physical Sciences; Information Technology; Engineering and Related Technologies; Architecture and Building; Agriculture, Environmental and Related Studies; Health; Education; Management and Commerce; Society and Culture; Creative Arts; and Food and Hospitality).

In addition to the above, the project team requested an indicator for Indigenous status. Owing to the small Indigenous student populations at some institutions, the number of Indigenous students in many subcategories was very small (< 5) and therefore subject to data suppression and potential identification of respondents. As a result, Indigenous status was omitted from the analysis.

The employABILITY self-report data were linked with university student administrative records to identify respondents' school and academic performance, following a previous approach successfully employed by Li and Dockery (2015). The linked dataset permitted a comparative assessment, relative to SES, of students' self-reported employability confidence relative to academic performance. The researchers also grouped the students by year of study, creating a retrospectively longitudinal dataset. The results were triangulated with the findings of Inquiry 1 to align, where possible, student confidence, academic record, and students' access to careers and pathways advice when at secondary school.

Three universities contributed to the data linkage: Curtin University (Western Australia), Edith Cowan University (Western Australia), and Western Sydney University (New South Wales). Most data were drawn from Curtin, which accounted for 95.4% of respondents; around 0.4% of responses were from Edith Cowan University, and 4.2% were from Western Sydney University.

5.4 Analysis

Quantitative analysis of the linked data involved students' self-assessment data from the employABILITY self-assessment tool. The team considered eight employability traits from the tool, selected due to their prevalence in the literature (Chapter 1): Self-Awareness,

Program Awareness, Commitment, Reconsideration with Commitment, Self-Esteem, Academic Self-Efficacy, Career Exploration, and Occupational Mobility.

The final sample (N = 6,300 students) was further disaggregated into a number of subsamples on the basis of SES and school sector: Non-Low SES (n = 5,296), Low SES (n = 1,004), Independent School (n = 3,594), and Government School (n = 2,706). It should be noted that the Non-Low SES sample consisted of students from both medium and high SES backgrounds. Further details and discussion of the sample are included in Appendix 5. Responses were explained using the set of explanatory variables comprising student demographic and enrolment characteristics, as indicated above. Positive and significant effects for individual variables were associated with higher rates of desirable effects in relation to the traits.

Qualitative data were the subject of first cycle coding conducted through an open coding process that included narrative coding for longer responses (Saldaña, 2013) and used NVivo to compile individual respondents' codes. This approach limited bias and ensured that we considered the diverse positionalities and epistemological viewpoints of team members. Once initial and narrative codes had been agreed, second cycle coding was conducted as a team to refine and compare initial coding (Saldaña, 2013), again using NVivo to compile the resulting codes.

5.5 Findings from the analysis

Multivariate linear regression was conducted to determine whether typical measures of SES, including the Low SES and school sector (Government School) variables, were associated with differences in each of the eight nominated employability traits, taking into account other student characteristics. We refer to this as the school-leaver sample to distinguish it from the entire self-report sample and refer to subsamples when this was estimated for subpopulations.

The general form for our first model can be written as

$$ET = \alpha + \beta_1 \, Low\ SES + \beta_2 \, Government\ School + \beta_3 \, X + \varepsilon$$

where ET (employability trait) denotes the respective factor of interest, and Low SES is a dummy variable indicating low SES background. Government School is a dummy variable indicating prior schooling at a government school, and X is a vector of explanatory variables consisting of demographics, university study characteristics, and field of study. Low SES in this context is defined using the official area (postcode) measure in Australian higher education—based on the Australian Bureau of Statistics' (ABS) Socio-Economic Indexes for Areas (SEIFA) (Index of Education and Occupation)—which defines low SES as the 25% of the Australian population living in postcode areas with the *lowest* SEIFA ranking using education and occupation data from the ABS census (for a discussion, see Koshy, 2020).

We also examined the interrelationship between the Low SES and school sector variables. This involved replacing the Low SES and Government School variables with four variables for identifying *compounding effects* in relation to SES and school sector:

- Low SES in Government School
- Low SES in Independent School
- Non-Low SES in Government School
- Non-Low SES in Independent School (omitted category in regressions).

Alternate specifications of these models were estimated using the total sample as well as a subsample of first-year students. In addition, the model across the entire sample was estimated with a variable capturing prior academic achievement—*ATAR*—as well as a specification that removed SES and school effects variables to examine the impact of Rural or Remote status.

The results of this modelling are reported in Tables A5.2 to A5.7, Appendix 5. Our threshold for statistical significance was set at the 10% level of significance: $p < 0.10$. In other words, the threshold for statistical significance allowed us to be 90% confident that the results of our modelling occurred due to meaningful quantitative differences rather than by chance.

In the first instance, results for the two models above are reported in Table A5.2 (school-leaver model with the Government School variable) and Table A5.3 (school-leaver model with the compounding effects variables). The key findings across the ETs in relation to Low SES and Government School (school sector) variables were as follows:

- Self-Awareness: The Low SES variable did not have a statistically observable effect on responses to the Self-Awareness factor (as reported in Table A5.2). Substituting the Low SES and Government School variables with the three status variables—Low SES in Government School, Low SES in Independent School, and Non-Low SES in Government School, as reported in Table A5.3—saw no statistically significant low SES effect.
- Program Awareness: No Low SES effect was observed in relation to Program Awareness. In the compounding effects model (Table A5.3), a negative effect was observed in relation to students classified as Non-Low SES in Government School (-0.047, $p < 0.05$).
- Commitment: No statistically significant effects were observed for the Low SES or Government School variables or the compounding effects model.
- Reconsideration with Commitment: No Low SES effect was observed in relation to Reconsideration with Commitment. However, a negative but marginally significant effect was attributable to an effect associated with Low SES in Government School (-0.082, $p < 0.10$) in the compounding effects model (see Table A5.3).
- Self-Esteem: Although no statistically significant effect of Low SES status was observed, attendance at a Government School (-0.049, $p < 0.01$) was highly significant in explaining negative outcomes in this category (see Table A5.2). In the compounding effects model, with results reported in Table A5.3, both government school variables also had a negative influence on Self-Esteem: Low SES in Government School (-0.069, $p < 0.01$) and Non-Low SES in Government School (-0.048, $p < 0.01$).
- Academic Self-Efficacy: Low SES (-0.107, $p < 0.01$) and Government School attendance (-0.043, $p < 0.05$) were both associated with a negative effect on Academic Self-Efficacy (see Table A5.2). In the compounding effects model (Table A5.3), both the low SES variables—Low SES in Government School (-0.166, $p < 0.01$) and Low SES in Independent School (-0.086, $p < 0.05$)—had a negative impact on Academic Self-Efficacy.
- Career Exploration: No Low SES effect was observed, although a negative effect associated with Government School attendance (-0.076, $p < 0.05$) was identified. In the compounding effects model, a negative effect was identified for Non-Low SES in Government School students (-0.076, $p < 0.05$) as reported in Table A5.3.

- Occupational Mobility: No Low SES effect on Occupational Mobility was observed in the sample, but a negative effect was identified in relation to attending a Government School (−0.089, $p < 0.05$), as reported in Table A5.2. In the compounding effects model, a negative effect was identified for Non-Low SES in Government School (−0.091, $p < .05$).

5.5.1 Extensions of the analysis

First-year students

To examine the extent to which scores on ETs differed for first-year students, the compounding effects model was re-estimated using a subsample of first-year students only (n = 4,644). These results are reported in Table A.4, Appendix 5.

The key finding from these results was that the effects of SES and school sector were generally more constrained, with significant effects observed in four factors rather than six in the main sample: Self-Esteem (statistically significant effects observed in relation to Low SES in Government School and Non-Low SES in Government School), Academic Self-Efficacy (Low SES in Government School), Career Exploration (Non-Low SES in Government School), and Occupational Mobility (Non-Low SES in Government School).

Notably, the effect attributable to the Non-Low SES in Government School variable in relation to Career Exploration and Occupational Mobility was much stronger for first-year students. In relation to Career Exploration, the estimated parameter on the Non-Low SES in Government School variable was −0.13 ($p < 0.01$) versus −0.091 ($p < 0.01$) in the entire sample; for Occupational Mobility, the estimated parameter on this variable was −0.124 ($p < 0.01$) versus −0.076 ($p < 0.01$) in the entire sample.

These results suggest a weakening of the strongest observed effects associated with SES as students moved from first- to second-year study in the sample.

Impact of prior academic achievement

The literature strongly suggests that perceived employability is influenced by prior academic achievement and performance (Li & Dockery, 2015). This is because both course choice and engagement are shaped by students' academic performance at school and because that performance is predictive of performance in higher education.

To test this assertion in relation to the sample, we re-estimated the compounding effects model and included a variable for prior academic achievement: the ATAR. An ATAR was recorded for 5,014 respondents of the total 6,300 respondents in the school-leaver sample, so we restricted the sample to this subset. Results of this analysis are reported in Table A.5, Appendix 5.

The ATAR variable was statistically significant across seven of the eight factors, with Self-Awareness being the exception. The inclusion of ATAR resulted in a weakening of previously significant effects associated with low SES disadvantage. The effect proxied by the Low SES in Government School variable was virtually eliminated, with only a weak significant negative effect being observed for this variable in the modelling of responses on Academic Self-Efficacy (−0.094, $p < 0.1$). No effect was observed in relation to the Low SES in Independent School variable across any of the factors. Interestingly, the observed effects of the Non-Low SES in Independent School variable were largely retained in explaining Program Awareness (−0.059, $p < 0.01$), Self-Esteem (−0.045, $p < 0.01$), and Occupational

Mobility (−0.101, $p < 0.05$). These results generally indicate that differences between low SES students and others at university in relation to the factor variables are at least partly explained by ATAR performance, with a non-SES student effect persisting.

Finally, following Bennett et al. (in press), an analysis was undertaken of the effect of Rural or Remote status on factor responses in the absence of controls for SES and school sector. Findings from this analysis are reported in Table A.6, Appendix 5. The removal of controls for socioeconomic disadvantage did not see Rural or Remote status emerge as a statistically significant factor in explaining factor responses.

Extensions of the analysis: employability thinking, SES, and academic performance

The literature on student reflections and preparedness for employability suggests it can influence their academic performance at university. This is because student engagement is shaped by their perceptions of employability and their degree and, in turn, because students who are better equipped to think about the totality of their experience at university are better placed to improve their academic performance.

This research question was examined using a multivariate linear regression, with WAM used as the academic performance outcome. This model can be written as

$$WAM = \alpha + \beta_1 ET + \beta_2 Low\ SES + \beta_3\ Government\ School + \beta_4\ Z + \varepsilon$$

where WAM denotes weighted average marks, ET (employability traits) are student responses to the ET factors, Low SES and Government School are the dummy variables denoting SES and school sector, respectively, and Z is a vector of explanatory variables consisting of demographics, university study characteristics, field of education, and ATAR.

This was estimated for the total sample (5,014 respondents). In addition, the model was estimated using four smaller subsamples drawn from the total sample:

- Low SES & Government School (294 respondents)
- Low SES & Independent School (424 respondents)
- Non-Low SES & Government School (1,710 respondents)
- Non-Low SES & Independent School (2,586 respondents).

Across all subsamples and specifications, all student record data were used, including 200 cases with WAM values of zero. Exclusion of this group in a subsequent analysis did not materially alter the results, so the original analyses including all data records is reported here. Full results for the estimation of the model on these samples are reported in Table A5.7, Appendix 5.

The modelling indicated a strong and statistically significant effect of ATAR on WAM, with the parameter estimate of 0.677 ($p < 0.01$) indicating that for every 1-point increase in ATAR, WAM rose by 0.677 at university after controlling for a variety of other factors. This effect is much stronger for low SES students—as reported in Columns (ii) and (iii) in Table A5.7—with two subsamples, Low SES & Government School (ATAR: 0.771, $p < 0.001$) and Low SES & Independent School (ATAR: 0.806, $p < 0.001$), reporting higher effects associated with ATAR. The two Non-Low SES subsamples saw modest and statistically significant levels of association between ATAR and WAM: Non-Low SES & Government School (ATAR: 0.663, $p < 0.001$) and Non-Low SES & Independent School (ATAR: 0.630, $p < 0.001$).

Enrolment status was statistically significantly associated with WAM, with On-Campus status having a strong positive effect (On-Campus: 14.849, $p < 0.01$ in the total sample). These effects were more pronounced in the Low SES & Government School (On-Campus: 16.138, $p < 0.01$) and Low SES & Independent School (On-Campus: 24.281, $p < 0.05$) subsamples, indicating higher levels of disadvantage among online students from low SES backgrounds. Part-Time Study was not a significant explanator of WAM in the total sample but had a positive effect in the Low SES & Government School subsample (Part-Time Study: 12.263, $p < 0.01$) and a negative effect in the Non-Low SES & Government School subsample (Part-Time Study: −8.410, $p < 0.01$) with no observable effects in the non-low SES subsamples.

Demographic and equity effects were more muted. There was a strong gender effect in the total sample (Female: 2.327, $p < 0.01$), which was replicated across three of the subsamples (the Low SES & Government School subsample was the exception). There was no effect associated with Age or Low SES, NESB, and Rural or Remote across all samples, with Disability only having a large, but statistically weak, effect in the Low SES & Independent School subsample (Disability: −11.393, $p < 0.1$). However, First in Family status (−1.188, $p < 0.01$) had a significant, negative effect on WAM in the total sample, a considerably stronger effect in the Low SES & Government School subsample (−4.674, $p < 0.05$), and a weaker, more muted effect in the Non-Low SES & Independent School subsample (−1.350, $p < 0.1$). Field of education effects (compared to the base field of Management and Commerce) were not widely observed, with only weak statistically significant effects ($p < 0.1$) seen in relation to the Information Technology, Architecture and Building, and Society and Culture fields of education in the total sample and highly significant effects seen in the Food and Hospitality field in the subsamples.

In looking at employABILITY factors in the total sample, only responses to the Reconsideration with Commitment (0.628, $p < 0.01$) and Academic Self-Efficacy (1.393, $p < 0.01$) factors had positive, statistically significant effects, while responses on Occupational Mobility had a negative effect (−0.562, $p < 0.01$). An examination of these effects in the subsamples indicated that they were primarily localised among students from Non-Low SES & Independent School backgrounds.

5.6 Summary

This chapter reports an analysis examining the impacts of individual student characteristics on responses to perceived employABILITY factors and, in turn, the influence of student characteristics and factor responses on student academic outcomes, as measured by the WAM.

Effects associated with SES were observed throughout. In the first model (total sample, the single Low SES area measure and exclusion of ATAR), the Low SES variable was only statistically significant in explaining Academic Self-Efficacy, with a negative effect observed. By contrast, significant effects associated with Government School attendance were observed for all factors except Self-Awareness. A re-estimation of the model including compounding effects variables (e.g., Low SES Government School) isolated the interaction between these two measures of disadvantage. Students from Low SES Government School backgrounds showed statistically significant negative effects on Academic Self-Efficacy after controlling for ATAR in comparison to the excluded category of Non-Low SES Independent School. However, students from Non-Low SES Government School had significantly lower factor scores across three factors: Program Awareness, Self-Esteem, and Occupational

Mobility. These results suggest the potential for pre-entry programs to raise academic self-efficacy among students from low SES backgrounds and for targeted discussions on program relevance and career pathways early in every degree program.

An analysis of the impact of the set of control variables and employABILITY factors on WAM was undertaken. Three interesting findings were observed. First, ATAR was highly significant in explaining WAM, with a 1-point increase in ATAR leading to a 0.677 increase in WAM after controlling for other factors. Second, the relevance of the Academic Self-Efficacy variable was confirmed, with it being positively and highly significant in explaining WAM. At the same time, significant effects associated with student reflections on Reconsideration With Commitment and Occupational Mobility indicate that WAM performance and these two employABILITY factors were closely linked. Third, splitting the sample using the compounding disadvantage measures showed ATAR was a much stronger predictor of WAM performance for low SES students (both from government and independent schools) than was the case for non-low SES students.

Overall, the limited indication of a statistically significant difference between students from low SES backgrounds and others, across various measures of SES, particularly once ATAR was included as an explanatory variable, suggests that low SES background may play a mediating role in restricting entry into higher education (see Dockery et al., 2016), but once there, low SES students are not dramatically different from those of the general student population in both conceptualising and finding institutional support for their career aspirations.

6. The student voice: student focus groups

6.1 Overview

To understand how disadvantage is experienced during the transition into study and during the undergraduate experience, Inquiry 3 involved focus group interviews with 54 secondary school and undergraduate students. The focus groups were designed to enable students from low SES backgrounds to comment on the findings of Inquiries 1 and 2 and to speak of their experiences of study and career education.

6.2 Procedures

Focus group instruments for secondary school and university students were informed by the results of the LSAY data analysis, LSAY questions, input from the team's career counsellors, and the literature review. Draft instruments were trialled among team members and informal networks before being refined. The focus group instruments are reproduced in Appendix 6.

University students were invited via student support programs, student and academic networks, and social media. Secondary school students were recruited via relevant authorities, following established protocols in each case. The focus group sample (N = 54) of secondary (n = 30) and tertiary (n = 24) students was representative of gender, SES, geographic location, study pathways, and school sectors (see Appendix 7). Over the 13 focus groups, 76% of the sample was female, and 61% was from a low socioeconomic background. Recognising a lack of Indigenous voices in the qualitative literature, we targeted the recruitment of Indigenous students, and the result was 22% Indigenous representation.

Each focus group was conducted by at least two team members, often with other team members observing and taking notes. Every participant received an information sheet and signed a consent form. In the case of secondary school students, consent forms and information sheets were relayed to parents and guardians by the relevant authority, and these were returned prior to the interview.

Focus groups were recorded and transcribed, and analysis involved the use of NVivo. In the first instance, transcripts were read by team members to create a list of themes from which main headings were agreed: Information, Interpretation, Influence, Impacts, and Improvements. Subheadings were then developed. This allowed coding to be undertaken by multiple team members in a consistent manner. In addition, narrative analysis (Clandinin & Huber, 2010; Saldaña, 2013) was conducted to classify participants' discussions and better understand the "stories lived and told to educate the self and others" (Clandinin & Connelly, 2000, p. xxvi).

6.3 Findings

6.3.1 Composite narratives

The following composite narratives were created from participants' own words by classifying narratives on "Door Openers" and "Dream Killers" into one of the six classical elements of narrative: abstract, orientation, complicating action, evaluation, result, and coda (Patterson, 2008). The aim was to understand participants' stories in intimate detail against the larger social or institutional narratives (Clandinin & Caine, 2012) present in this study.

Key influencers identified by participants in their career and study pathways were described as enablers or “Door Openers”, and constrainers were labelled “Dream Killers”. Door Openers were often receptive to participants’ goals and helped them navigate challenges, regardless of their present study pathway (General, VET, or ATAR). Dream Killers, however, often saw study pathways as rigid and discouraged students, often quite harshly, from pursuing careers outside these rigid pathways. Dream Killers often closed potential options for students, and this profoundly impacted participants’ self-belief and goals. The profiles of Dream Killers and Door Openers demonstrate the profound role of career development practitioners, teachers, and school leaders in young people’s career pathways.

Door Openers

> *I was pushed into VET, really. Everything just happened at once. They spent a week throwing information at us about subjects and jobs and uni. All in the same week, they wanted me to figure out what I wanted to do. The school was very focused on pushing VET kids into their corner. The deputy principal, Mr. C., when it came to picking subjects he was focused on picking subjects with ATAR students. He didn’t actually help me pick subjects that would get me to uni., which is what I wanted. I said I wanted to do ATAR and he checked my grades on the computer. He looked at me with that look that said, “Oh honey, don’t get your hopes up”. He just handed me a yellow slip with the certificate courses that were offered at the school. The ATAR subjects were crossed off. You’re either a TAFE kid or an ATAR kid. I wasn’t smart enough for ATAR. I was pushed to the side. Angry. Dream crusher. I want to do better. My mum wants me to be better.*
>
> *I went to you, the one teacher that had helped me when I first came to the school. You were, like, the main one all of us went to. You just had a way of telling me things. And you didn't just blurt it out and expect me to understand straight away. You gave me a chance to think about it. And if I didn’t get it, you’d explain it easier for me. You organised trips to go and see people who were working in jobs like engineering and stuff. That’s where I first got the idea of going to uni. You taught maths and knew my score. I showed you the yellow slip and you frowned. At the assembly, you found me, took my hand and marched to Mr. C.*
>
> *“She will be in my class next year because even if she’s not getting the grades that she needs. I know that she’s passionate about it and that’s all that’s important”, you declared confidently as I stared at you. Mr. C. looked unsure. “I vouch for her”, you added.*
>
> *It took my Mum having to really push and shove, and also getting my teachers, my other teachers, to back me up on it, to then push me across that line. In Year 11 and 12 I studied a VET course and ATAR maths and now I’m working towards uni. doing a bridging course. You treated me like a person and I had people to guide me and believe in me. That’s how I survived high school.*

Dream Killers

> *I remember sitting in a room of students. I was on one side of the room and my friends, studying ATAR, were on the other side. The visitor from uni. only addressed them. You could literally pick out who was in ATAR just by looking at the room. The education system didn’t work for me. They don’t trust you, I would*

say, ever. Not allowed to talk unless spoken to. Rules. Uniform. Even the bars at the front of the school looked like a prison.

The teachers were terrifying. They don't care about the kids, they just care about getting paid, is how I feel. They resented the time they had to spend with us. We were just "General Pathway" kids. They didn't like a lot of my friends. I knew I could do what the teachers taught me but I needed to do it a different way — like, hands-on. School didn't like me and school didn't like originality. I didn't even want to do General — there were just no VET spots left. The careers advisor didn't help me at all. I couldn't afford to jump ship to TAFE or somewhere, like some of the other kids.

At the time, it was like, "Stuff you, I'm just trying to get to the next level but you're making me feel like a dumb-ass". So many people said "No". They were quick to tell you what you couldn't do or what you're probably not cut out to do rather than say, "Okay, well, you could go this way or you could do this". I just got sick of hearing it. It gave me a bit of a weird mindset with everything at school because I didn't like it. When people were like, "No, you can't do this", I'd be like, "I'm just going to ruin your whole day". I dropped out.

I started working after leaving in Year 11. It was totally different. I never had to raise my hand to go to the toilet, I'd just go and come back. I'm good at my job and I know there's lots of stuff I wanna do. I know that there's open doors but I just don't know where they are. I think that's where the problem started for me. That's where the whole "manoeuvring into the wrong path, just not letting me do what I thought I could do" started. It's like, "No, no, no, you're capable of more". Even though lots of people say *they're there to help, in the end it's all up to you.*

6.3.2 Themes

Focus groups with secondary school students revealed sources of information, student expectations, and student needs; focus groups with university students revealed the impact of study and career counselling encountered by students in their secondary schools. The university students were invited to comment on the university supports that helped, or might have helped, their transition into studies. Taken together, the focus groups highlighted both challenges and opportunities for enhancement.

Participants explored a diversity of study pathways. The percentage of focus group students who were studying towards or had completed a direct university pathway (35%) was similar to the percentage of students attending university via this pathway nationally (Shergold et al., 2019). A significant number of students also engaged with VET or alternate university pathways (28%), and a smaller sample chose a general pathway (15%). In addition to students who had followed pathways already discussed in this report, student participants in Years 7 to 9 had yet to engage in career education (19%), and two were international students. Most participants in the focus groups attended public schools (44%) or a Catholic school (35%). Several Catholic schools operate in low SES areas, and these contributed to our sample of low SES students. Approximately half the sample came from metropolitan areas (53%) with additional representation from regional (30%) and rural (13%) areas. The COVID-19 pandemic meant that it was not possible to conduct focus groups in multiple Australian states and territories, as we had intended, and several focus groups had to be conducted online. Not surprisingly, the final sample was skewed towards Western Australian

participants (81%) with the remainder from Victoria, New South Wales, and South Australia. Once travel restrictions are eased, future research might seek to tease out differences between the states and territories.

Our analysis of focus group data is organised according to the five major themes that emerged from the focus group data. These are the five "I"s:

1. ***Information***: What information is given or accessed, and how is it found?
    a. ***Interpretation***: What does the information mean from the student perspective, and is it given at the optimal time?
    b. ***Influence***: How influential is the information, and is it valued?
    c. ***Impact***: What impact does this information have on future career planning?
    d. ***Improvements***: What needs to be changed or improved?

Information

Irrespective of a school's location, type, or SES, career and study guidance is often limited to subject selection based largely or wholly on academic grades.

The majority of students, irrespective of state, economic status, and sector, indicated that information was primarily focused on course choice and grades rather than career conversations and discussions about pathways. Student grades were the predictor of the conversation: If "good", then ATAR subject choices were the focus, and if "poor", then there was less of an ATAR focus, and these students were funnelled into vocational subjects. Once streamed as "non-ATAR", there were few follow-up conversations, and some students reflected that they had been directed to follow "alternative pathways" with no explanation as to what this meant.

Information on early access to non-ATAR alternatives such as VET was rarely available, with one participant highlighting that he was at TAFE only "because it's illegal for me not to be at school". This student was finding TAFE an overwhelmingly positive and engaging experience, in stark contrast to his reflections about school. No participant in any of the focus groups had been exposed to portfolio pathways into university.

> *They were obviously more focused on the academic students which is perfectly fine, but when you're a school that presents as a "school for everyone" [and] then you're doing it to a minority like that, it's a bit iffy.*
>
> *Nobody thinks I can do it. And then you're having teachers say to me, maybe we should consider dropping this course. And I don't think I ever actually received any careers advice from anyone.*
>
> *Our careers lady delivers that to us and we've pretty much been told that once our [ATAR] ranks come out and we don't get the score we want, we can work with her to change our preferences.*

In line with the literature on social and human capital, a significant number of participants whose parents held postsecondary qualifications (e.g., teaching, nursing) reported that their parents were key influencers (Furbish & Reid, 2013). Students also confirmed that they

sought information about career options from social media and discussions with their peers. Very few participants had proactively searched university websites, and the majority of these cases were rural students who had little or no access to open days and campus visits.

In terms of the quality of the advice received, the findings indicate that this depended on the presence of dedicated career guidance resources in the school. In the majority of cases, dedicated resources were limited to high SES schools. The following comment, relating to the staff member responsible for careers information, was typical of student experiences in a low SES school.

> *I didn't even know who she was. I'd only known her because I did this work placement beforehand. I didn't know where her office was, I didn't even know if she had an office.*

Of interest, students reported that the majority of career and study information was received via a school intranet or by email. Again, this information was generally focused on subject selection. Students recalled a reluctance to make an appointment with career staff and that they had not understood their role. No student mentioned that career guidance staff would come to them in class or personally invite them for a discussion.

Students from middle and high SES backgrounds and those attending private schools have greater access both to formal sources of careers information and to human, social, and cultural capital.

As noted, the pandemic thwarted plans to hold focus groups in multiple states and territories. We do not therefore seek to generalise the findings; rather, we note our observations. Eastern states school participants discussed the use of vocational and personality testing rather than career planning. South Australian students highlighted that this was an in-curricular approach starting in Year 9 and designed to help them identify potential careers; however, the testing was not built on or referred to when making future study decisions. The majority of eastern states students highlighted the importance and value of incursions and guest visits from industry. They also valued work experience and visits to universities and workplaces. Many of the rural eastern states participants had identified target universities, often based on incursions or excursions; approximately half the students were worried about meeting entry requirements, and of the few students who were aware of portfolio entry pathways, none knew how to access further information.

Interpretation

The consensus of participants was that information about course selection was of little value to non-ATAR pathway students. Such information reinforced students' belief that only ATAR pathway students were valued in the school system.

> *There's a lot of my kids in my school that would be very capable of doing well in Year 12 without an ATAR to get their HSC, but — they're kind of just like, "You're not getting an ATAR, well you should go — leave now and work".*

Participants also presented a united opinion that school students were either valued or not wanted, depending upon academic grades. This was a dichotomous division between ATAR and non-ATAR (general pathway) students. Students' interpretation of this was that

academic grades unnecessarily limited career and study pathways. Seen below, students also commented on shortages in school-based and TAFE VET programs.

> *I was a five ATAR class student at the beginning of Year 11, and when I told all my teachers "I'm leaving school, I'm doing Certificate IV", my teachers were like completely shocked — obviously because — I was a high achieving student — I was pushed into ATAR really and then I kind of — my Mum works in training pathways so, she told me, "You know, if you do Certificate IV you can get into uni. early!", which is exactly what I wanted to do.*

> *A lot of schools have shut down the certificates that they offer at school on location. So that pushed a lot of kids into applying for the VET places. It meant that lots of kids who usually would have got in with their NAPLAN [National Assessment Program — Literacy and Numeracy] and their good grades didn't get in this year — they haven't got the capacity.*

> *Yeah, like at my school at the moment they're really pushing people who don't want to be here or think that they'd be better off working to drop out now, because they're just like — if you don't want to be here and you're just going to muck around and whatever, leave. But they're not really encouraging them to, if they're not liking it, to stay and see if they like it.*

Influence

The smaller, rural, and remote schools (that were predominantly low SES) appeared to provide more individualised student attention with greater use of work experience opportunities. These appeared to be extremely influential on career options. Other participants reflected that teachers were not particularly supportive of work-based programs and did not allow for them in the timetable.

> *And the whole week of school that I missed, I had to catch up on when I got back. I got back to school and my teachers were just like, "Here's all the work you missed. Make sure you keep up with it". And I was like, "Whoa!" So, I was continually catching up.*

Guest speakers and university visits were influential in decision-making, but these activities were almost exclusively reported by students at high SES schools and/or on ATAR pathways. Specific teachers were significant and positive role models for some students, as seen below.

> *But I had one good teacher throughout my whole school life and he was like, you can actually do what you want to do and I'm going to help you with that. I would sit there and he would talk to me.*

Students from rural areas emphasised the additional complexities of needing to leave their community, family, and social networks due to the lack of local postsecondary education institutions. As seen in the following quote, students were aware that they might be moving away for far longer than the duration of their program.

> *Yeah, but some courses have no option to come back. Like I'm interested in doing cyber security and there's nothing here in rural Victoria. I have to move to Melbourne or I have to move to Canberra — it's the reality if I want a job in that field.*

When making career and study decisions, the vast majority of students considered intrinsic factors such as work–life balance, personal interest, and meaningful work. Very few students were influenced by financial incentives or status.

> *A major thing is whether it's something that I feel as if I can achieve — because what I want to do, it will be hard. But if I really want to do it I feel as if — like if I think that I will be able to get up every day and go and do that job, then it's something that I really want to do.*
>
> *I just want to be influential and help younger people, younger women as well — like influence them. I want to be the role model that the people I look up to, I want to be like them. I want to help people when they're my age and stuff like that.*

Impact

Students from disadvantaged groups experience higher rates of attrition and deferral and poorer graduate employment outcomes. Despite considerable attention, we find there to be inequitable provision of careers and study information from the early years of secondary school. The impacts of this are long-lasting.

As outlined earlier, the most positive impact on actual career decision-making was the influence of mentors and guest speakers from industry, university visits, and work placement or experience opportunities. In some cases, these opportunities were based on whether teaching and/or career guidance staff thought students were ready. A very positive account of a school-based TAFE program is relayed below.

> *They have an amazing work placement set up there and kids do have to meet certain criteria and have to have certain grades and certain attendance and certain, you know, if you get in trouble in class all the time, they won't let you go on a workplace because they know you're not going to cope with that. But they have great systems and they have good contacts. They put you in contact with people, and to me it was just amazing. Like, they've got a senior school transition program for kids who get into TAFE and so they do three days in class doing four general subjects, they do their certificate and they do work placement one day a week.*

The timing of information and the timing of streaming into ATAR or non-ATAR pathways significantly impacted the type and breadth of career options the participants believed they had open to them. Streaming into ATAR and non-ATAR pathways "labelled" students, and once labelled, they could not switch. This also impacted participants whose grades indicated they could take an ATAR pathway and were therefore not provided with any other choices. Accounts from students who had had access to dedicated career practitioners were typified by stories of working closely with them and having a greater range of choices.

> *When I was trying to get into ATAR, he's [the career practitioner] been giving me advice that you don't have to push yourself to go to ATAR. He's been saying you can do legal studies, it's still law, you can still get involved. And then I just like —*

I just tried pushing for more ATAR because I just wanted to be involved more on the cases in law and actually studying, even though the pressure is going to be really heavy. If not, then I'll just take his advice and go on another pathway.

For some students, particularly those from low SES schools with limited career guidance resources, negative experiences at school impacted both self-esteem and perceived career options.

I had a really horrible time. A big part of that had to do with the teachers. Teachers really didn't care about how I felt, what was going on in my life or what I wanted to do in my future. It really all came down to the grades, and when they started slipping that's when I got put into behavioural problems classes and that's when I started being told I didn't have many opportunities left.

[We were looking at career options.] There was a lawyer and I was, like, "Oh Miss, would I be able to have the lawyer? Because I'm a little interested in that sort of thing". She's like, "No, you're stuck with waitress". I'm like, "Wow, thanks".

Improvements

One of the most positive outcomes of the focus group sessions was how enthusiastically participants considered and discussed ways career conversations were held with students. This was irrespective of state, type of school, or SES classification. Students also identified the importance of realising that poor performance prior to Year 10 would impact future career pathways choices.

Overwhelmingly, the suggestion was for more specific and proactive career education. Participants also recognised the pressures on teachers who took on the role as an "add on" to their core teaching roles:

Yeah, they're pathway advisors. I don't think they're career advisors because they don't, first of all, they don't really help much. Individually as people, they're great. They teach as well and they're great for teaching but I don't think their job has much [career] emphasis in it.

University participants understood and reflected on the resourcing limitations in their schools:

When you're in a low socioeconomic area your school is affected, clearly. Through that, I think if teachers aren't well equipped then you generally see the results in students when they graduate. You see many dropouts. You see many going in a different career pathway and that's pretty evident in rural and remote areas.

As seen in the quote below, some participants felt that dedicated career practitioners could be more proactive in reaching out to students.

We have a dedicated careers advisor who it's fully her job to just talk to kids about what they want to do when they're older, organise work placement, organise all that sort of stuff. I think usually you have to explicitly seek her out to actually get advice.

There was a general feeling that career practitioners only provided support when specifically approached and that they focused on information for subject selection for Years 11 and 12. There could be myriad reasons for this, as outlined earlier in the report. A common theme

among practitioners and students was the importance of getting to know students as individuals in order to become a trusted influencer.

6.4 Discussion

Effective career and study guidance is dependent on students' unequal access to qualified career practitioners or teachers with career guidance duties. The result is that many Australian students base their career and study decisions on information from parents, peers, and social media.

There was resounding consensus among the participants that, irrespective of school location, type, or SES, career guidance constituted subject selection based on grades and subsequent streaming into university or non-university classes. The pathway information provided was significantly skewed to those on direct university pathways such as ATAR. None of the focus group participants had been made familiar with the various portfolio pathways into higher education. The feedback from focus group participants was not congruent with the findings of the practitioner survey, suggesting that there were significant differences between schools.

The direct provision of career and study pathways information to students appeared to rely on the existence of dedicated career practitioners and/or teachers with career guidance duties. Students also sought information and advice from parents, peers, and social media, resulting in a further mystification of pathways and opportunities. Truncated access to career and study pathways information also placed greater emphasis on the socioeconomic divide within the student population (Li & Carroll, 2019). Reflecting this, previous research has traditionally centred on mainstream, middle-class populations (Blustein, 2011). Those students who were lucky enough to be raised by educated and professional families (Chesters, 2018) or "driven" migrant families (Kewalramani & Phillipson, 2019) were able to access career and study information within their social and familial networks. Participants from disadvantaged backgrounds had limited information on which to base their career and study decision-making (see also Lichtenberg & Smith, 2009). The study confirms claims in the literature that teachers often provide information on study and career pathways (see Irving & Cook, 2011), and yet they have little or no training and can hold a narrow view of career education (Schloss, 2011). Sadly, the one message relayed by all participants was that secondary school students feel valued only if they are determined, according to grades, to be on a direct university entry pathway.

Australian secondary school students report that they feel valued only if they are on a direct university entry pathway determined on the basis of academic grades.

The honesty and openness of focus group participants was heartening, though some of their insights were not. It is clear, for example, that careers information and support need to be integrated into school curriculum as part of core learning (Keele et al., 2020) rather than a largely optional service based on a school's ability to resource it (Schloss, 2011). The stigma

associated with students choosing non-ATAR pathways, as well as how the schools value these pathways, needs to be addressed at a national level. Greater emphasis on work-integrated learning and tertiary sector incursions and excursions is also merited. The enthusiasm and passion with which participants discussed their experiences with such programs was encouraging, as were examples of when these opportunities had clarified career decision-making and action.

Although the research team's ability to conduct focus groups was certainly challenged by the COVID-19 pandemic, the use of more creative and innovative methodologies to ensure that the student voice was heard became one of the most rewarding aspects of the study. It became obvious that young people are "hungry" for quality, accurate information about the study and career opportunities available to them, with many of their choices driven by intrinsic rather extrinsic factors. The challenge is to satiate students' appetites by ensuring equitable access to embedded, just-in-time, and nationally relevant information irrespective of academic grade, SES, or geography.

7. Overall findings

In this chapter, we summarise and combine the results from all three inquiries. The LSAY data (Inquiry 1) provided correlations between engagement with career advisors and eventual employment outcomes, but the data did not provide information regarding the nature of that engagement and its actual influence as experienced by the individual. And where the national school survey (Inquiry 1) provided important information regarding services and support from the schools' perspectives, the focus groups complemented this with the students' perspectives. Finally, where the employABILITY self-assessment tool (Inquiry 2) provided quantitative data regarding students' self-reported confidence in relation to their studies and future work, the focus groups provided greater insight, in qualitative data form, about how students engaged with their studies, how they grew in confidence, and the role of secondary schools and universities in this development.

Combined, the study findings are reported as five elements through which students' career and study decision-making can be understood and enhanced. These five elements are represented in Figure 15, which illustrates the relationship between the Five "I"s as one of increasing impact.

Information and guidance provided to students
Students' **Interpretation** of the information and guidance they receive
Influence of information and guidance on stakeholders
Temporal **Impacts** of information and influence
Improvements to students' access to, and their use of information pertaining to, study and career pathways.

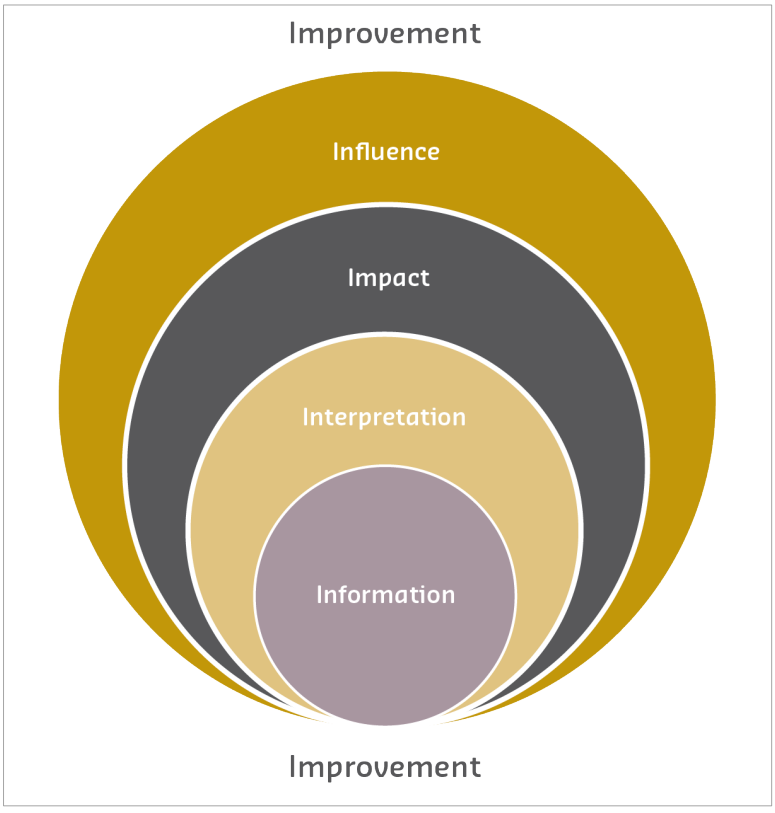


Figure 15. The five "I"s of students' career and study decision-making

7.1 Career and study pathways *information* for students

The disconnect in stakeholders' perceptions of career education provision and quality was striking. Responses from the survey of practitioners and influencers, for example, suggested that all students were counselled about ATAR and non-ATAR pathways in line with both academic strengths and personal interests. However, non-ATAR pathway focus group students presented as being isolated, unclear about the pathways available to them, and resentful of the lack of direction when discovering pathways on their own. Career influencers also suggested that students on VET pathways received as much information as their peers. Students disputed this, reporting a lack of information on alternative pathways into university, a lack of information for VET students, and an overwhelming emphasis on subject selection rather than broader interests and aspirations; this latter concern was particularly prevalent among ATAR students. Similarly, school visits and guest speakers were largely focused on direct university pathways, and TAFE visits or speakers were rare. LSAY data evidenced the decreasing frequency of advice provided to low SES students bound for VET pathways. Indeed, some student participants did not know what TAFE was!

Students also expressed disappointment that their schools limited discussions on university access to a direct ATAR pathway. It is telling that of all the students, only two students knew about portfolio entry pathways prior to entering university. The first student had been unable to work out how to navigate a portfolio entry. The second student had successfully navigated entry and had done so due to specialised parental knowledge.

Attempts by the research team to navigate online information about alternative entry pathways revealed just how difficult it is to complete this work independently. Participating university students had done just this; indeed, many participants reflected that they found the alternative pathway into university as a consequence of their own research. Some participants noted support from career influencers to enrol in bridging courses but often only after an unsatisfactory ATAR score had been realised. Often, students described themselves as the most influential people in their career and study decision-making, having been forced to find information on their own.

Students described themselves as the most influential people in their career and study decision-making, having been forced to find information on their own.

The disparity of career and study information is known to place low SES students at particular risk (Keele et al., 2020). A further concern is that less than half the career influencers at low SES schools were qualified career practitioners, and where qualified practitioners existed, they were less experienced than their high SES school peers. The perceived value of career practitioners was also influenced by the SES of the school, with practitioners in low SES schools feeling less valued than their peers.

Given that low SES students may have less access to resources and capital, career practitioners and influencers in low SES schools have arguably the most important and influential role in supporting students. Despite this, career practitioners and influencers in low SES schools are less valued, less experienced, more likely to be unqualified, and more likely to report inadequate resources. Moreover, the emphasis on ATAR and university entry

appears to limit the kind of information sought, provided, and valued by schools, students, parents, and the community. It is a significant concern that discussions about alternative university pathways and non-university study were largely limited to students at risk of not "making the grade". This deficit approach to study and career pathway decision-making fails to give students a true picture of the myriad opportunities open to them.

7.2 Students' *interpretation* of the information and education they receive

In line with the above comments, focus group participants identified that the information and education they received tended to focus on subject selection and the pathways they were permitted to attempt relative to academic grade. As a result, there was limited or no discussion on alternate pathways to university. Using words such as "disinterested", low SES students reported that information was not personalised for their unique circumstances, interests, and goals. Such limited approaches are detrimental and likely to fail to prepare young people for nonlinear transitions throughout their careers (Department of Education and Training, 2019).

In a particularly concerning example, the majority of Indigenous girls participating in the focus groups had received little or no information that they interpreted as being valuable or relevant. Echoing the findings of other related studies (see Bailey et al., 2020), Indigenous girls valued the advice of family members, often female family members such as mothers or grandparents. This confirms that partnerships between schools, family, and community are important (Lichtenberg & Smith, 2009) and could be developed more fully as an integrated approach.

Indigenous students who had family members at a university were far more likely to consider university, and similar comments pervaded the discussion with low SES students. Some students were presented with limited options by career influencers to whom they referred as "Dream Killers". These influencers had forced students into an unwanted pathway, which the students interpreted as a negative label and personal judgement. Evidenced in the focus groups with university students, these labels could persist into adulthood. In contrast, "Door Openers" were influencers who provided information based on the individual needs and aims of each student and whose positive influence was very much valued.

7.2.1 Careers information delivery

High SES students placed most value on careers information in Year 12 and beyond, deeming earlier information unnecessary. Their comments are in stark contrast with the comments of other students. Low SES students identified a distinct lack of careers information across their secondary schooling. Low SES students in Years 7 to 9 wanted advice in the next 12 months and expressed concern about how the selection of subjects in Year 10 would impact their goals. Older low SES students acknowledged that conversations in Years 7 or 8 would have impacted their engagement and subject selection. The comments from low SES students emphasise the need for dedicated career practitioners and a collaborative approach to fostering study and career pathways across the student lifecycle. Both university and school students emphasised the impact of being streamed too early into university or non-university pathways based solely on academic performance. They highlighted the general paucity of quality alternative pathways information in terms of both accessibility and availability.

Students tended to characterise the information they sought and found on their own as trustworthy; this included information sourced through social media. When asked to identify the most influential person in their career consideration, a common answer was “myself”. This reflects previous research that emphasises self-efficacy (Betz et al., 1996) and self-determination (Ryan & Deci, 2000). The skill of forging a pathway for oneself is an important 21st century skill (van Laar et al., 2017), but we would argue the need for an expanded national website through which students and influencers can access validated information on postsecondary study options. A recommendation has previously been made by Country Education Partnership.

7.3 The *influence* of information and guidance on stakeholders

LSAY and focus group data highlight that the majority of students were influenced by information from a range of sources including career practitioners, teachers who “know them”, a parent (see also Chesters, 2018), and other external sources including incursions, excursions, work experience, social media, and the internet. The marked influence of parents and community highlights the importance and impact of social and human capitals that were less available to many low SES students.

The linked employABILITY data highlight that previous academic performance positively impacted tertiary and future study success. A major area of consensus was the need for more school-based resources. The survey data strongly signal that career practitioners and influencers in Australian secondary schools had insufficient time and human resources to meet students’ demands; qualitative findings suggest that most influencers felt overworked and undervalued (see also Schloss, 2011). Lower SES schools were also challenged by insufficient financial resources.

The emphasis on an ATAR pathway appears to disadvantage students with health or learning difficulties, low SES students, Indigenous students, and students with ambitions counter to their designated pathway — in combination, by far the majority of secondary school students. One high-performing student who chose a VET pathway described her teachers’ shock at her choice. It is clear that the “domination” (Shergold et al., 2019) of ATAR in senior secondary school influences the source and nature of the information provided in many cases.

We note also that students in Western Australia often cited a school’s self-interest in encouraging or discouraging them from ATAR studies based on the impact it would have on their school’s ATAR ranking, published publicly at the end of each school year.

In sum, multiple forces outside the control of individual students had profound and lasting impact on their future studies and career pathways (Pitman et al., 2017). The role of individual influencers and the disparity between low and high SES settings cannot be overestimated. The conceptual framework outlined in Figure 16 is a synthesis of the forces and influencers revealed by the study. These forces of influence can steer students into pathways that are more or less highly esteemed. Door Openers and Dream Killers can have a profound impact at crucial points of transition highlighted in yellow.

7.4 The impacts of information and influence

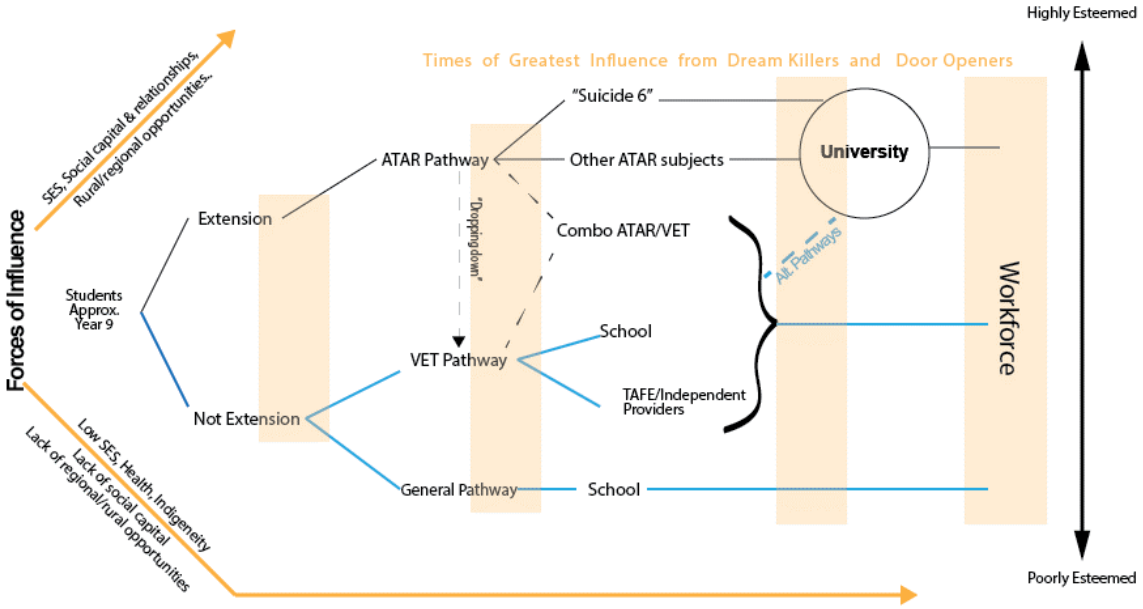


Figure 16. Student study and career pathways based on LSAY data, linked university data, and focus groups. Low SES students are more likely to follow blue pathways

8. Recommendations

Our study confirms that there is diminished access to quality career guidance for students from low SES backgrounds. The outcomes have significant potential to improve low SES students' access to, and the efficacy of, information about higher education study options, pathways, and careers. This includes the provision of information for low SES Indigenous, regional, and remote students. Once equipped, these students will be in a better position to engage in a broad range of further studies and to enter the workforce as skilled workers able to sustain meaningful careers across the career lifespan. The result will be greater student retention, enhanced graduate success, more equitable workforce participation, lower work displacement, and improved employee satisfaction and wellbeing.

Early and regular discussions with a professional career development practitioner are likely to limit the impacts of disadvantage by enhancing student retention and completion, maximising students' opportunities to transition to meaningful work and study and ensuring that students have a fall-back option should their preferences not be realised.

The project was funded immediately before the COVID-19 pandemic and conducted while its impact was only beginning to be realised. The lessons of previous recessions and other macro-economic disruptions highlight that the immediate and longer term impacts of the pandemic will be felt most keenly by students and workers with disadvantage (see Cockx, 2016), and we agree with Harvey (2020) that "the student equity gains of the past decade" (para. 6) will be endangered without specific program funding.

We argue that COVID-19 is only one of the many forces to have a devastating impact on disadvantaged students, and we advocate a renewed national effort to enhance the educational prospects and future employability outcomes for all young Australians. Community, participation, and outreach programs in Australian university education have been funded at the national level through the HEPPP over the past decade. A similar national approach is needed if secondary school students and career influencers are to successfully navigate the postsecondary environment.

We conclude that early and regular discussions with a professional career development practitioner are likely to limit the impacts of disadvantage by enhancing student retention and completion, maximising students' opportunities to transition to meaningful work and study, and ensuring that students have a fall-back option should their preferences not be realised.

Study and careers information other than that related to direct university entry is highly valued by students, but it is becoming less common. This is not only exclusive; it is also out of line with university entrants of whom more than half take an alternative pathway. Careers information should emphasise multiple study and career pathways, and these should be valued equally.

Every student in Australia should have access to career and study pathways conversations with a qualified career development practitioner. At the current time, this is simply not the case. Low SES students are not only less likely than their peers to have access to informed

career and study pathways information, they are also less likely to have access to careers information from social and family networks and have specific needs in this respect. The following recommendations seek to redress this balance.

8.1 Recommendations for broad reforms and future research

1. **Develop a national approach to ameliorating the inequitable provision of career and study pathways guidance.**

2. **Establish a nation-wide repository of student-centric information that complements the existing QILT website and enhances students' ability to make well-informed future career and study choices and connect with various sources of expertise, potentially hosted by the National Careers Institute.**

   An overarching response to the challenge of delivering career guidance would benefit from the establishment of a national framework that recommends interventions and targeted career conversations based on year of study and pools resources in a central repository to maximise reach and ensure currency. While the initial priority will be students from Years 7 to 12, we recommend that students in primary schools be exposed to multiple opportunities to learn about the world of work, explore their interests, and minimise the disruption of unequal norms and established stereotypes.

3. **Craft a national approach to assist school students and career influencers navigate the postsecondary environment.**

   Community, participation, and outreach programs in Australian university education have been funded at the national level through the HEPPP over the past decade. We recommend a similar national approach in relation to career guidance. We make this recommendation on the basis that early exposure to career development through career education and quality careers information, as well as regular career guidance with a professional career development practitioner, is likely to limit the impacts of disadvantage by enhancing student retention and completion. Further, delivery of quality career development programs encompassing all three elements is likely to maximise students' opportunities to transition to meaningful work and study and to ensure that students have a fall-back option should their preferences not be realised.

4. **Found a national approach to the collection and analysis of data in relation to secondary pathways and education-to-work reporting.**

   We endorse the recommendations of the National Centre for Student Equity in Higher Education's (NCSEHE's) 2019 *Submission to the Review of Senior Secondary Pathways*, supporting a data-driven approach to policymaking in relation to secondary pathways and education-to-work reporting, through

   a. the establishment of a National Framework for Senior Secondary Pathway Data Collection, which will draw on data collected from Australia's unique student identifier for tertiary and higher education (due to commence in 2021) to provide an evidence base for senior secondary academic performance and pathways into tertiary education and training (NCSEHE, 2019; Recommendation 7)
   b. the establishment of a National Framework on Education-to-Work Reporting and Policy to utilise the collection of data on educational attainment and

employment outcomes to generate an evidence base on the role of senior secondary pathways in work, further education, and training (NCSEHE, 2019; Recommendation 8).

5. **Create national datasets to examine the changing role of disadvantage in career guidance.**

   Further, we note that quantitative analysis using the linked employability data confirms that students' study and career confidence is shaped by socioeconomic factors including low SES status, prior achievement at school, and the type of school attended. We recommend that an extension of the current study be conducted to provide a robust and updateable dataset that allows higher education stakeholders to examine students' study and career confidence in the context of students' background, academic performance, and postgraduation activities. This is particularly crucial in the context of the ongoing impact of the COVID-19 pandemic on both secondary and higher education and the graduate labour market.

6. **Include the student voice in policymaking.**

   We recommend consulting students in all initiatives that seek to ameliorate disadvantage. In particular, there is much to be learned from the shared experiences of students from low SES, regional, rural, and remote and other disadvantaged backgrounds who have navigated the complex landscape and found their way to meaningful studies and careers. This might be achieved by including students on government committees, consulting students in the development of new initiatives, and involving students in professional learning and conference activities.

7. **Incorporate initial career development information in preservice teacher programs.**

   We endorse the inclusion of initial career development information in every preservice program and that more career development minors be made available. This recommendation relates to both the perceived value of career development in schools and the need to build capacity among teachers without career development qualifications.

8.2 Recommendations to enhance career education in schools

8. **Recognise the career practitioner role as being critical to the core business of schools.**

   Analysis of the LSAY data and subsequent responses from career influencers and students confirms that there is diminished access to quality careers information and guidance for students with disadvantage, including those with low SES status. We therefore recommend that every secondary school in Australia be required to identify an individual whose responsibility it is to ensure that study and career pathways guidance is in line with national standards and available to every student.

   Further, we recommend a review to establish appropriate performance indicators for career education activities in schools and to identify current indicators that act against inclusion and the delivery or appropriate levels of support to students — for instance, the ranking of schools on the basis of ATAR averages.

9. **Ensure that career education is undertaken by qualified practitioners in conjunction with trained educators.**

   In line with the above, we recommend that career education, delivered by qualified career development practitioners and through guided career conversations with trained but not career-qualified teachers, be built into curriculum within a flexible and future-of-work focus. Furthermore, such career education curriculum interventions should focus on enhancing the career management capacity of all students, foregrounding latticed, adaptable career pathways with an emphasis on building the broad employability skills necessary to obtain and sustain meaningful (to the individual) careers through the development of adaptability, resilience, creativity and innovation, critical thinking, and emotional intelligence.

   We endorse increased formal support of regional networks of career development practitioners be funded to connect with school support services and the responsible person in each school, thus maximising the potential for equitable access by working with career influencers without formal career development qualifications, such as teachers.

   In schools that do not employ a qualified career practitioner, we recommend that the person who undertakes this role undertakes regular, mandatory professional learning with an accredited body such as a CICA member association. Every school should complete the CICA School Career Development Service Benchmarking Resource on an annual basis and publish their Career Development Strategic Plan on the school website.

10. **Make sure that career and study pathways guidance is universal and extends across the student lifecycle.**

    We advocate for universal exposure to career guidance, including that specific efforts be made to ensure that appropriate career guidance information is available to secondary school students who may not transition directly to university.

    Further, we endorse the view that career conversations with students take the form of life-wide, life-long conversations. These should be guided by a qualified career professional, focused on individual aspirations rather than grades, at an appropriate level of detail for the student's age and revisited regularly across the student lifecycle. We also note that students value highly one-on-one conversations and recommend that these be made available to every student. Targeting of these services should take into account that low SES students have less access to careers information from social and family networks and therefore have specific needs in this regard.

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Appendices

Appendix 1: The research team

Sherry Bawa is a Senior Lecturer in the School of Economics, Finance and Property at Curtin University. As a labour economics specialist, she has demonstrated research and grant success in the fields of labour economics, higher education, and gender issues.

Dawn Bennett is Professor, Assistant Provost and Director of the Transformation CoLab with Bond University. A staunch advocate for student equity and addressing the impacts of disadvantage, she is an experienced senior leader, an educational reformist and a passionate educator. Dawn's expertise is the enhancement of student success and graduate employability. She has published over 280 academic articles and major reports and delivered almost AUD$6m in research grants.

David Carney is Executive Director of the Career Industry Council of Australia. He has more than 20 years of experience in the career development industry and is an active contributor to government and corporate consultative and advisory bodies in the area of career development, employment, and workforce development.

Jane Coffey is a Senior Lecturer with the Faculty of Business and Law at Curtin University and specialises in research in the areas of the intersection of careers, graduate employability, and the future of work. She also develops and delivers innovative and leading curriculum in the areas of career design, career sustainability, future of work, employability, human resource management, and employee relations.

Michael Dockery is Principal Research Fellow with the Bankwest Curtin Economics Centre and is an applied labour economist focusing on improving labour market, education, and wellbeing outcomes for marginalised groups within society. He has worked extensively with and published from the LSAY data and other panel surveys.

Paul Koshy is a Research Fellow at the National Centre for Student Equity in Higher Education (NCSEHE) based at Curtin University. His research focuses on the determinants of higher education participation in Australia, the analysis of student disadvantage, and policy and institutional responses to it.

Ian Li is an economist based at the School of Population and Global Health, University of Western Australia. He has extensive nationally competitive research grant experience. Ian has an established track record of competitive research funding (including as lead investigator) and publications on student equity in higher education, with a particular focus on academic and graduate labour market outcomes.

Siobhan Unwin is a Sessional Academic at Curtin University's School of Education with a focus on equity and social justice. As a qualified educator, she has worked for Curtin University, Murdoch University, the School Curriculum and Standards Authority (SCSA), and the Department of Education on technologies, the arts, and 21st century skills.

Appendix 2: Supplementary analyses of LSAY data on access to careers information by student SES

Background

Inquiry 1 featured an extensive analysis of the career guidance information contained in the LSAY. Key elements of that analysis and an overview of the main findings are presented in Chapter 4. This appendix provides supplementary details and statistical results.

Participation in career guidance activities at school

We commence with an overview of the data on the sources of careers advice utilised by high school students, and their perceptions of the usefulness of that information, for the five cohorts initiated from Y98 to Y15. In the analyses for each cohort, the samples were restricted to students who were in their expected school grade in each wave of the survey. For example, the analysis of students from the Y98 cohort is based on students who were attending school in Year 11 in Wave 3 and in Year 12 in Wave 4 (see Table A2.1 and Table A2.6 below).

Information on access to careers advice was first collected from students in the Y98 Wave 3 survey when the students were primarily in Year 11. Students were asked, “To the best of your knowledge, does your school provide information on any of the following?”

- apprenticeships and traineeships
- careers that students might be interested in
- TAFE courses
- university courses
- financial support for study at TAFE or university.

Students were given response options of “yes”, “no”, or “don’t know”. For each item students responded “yes” to, they were asked whether they accessed any of the information. This same question was asked in the following year’s survey when most students were in Year 12.

Table A2.1 shows the percentage of students who indicated that their school did provide information in each area and the percentage who reported having accessed that information. A very high proportion of students indicated that their schools provided information on careers — around 96% for both Year 11 and Year 12 students.[8] Generally, where students did not indicate affirmatively that the school provided information, the responses were roughly evenly split between “no” and “don’t know”. Only 44% of Year 11 students indicated that their school provided information on financial support, but many were unsure about the availability of this advice (33% indicated “don’t know”).

[8] Wherever applicable, figures cited in the analyses of the LSAY data are calculated using the corresponding “final weights” for each year, which are a combination of the student’s initial sampling weight and weights accounting for subsequent sample attrition.

Table A2.1. Careers information provided and accessed: Years 11 and 12 students, Y98 cohort (per cent)

	Students in Year 11 (2000)		Students in Year 12 (2001)	
Information on:	School provides	Student accessed	School provides	Student accessed
Apprenticeships and traineeships	88.2	26.5	92.6	25.4
Careers students might be interested in	95.2	59.7	96.4	70.8
TAFE courses	92.1	34.9	95.7	44.1
University courses	87.2	50.0	97.3	75.5
Financial support for study at TAFE/uni.	44.2	8.0	63.8	19.8
Any of above	99.4	77.2	99.7	91.6
(Observations)	(8,241)		(7,032)	

Students were only asked whether they had accessed information if they first indicated that the school did provide that information. However, in calculating the per cent of students who accessed a particular type of information, we included all students in the denominator. Consequently, the reported level of access was determined by two effects: first, whether the school provided that information (and/or the student was aware of this) and, second, whether the student then accessed the information. Given the generally high proportion of schools providing information, the level of access was primarily determined by student engagement with the service rather than school provision. Substantially more Year 12 students, as compared to Year 11 students, accessed information on each topic, as would be expected in their final year of secondary schooling. This is most pronounced for information on university courses and financial support for postschool study. The exception is for information on apprenticeships and traineeships. Around one quarter of students accessed information on these in both years.

Commencing from the Y03 cohort, school students from each cohort were asked questions about activities that they had participated in relating to careers advice. The question was only asked of students who were still attending school. In Y03, the question was included in Waves 1 to 3 when the respondents were mostly in Years 10, 11, and 12. This is the only cohort from which careers advice data were collected for Year 10 students. From Y06, the PISA questionnaires constituted the cohort's Wave 1 (Year 10) questionnaires, and these did not include information on careers advice. Hence, it is instructive to investigate the Y03 data separately.

For the Y03 cohort, the question was as follows: "The next few questions are about careers advice at school. During [this year], have you done any of the following at your school?". Students could indicate either "yes" or "no" with respect to each of the following items:

- listened to a talk from the school's career advisor
- received handouts or written material about careers
- taken part in a group discussion about careers
- spoken individually to the school's career advisor
- looked online for career guidance or advice

- listened to a talk by an employer representative
- listened to a talk by someone from a TAFE or university.

For each activity the student had participated in, they were further asked how useful they found that advice, using the response options of *not at all useful*, *not very useful*, *somewhat useful*, or *very useful*. We assigned numerical values from 1 to 4 to each of these, respectively, to generate a measure of the usefulness of that source of advice. Table A2.2 shows the proportion of school students who participated in each of the careers-related information activities, by year. It can be seen that students engaged most in careers information in Years 10 and 12, with a lull in Year 11. Virtually all students engaged in some form of careers advice activity in Years 10 and 12. There was a relatively greater emphasis on talks from employer representatives in Year 10 and on talks from TAFE and university representatives in Year 12. There was also a substantial increase in accessing online careers information for this cohort between Years 10 and 12.

Table A2.2. Participation in career guidance activities, Years 10 to 12 students, Y03 cohort (per cent of students)

Information on:	Year 10 (2003)	Year 11 (2004)	Year 12 (2005)
Listened to talk by school's career advisor	89.2	64.3 ***	83.8 ***
Received handouts/written material	96.0	77.5 ***	92.8 ***
Took part in group discussion	80.3	45.8 ***	60.2 ***
Spoke individually to career advisor	66.5	49.5 ***	67.6 ns
Looked online for guidance/advice	50.7	42.1 ***	61.6 ***
Listened to talk by employer representative	53.5	39.6 ***	47.8 ***
Listened to talk by TAFE/university rep.	53.8	49.2 ***	74.3 ***
Any of the above	99.5	93.8 ***	99.0 **
Observations	7,378	5,717	4,856

Notes: ***, **, and * indicate the estimate was significantly different to the corresponding figure for Year 10 at the 1%, 5%, and 10% level, respectively, by the standard *t* test; ns indicates the two estimates were not significantly different.

Student ratings of the usefulness of each source of information were quite consistent across the years. The mean responses range from 3.0 to 3.5, or from *somewhat useful* to halfway between *somewhat useful* and *very useful* on the scale, as shown in Table A2.3. Speaking individually with the school's career advisor was consistently rated as the most useful exercise, although there may be a degree of selection bias in this rating in that students who did speak to the career advisor individually may have been more likely to proactively seek careers information. This may not be the case for those who listened to talks or took part in group discussions.

Table A2.3. Usefulness of career guidance activities: mean ratings by participants, Years 10 to 12, Y03 cohort

Information on:	Year 10 (2003)	Year 11 (2004)	Year 12 (2005)
Listened to talk by school's career advisor	3.3	3.2	3.3
Received handouts/written material	3.3	3.1	3.3
Took part in group discussion	3.2	3.0	3.1
Spoke individually to career advisor	3.5	3.5	3.5
Looked online for guidance/advice	3.1	3.2	3.2
Listened to talk by employer representative	3.3	3.2	3.2
Listened to talk by TAFE/university rep.	3.3	3.3	3.4

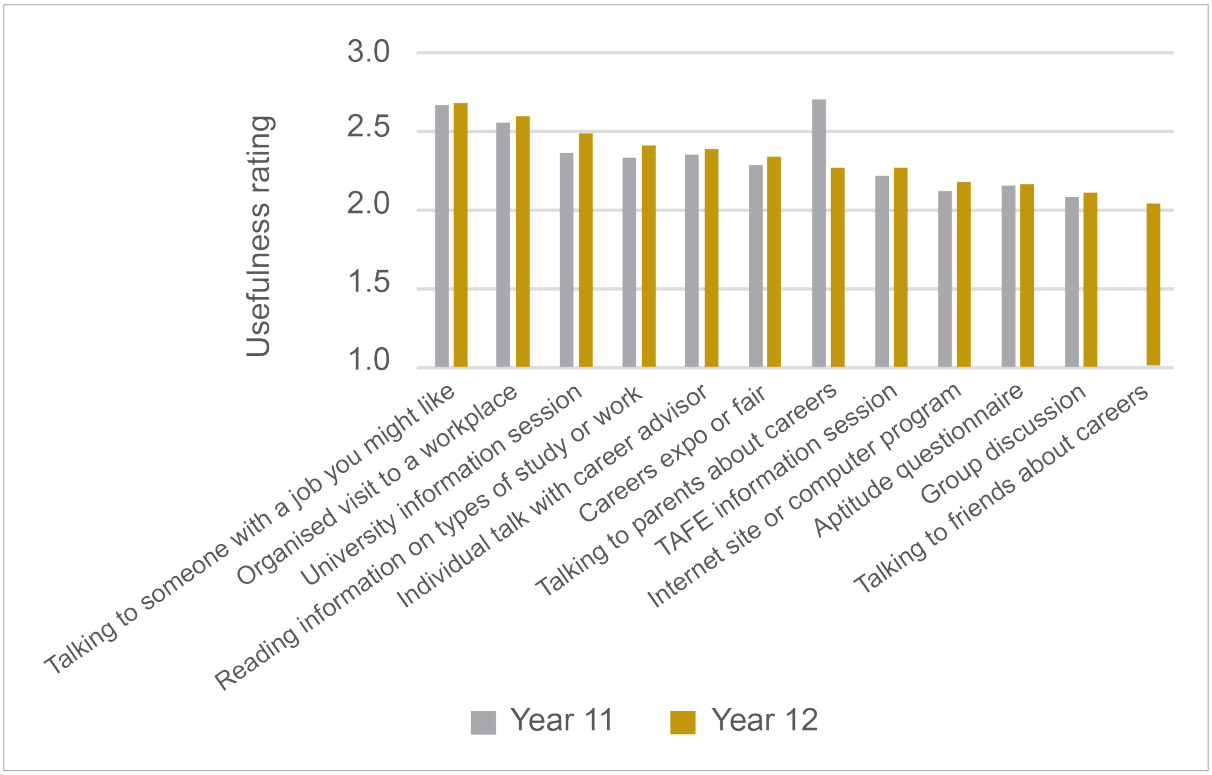
Notes: Means of student ratings on a scale of 1 = *not at all useful*, 2 = *not very useful*, 3 = *somewhat useful*, 4 = *very useful*. Calculated across students who participated in the activity in that year and provided valid rating.

There was a substantial change in the corresponding question for the Y06 to Y15 cohorts. The introductory wording to the questions remained quite similar:

- Y06: “Have you done any of the following to find out about future careers or types of work?”
- Y09: “Have you done any of the following to find out about what you will do after you leave school?”
- Y15: “Have you done any of the following to …
- [Year 11] … help you make decisions about your future?”
- [Year 12] … find out about what you will do after you leave school?”

In each survey, the youth were asked to indicate “yes” or “no”, but there have been substantial changes to the response categories offered over the years. As best as possible, given the changing response options across cohorts and between survey waves, the proportion of students participating in the various activities to source careers information was summarised in Section 3.3 of the report (see Figure 3 for Year 11s and Figure 4 for Year 12s).

Like the Y03 cohort, the Y06 cohort was asked to rate the usefulness of the careers advice activities they had participated in, this time using a 3-point scale of *not very useful*, *somewhat useful*, and *very useful*. Recoding these with values of 1, 2, and 3, respectively, Figure A2.1 shows the mean ratings ordered left to right from most useful to least useful as assessed by Year 12 students. The relative ordering of the activities was very similar for students in both years, with the exception that conversations with parents were seen as much more useful for Year 11s. Speaking to someone in a job of interest and organised visits to workplaces were valued by students from both years, as were university information sessions for Year 12s. In contrast to the Y03 cohort, who consistently ranked individual talks with the school career advisor as the most useful source of information from Year 10 to Year 12, an individual talk with the career advisor ranked the fifth most useful activity for both Year 11s and 12s from the Y06 cohort.



Notes: Rating is the mean of responses on a scale: 1 = *not very useful*, 2 = *somewhat useful*, 3 = *very useful*.

Figure A2.1. Usefulness of career guidance activities: mean ratings by participants, Years 11 and 12, Y06 cohort

Rather than soliciting assessments of the usefulness of each activity participated in, starting with the Y09 cohort, the surveys simply asked students to indicate which activities they participated in they found to be the most useful source of careers information. For the Y15 cohort, this was asked only of Year 12 students. Figure A2.2 shows the activities that students most commonly nominated as their most important source of careers information and the associated proportion of students selecting that activity. Only activities nominated as the most important source by at least 10% of students in any one year are included. While the question was asked only of students who nominated more than one activity, this related to the vast bulk of students. Talking to a career advisor was ranked by a high proportion of students as their most important source of careers information, although it should be noted that the response option for the Year 12s in cohort Y15 included teachers as well as career advisors or counsellors. University information sessions were highly valued as a source of information by the Year 12s in the Y15 cohort. As observed for the Y06 cohort, conversations with parents and family were seen as very important in shaping career plans for students in Year 11. Compared to earlier cohorts, there appears to be a lessening in the value placed on information sourced directly from workplaces in the form of either speaking to someone in a particular job or visits to a workplace.

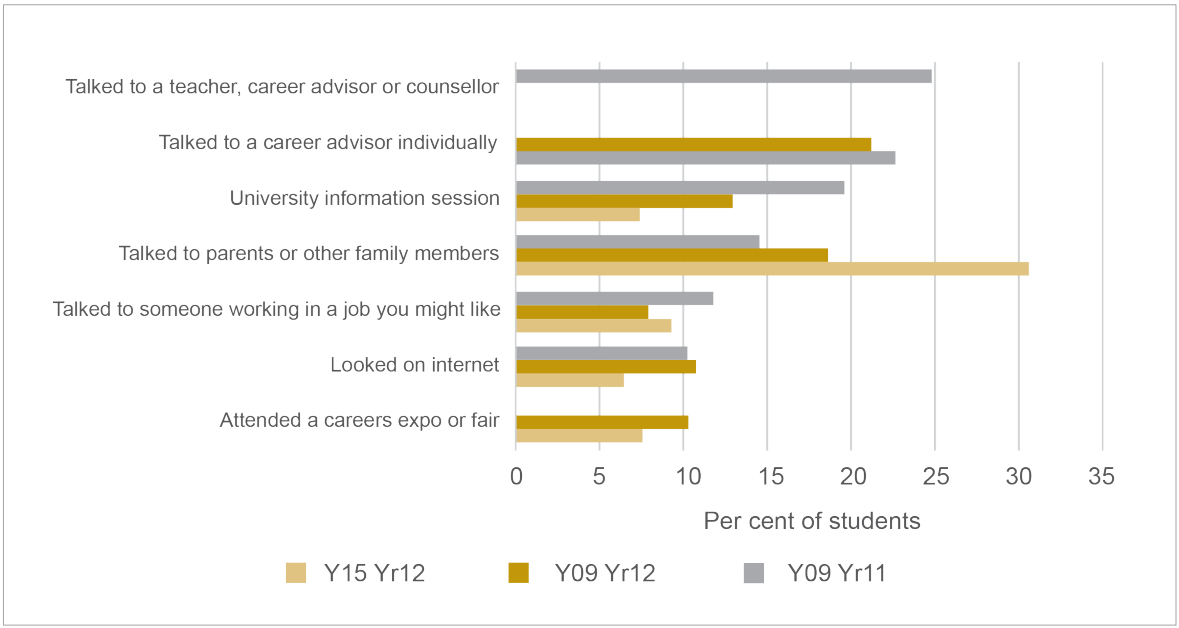


Figure A2.2. Most important source of careers information nominated: Y09 Year 11s and Year 12s, and Y15 Year 12s

Importance of careers information by socioeconomic status

Figure A2.3 shows the proportion of students within each SES quartile (as defined in Section 3.2.2) who nominated each form of activity as their most useful source of careers information (only the seven most nominated activities are included). A higher proportion of students from low socioeconomic backgrounds felt that discussions with their teachers and career advisors was their most important source of careers information. Work experience and the internet also appear to be relatively more useful sources of careers information for students from low socioeconomic backgrounds. In contrast, university information sessions were most valued by high SES students.

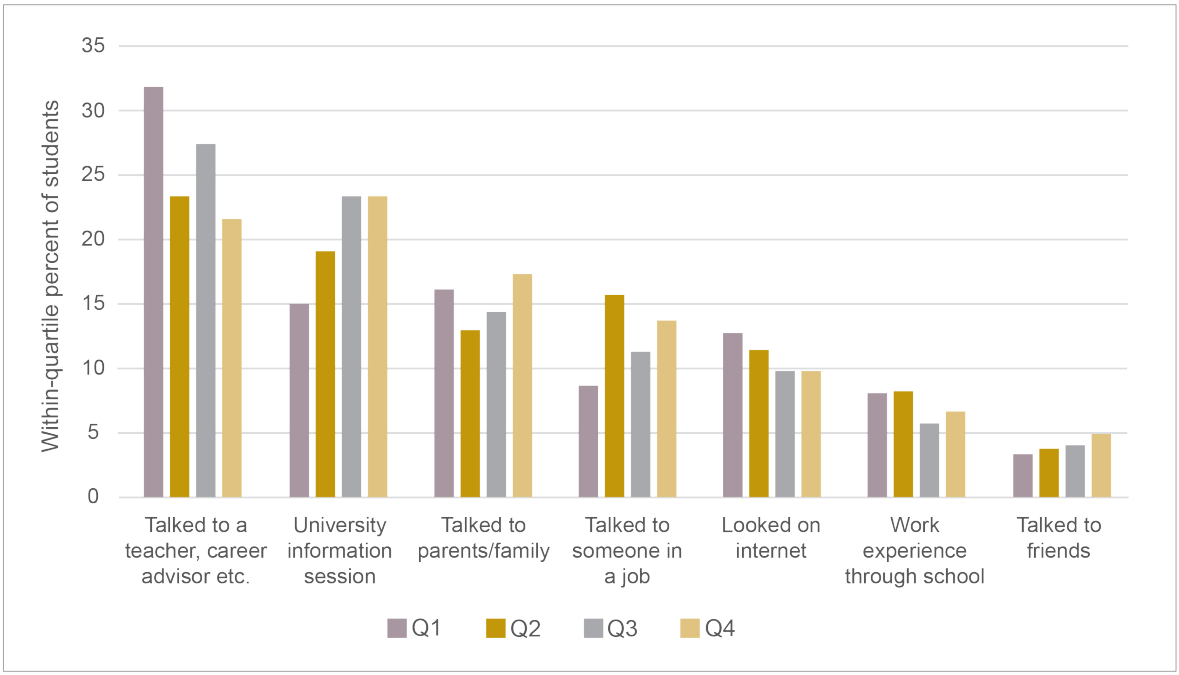


Figure A2.3. Most important source of information for Year 12s, by SES quartile, Y15 Year 12s

Multivariate logistic regression analysis: addition details

Table A2.4 reports the results of logistic regression models of the likelihood that a student engaged in selected activities relating to careers advice: speaking to a career advisor, attending a university information session, attending a TAFE information session, organised visit to a workplace, spoken to someone with a job they may be interested in, spoken to family, and looked for information online. The Y15 surveys did not collect information on individual appointments with a career advisor or counsellor, only the broader descriptor of "teacher, career advisor or counsellor at your school". Hence, this was modelled separately for students from the Y15 cohort (Model 2).

The estimated coefficients from the logistic regression are presented and their level of significance denoted by asterisks. Positive coefficients indicate that an increase in the variable is associated with a higher estimated likelihood that the student participated in the activity being modelled. Highly significant ($p < 0.01$) and positive effects of SES were observed for individual appointments with a career advisor, attending a university information session, speaking to a person who works in a job of interest, discussing potential careers with family, and accessing careers information on the internet, and a weakly significant ($p < 0.10$) positive effect was observed for the Y15 cohort between the quartile of SES and talking to a teacher or career advisor. However, there were exceptions to the positive SES gradient. Students from higher socioeconomic backgrounds were estimated to be less likely to attend a TAFE information session (highly significant) or to attend an organised workplace visit ($p < 0.10$). The evidence of greater access to careers information for students from higher SES backgrounds is reinforced in results for school sector, as discussed in the main report.

To briefly summarise results for the other control variables, Year 11 students were more likely than Year 12 students to have participated in TAFE information sessions and workplace visits, to have spoken to a person in a job of interest, and to have had discussions with their parents about careers. Year 12 students were more likely to have accessed the other sources of careers information. Generally, girls appeared more active in accessing careers information, though boys were more likely to have attended a TAFE session or an organised workplace visit. Indigenous students were also more likely to have attended TAFE sessions and workplace visits and to have spoken directly to someone in a job of interest. NESB students had a relative focus on university information. TAFE information sessions were more prevalent for students attending school in Queensland, South Australia or Northern Territory, and Western Australia.

Table A2.4. Likelihood of engaging selected sources of careers advice, logistic regression results (odds ratios)

Variable	Talked to career advisor individually (1)		Talked to career advisor or teachers (2)		University information session (3)		TAFE information session (4)		Organised workplace visit (5)		Spoke to person in job of interest (6)		Talked to parents or other family (7)		Looked online (8)	
Intercept	0.178	***	0.594	***	-0.850	***	−0.700	***	0.313	***	0.440	***	2.184	***	0.776	***
Cohort:																
Y03	−0.426	***													−1.299	***
Y06	—				—		—		—		—		—		—	
Y09	0.098	***			0.089	***	−0.210	***	−0.102	***	−0.002		0.028		−0.018	
Y15					0.122	***	−0.798	***	−0.799	***	−0.049		−0.870	***	0.034	
Year 12	0.462	***	0.384	***	0.666	***	−0.163	***	−0.809	***	−0.093	***	−0.213	**	0.324	***
Female	0.176	***	0.186	***	0.248	***	0.095	***	−0.181	***	−0.059	**	0.127	*	0.109	***
Indigenous	−0.025		0.090		0.020		0.290	***	0.315	***	0.179	***	−0.109		−0.085	
NESB	0.010		−0.082		0.340	***	−0.356	***	−0.149	***	−0.314	***	−0.298	***	0.092	**
State/territory																
NSW	—		—		—		—		—		—		—		—	
VIC	0.634	***	0.526	***	0.043		−0.010		0.059		−0.089	**	−0.040		0.280	***
QLD	−0.199	***	0.136		-0.131	***	0.379	***	−0.003		0.049		−0.066		−0.036	
SA/NT	−0.127	***	0.280	**	-0.213	***	0.230	***	0.414	***	0.105	***	0.053		0.299	***
WA	−0.517	***	−0.320	***	0.029		0.290	***	−0.211	***	−0.021		0.133		0.147	***
TAS	−0.089	*	0.430	**	0.214	***	0.127	**	0.027		0.051		−0.220	*	0.144	***
ACT	−0.282	***	−0.376	***	-0.281	***	−0.100		−0.246	***	−0.234	***	−0.403	***	−0.271	***
SES Qrtle [1–4]	0.040	***	0.056	*	0.214	***	−0.126	***	−0.021	*	0.085	***	0.312	***	0.086	***
School sector																
Government	—		—		—		—		—		—		—		—	
Catholic	0.153	***	0.109		0.239	***	−0.148	***	−0.122	***	0.100	***	0.451	***	0.127	***
Private	0.262	***	0.393	***	0.291	***	−0.480	***	0.093	***	0.227	***	0.352	***	0.076	**
Observations	30,965		5,164		25,644		25,644		25,644		25,644		17,323		36,129	

Notes: ***, **, and * indicate the estimated coefficient was significant at the 1%, 5%, and 10% level, respectively. All models were highly significant overall — we can reject the hypothesis of the coefficients being jointly equal to zero by the likelihood ratio and Wald tests at the 1% level.

Multivariate models were also estimated using students' assessment of the value of different sources of careers information. Estimates using the sample of Year 12s from the Y09 cohort indicated that students from higher SES backgrounds and attending nongovernment schools were more likely to rate an individual appointment with the career advisor as the most useful source of careers information. This did not apply for the Y15 Year 12s; however, the question put to those students related to the broader category of speaking to a teacher or career advisor. For the Y06 Year 12s, who were asked to assess the usefulness of their discussion with a career advisor, higher SES was associated with a less positive assessment of the usefulness of that information.

Formal study and work plans

In several of the LSAY, students were asked about guidance on developing a formal plan about their future work and study. Again, the wording of the question has changed over time, as shown in Table A2.5, and this may affect the frequencies to some degree.

Table A2.5. Assistance in developing a formal plan in Years 11 and 12: Y06 and Y09 cohorts

Question text: Now some questions about careers advice ...	Cohort/ Year	Per cent indicating "yes"
Has anyone ever taught you to develop a formal plan about your future study and work?	Y06, Year 11	45%
	Y09, Year 11	55%
Since your last interview, has anyone taught or shown you how to develop a formal plan about your future study and work?	Y06, Year 12	47%
Since your last interview, has anyone helped you to develop a formal plan about your future study and work?	Y09, Year 12	53%

Follow-up questions indicated that for around 90% of students, the assistance with developing a formal plan occurred at school. In the Year 11 and Year 12 surveys for the Y15 cohort, the option of "Developed a formal plan about your future study and work" was included among the list of items about activities students had done to help make decisions for their future. The much lower proportion of students indicating they had developed a plan—27% and 38% for Year 11s and Year 12s, respectively—indicates that these were not comparable to the earlier questions.

The variation in support to develop a formal plan in each year and cohort by quartile of SES background and school sector is shown in Figure A2.4 and Figure A2.5, respectively. On visual inspection, a greater degree of support for career planning associated with higher SES and in nongovernment schools seems evident, primarily for Year 12 students. As a more formal empirical test, the data from the four surveys were pooled, and the probability of the student having been assisted to formulate a plan was estimated using the same modelling approach set out above. The variation in the question put to Year 12s is minor, and any effect on the responses will be partially captured through the cohort dummy variable. The results (not reported) suggested that the likelihood of being assisted to develop a formal career plan increased marginally by SES quartile (by around 1 percentage point each quartile, $p < 0.05$) and was higher for students attending independent private schools (by around 4 percentage points, $p < 0.01$). No significant difference was observed for students from Catholic schools relative to those from government schools. However, Figure A2.5 would suggest the null result for Catholic schools arose largely because of the low proportion of Year 11 Catholic school students from the Y06 cohort who were assisted to develop a plan. That did not apply for Year 12s from that cohort, or for the Y09 cohort.

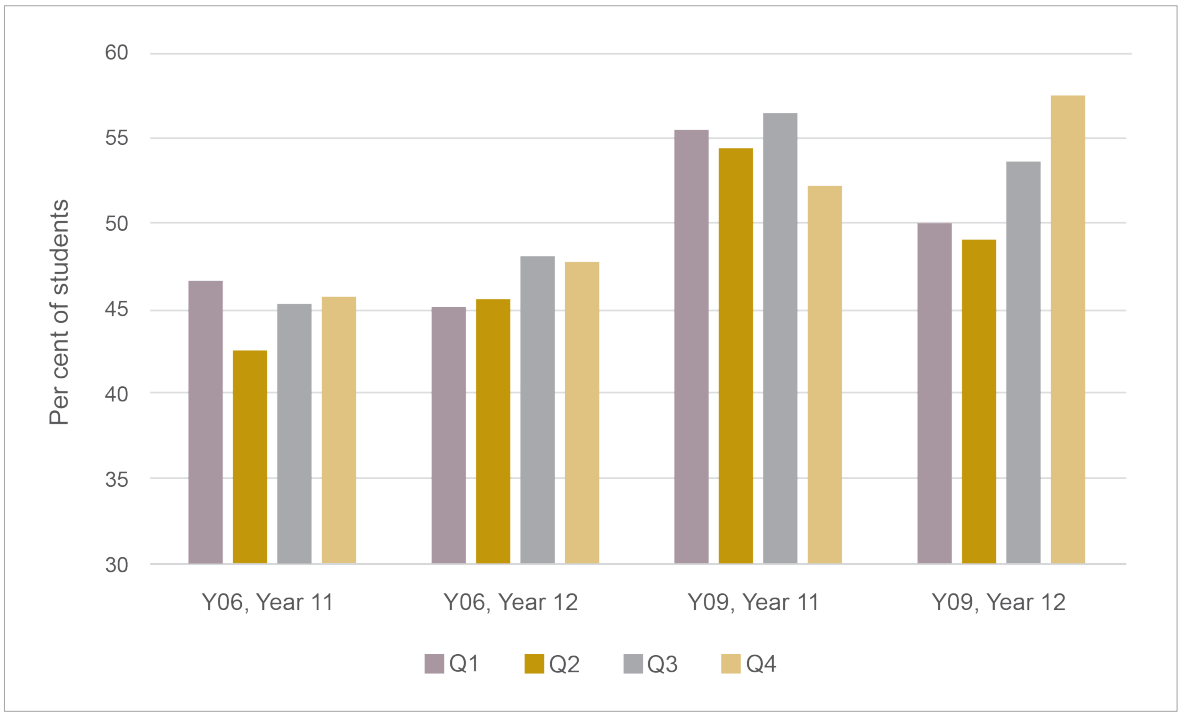


Figure A2.4. Assistance developing a formal career plan by SES, Year 11s and 12s, Y06 and Y09

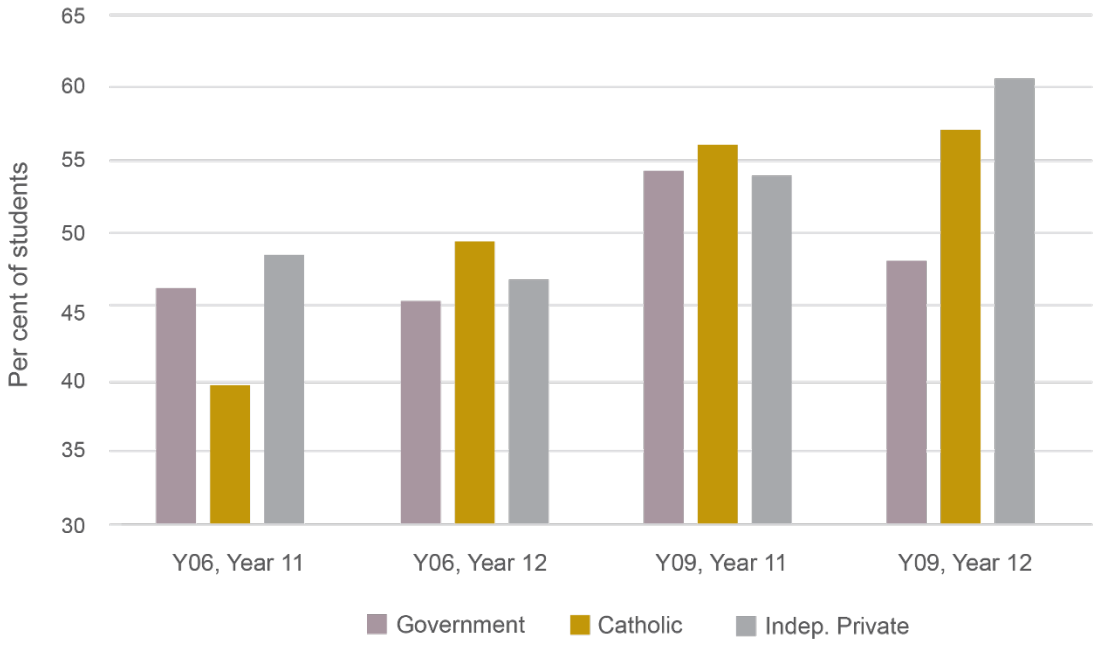


Figure A2.5. Assistance developing a formal career plan by school sector, Year 11s and 12s, Y06 and Y09

Table A2.6. LSAY cohorts: Sample statistics (available data 1998 to 2020)

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Wave 9	Wave 10	Wave 11	Wave 12
Y98 Initial modal age = 14; modal grade = Year 9												
	(age 14)											(age 25)
Sample	14,117	9,289	9,548	8,777	7,762	6,905	5,979	5,356	4,729	4,210	3,859	3,596
Net retention (%)		65.8	67.6	62.2	55.0	48.9	42.4	37.9	33.5	29.8	27.3	25.5
Y03–Y15 Initial modal age = 15; modal grade = Year 10												
Y03	(age 15)										(age 25)	
Sample	10,370	9,378	8,691	7,721	6,658	6,074	5,475	4,903	4,429	3,945	3,741	
Net retention (%)		90.4	83.8	74.5	64.2	58.6	52.8	47.3	42.7	38.0	36.1	
Y06												
Sample	14,170	9,353	8,380	7,299	6,316	5,420	4,670	4,223	3,839	3,563	3,343	
Net retention (%)		66.0	59.1	51.5	44.6	38.2	33.0	29.8	27.1	25.1	23.6	
Y09												
Sample	14,251	8,759	7,626	6,541	5,787	5,082	4,529	4,037	3,518	3,234		
Net retention (%)		61.5	53.5	45.9	40.6	35.7	31.8	28.3	24.7	22.7		
Y15												
Sample	15,059	4,704	4,603	4,825								
Net retention (%)		31.2	30.6	32.0								

Appendix 3: The EmployABILITY measure

Summary

Students used the online employABILITY tool (Bennett, 2019a) to create a 29-page personalised employability profile. Students chose whether to include their responses in the database for analysis. Students and educators had access to employABILITY resources on the student and educator websites. Items within the online tool are summarised below.

Table A3.1 The EmployABILITY measure (Bennett, 2019a)

Subscale	Items (count)	Original source and treatment	Indicators of employability
Self-awareness and program awareness	7	Constructs: self-awareness (SA, three items); program awareness (PA, four items). New scale including two items adapted from Jackson and Wilton's (2016) Career Management Scale.	SA: Awareness of employability-related personal strengths and challenges. PA: Awareness of how a study program relates to the development of graduate employability.
Communication, teamwork, and leadership	16	Constructs: communication (C, eight items); teamwork and leadership (TL, nine items). Adapted from Kew's (2014) analysis of Coetzee's (2014) Graduate Skills and Attributes Scale (GSAS) factor 1, *interactive skills*.	C: Personal efficacy in using language and technology to communicate with others. TL: Use of and confidence in leadership and teamwork capabilities.
Self-efficacy beliefs	26	Constructs: academic self-efficacy (ASE: 13 items); self-regulated learning (SRL, five items); help-seeking behaviour (HSB, eight items). Adapted from Byrne et al.'s (2014) Academic Self-Efficacy Scale for accounting students.	ASE: Confidence in meeting study requirements, passing units, and understanding learning content. SRL: Confidence in monitoring and regulating learning and judging the standards required to succeed. HSB: Confidence in seeking feedback, asking for help, or contributing to discussions.
Problem-solving and decision-making	8	Coetzee (2014) GSAS factor 2, *problem-solving and decision-making* (PS, eight items).	PS: Tendency to creatively and proactively produce solutions to a recognised problem.
Goal-directed behaviour	10	Coetzee (2014) GSAS factor 6, *goal-directed behaviour* (GDB, 10 items).	GDB: Tendency to be proactive and strategic in order to meet goals and deadlines.
Career identity and commitment	8	Constructs: career commitment (CC, four items); reconsideration of commitment (RC, four items). Adapted from the identification with and reconsideration of commitment dimensions in Mancini et al.'s (2015) Professional Identity Status Questionnaire.	CC: Being proud and happy about becoming a professional in the discipline (identification and affirmation).

			RC: Considering alternative study or career pathways when a current commitment is unsatisfactory.
Ability and willingness to learn	7	Coetzee (2014) GSAS factor 3, *continuous learning orientation* (CLO, seven items).	CLO: Commitment and ability to maintain career-related knowledge, skills, and abilities.
Self-esteem	10	Greenberger et al.'s (2003) adaption of Rosenberg's (1965) Self-Esteem Scale (SE, 10 items).	SE: Sense of self-worth and personal value.
Technological and digital literacy	4	New scale (four items)	TDL: Ability to learn and use digital technologies relating to study, work, and career panning
Emotional intelligence	19	Constructs: Managing emotions (ME, four items); social management (SM, four items); using emotions (UE: four items); perceiving emotions (PE, four items); using emotions (UEM, three items). Adapted from Bracket et al.'s (2006) Self-Rated Emotional Intelligence Scale.	ME: Ability to manage one's own emotions. SM: Ability to manage the emotions of others. PE: Ability to perceive the emotions of others. UE: Use of emotions when making decisions. UEM: Ability to understand and articulate emotions.
Perceived program relevance	4	Smith et al.'s (2014) Employability Scale (PPR, three items) plus a fourth item (new).	PPR: Ability to recognise the relevance of learning tasks and integrate theory and practice into workplace settings.
Career exploration and awareness	8	From Lent et al.'s (2016) Career Exploration and Decision Self-Efficacy Scale (CEDSE). Factor 1: brief decisional self-efficacy (CEA: eight items).	CEA: Ability to understand and match self-qualities with career and study options.
Ethical and responsible behaviour	5	Coetzee (2014) GSAS factor 7, ethical and responsible behaviour (ERB, five items).	ERB: Adoption of ethical and responsible behaviour in relation to self, work, and community.
Occupational mobility	4	From Lent et al.'s (2016) CEDSE. Factor 2: decisional coping efficacy. (OM: four items).	OM: Ability to cope with career-related decisional obstacles and postdecisional regrets.

Appendix 4: EmployABILITY measure: extended demographic profile

Table A4.1. Descriptive statistics of the school-leaver sample

Variable	(i) Full sample	(ii) Non-low SES	(iii) Low SES	(iv) Independent	(v) Government
Institution					
Curtin University	0.954	0.961	0.919	0.955	0.953
Edith Cowan University	0.004	0.004	0.002	0.004	0.004
Western Sydney University	0.042	0.035	0.079	0.042	0.043
Demographics					
Female	0.626	0.622	0.645	0.614	0.642
Male	0.374	0.378	0.355	0.386	0.358
Age (years)	19.54	19.52	19.64	19.36	19.78
Low SES	0.159	0.000	1.000	0.147	0.176
Govt Sch	0.430	0.421	0.473	0.000	1.000
On-campus	0.972	0.975	0.959	0.977	0.966
Part-time	0.048	0.048	0.047	0.049	0.047
NESB	0.114	0.101	0.181	0.074	0.166
Rural or Remote	0.158	0.134	0.286	0.158	0.158
Disability	0.022	0.024	0.013	0.024	0.019
First in Family	0.266	0.249	0.355	0.255	0.281
Field of Education					
Natural and Physical Sciences	0.065	0.059	0.101	0.062	0.070
Information Technology	0.028	0.029	0.020	0.025	0.031
Engineering and Related Technologies	0.010	0.011	0.009	0.010	0.010
Architecture and Building	0.029	0.028	0.033	0.031	0.027
Agriculture, Environmental and Related Studies	0.019	0.019	0.019	0.018	0.020
Health	0.432	0.434	0.424	0.412	0.459
Education	0.055	0.053	0.062	0.048	0.064
Management and Commerce	0.226	0.231	0.197	0.259	0.182

Society and Culture	0.085	0.084	0.088	0.083	0.088
Creative Arts	0.049	0.051	0.043	0.051	0.048
Food and Hospitality	0.002	0.001	0.005	0.002	0.002
Observations	6,300	5,296	1,004	3,594	2,706

Appendix 5: Technical overview of sample

Table A5.1. School-leaver model with the Government School variable

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
Female	0.051**	0.126***	0.097***	0.130***	−0.044***	0.064***	0.113***	−0.116***
	(2.441)	(6.376)	(4.655)	(4.911)	(3.339)	(2.893)	(2.999)	(2.712)
Age	0.009**	0.003	0.009**	0.029***	0.001	0.008**	0.011	0.026***
	(2.493)	(0.917)	(2.497)	(6.461)	(0.657)	(1.965)	(1.616)	(3.585)
On-Campus	0.077	0.05	0.057	0.093	0.092**	0.149**	0.041	0.126
	(1.328)	(0.803)	(0.912)	(1.259)	(2.551)	(2.255)	(0.403)	(1.028)
Part-Time Study	−0.031	−0.153***	0.025	−0.118*	0.073**	−0.088	−0.102	0.164*
	(0.633)	(3.000)	(0.494)	(1.948)	(2.522)	(1.594)	(1.161)	(1.718)
Low SES	−0.026	0.007	0.027	−0.022	−0.018	−0.107***	−0.025	−0.031
	(0.953)	(0.273)	(0.984)	(0.634)	(1.032)	(3.596)	(0.534)	(0.547)
Government School	−0.019	−0.043**	−0.02	−0.027	−0.049***	−0.043**	−0.076**	−0.089**
	(0.946)	(2.285)	(1.002)	(1.079)	(3.879)	(2.053)	(2.117)	(2.134)
NESB	−0.049	0.027	0.121***	−0.262***	−0.035*	−0.084**	−0.123**	−0.03
	(1.529)	(0.941)	(4.289)	(6.357)	(1.83)	(2.488)	(2.197)	(0.468)
Rural or Remote	0.024	0.01	0.001	−0.017	0.028*	0.039	0.017	0.061
	(0.883)	(0.41)	(0.019)	(0.479)	(1.65)	(1.407)	(0.361)	(1.116)
Disability	0.003	−0.034	−0.067	0.205***	−0.198***	−0.069	−0.109	−0.171
	(0.045)	(0.596)	(0.983)	(2.761)	(4.142)	(0.88)	(0.754)	(1.001)
First in Family	−0.033	−0.016	0.031	−0.014	−0.026*	−0.092***	−0.038	−0.076*
	(1.489)	(0.797)	(1.435)	(0.516)	(1.882)	(3.913)	(0.967)	(1.682)
Natural and Physical Sciences	−0.045	0.04	−0.052	0.270***	−0.081***	0.067	−0.039	−0.06
	(1.015)	(0.985)	(1.192)	(5.076)	(2.907)	(1.462)	(0.473)	(0.661)
Information Technology	−0.182***	−0.074	−0.160**	0.375***	−0.111***	−0.103	−0.095	−0.237*
	(2.938)	(1.323)	(2.505)	(5.235)	(2.873)	(1.529)	(0.903)	(1.835)
Engineering and Related Technologies	−0.004	0.192***	−0.031	0.690***	0.042	0.131	0.358**	0.23

	(0.041)	(2.879)	(0.3)	(7.037)	(0.684)	(1.434)	(2.497)	(1.073)
Architecture and Building	0.004	0.1	0.016	0.271***	−0.008	−0.036	0.093	−0.142
	(0.066)	(1.64)	(0.261)	(3.69)	(0.221)	(0.565)	(0.975)	(1.284)
Agriculture, Environmental and Related Studies	−0.09	−0.135**	−0.108	0.352***	0.006	0.008	0.09	0.075
	(1.361)	(2.112)	(1.433)	(4.507)	(0.125)	(0.114)	(0.778)	(0.546)
Health	0.080***	0.250***	0.075***	0.202***	−0.018	0.050*	0.160***	−0.119**
	(3.154)	(10.257)	(3.005)	(6.278)	(1.174)	(1.835)	(3.501)	(2.273)
Education	0.104**	0.254***	0.072	0.485***	−0.036	0.077	0.219***	−0.032
	(2.306)	(6.066)	(1.586)	(8.852)	(1.242)	(1.541)	(2.579)	(0.314)
Society and Culture	0.012	0.093**	−0.003	0.222***	−0.011	0.05	0.11	−0.012
	(0.316)	(2.537)	(0.073)	(4.603)	(0.451)	(1.264)	(1.604)	(0.151)
Creative Arts	−0.154***	−0.359***	−0.194***	0.292***	−0.149***	−0.143***	0.004	−0.319***
	(3.03)	(6.847)	(3.699)	(4.943)	(4.568)	(2.67)	(0.04)	(3.174)
Food and Hospitality	0.260*	0.307*	0.031	−0.007	0.126	0.251*	0.047	0.918***
	(1.824)	(1.897)	(0.127)	(0.025)	(1.037)	(1.787)	(0.13)	(3.47)
Constant	4.450***	4.753***	3.562***	2.560***	2.142***	5.045***	6.545***	5.835***
	(44.53)	(49.037)	(36.595)	(20.904)	(34.722)	(47.625)	(37.14)	(29.357)
Observations	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300
R-squared	0.014	0.065	0.021	0.041	0.019	0.015	0.010	0.010
R^2-adjusted	0.011	0.062	0.017	0.038	0.016	0.012	0.007	0.007

Note: ***, **, and * indicate the estimated coefficient was significant at the 1%, 5%, and 10% level, respectively.

Table A5.2. School-leaver model with the compounding effects variables

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
Female	0.051**	0.126***	0.097***	0.130***	−0.044***	0.064***	0.113***	−0.116***
	(2.441)	(6.376)	(4.654)	(4.91)	(3.339)	(2.893)	(2.999)	(2.712)
Age	0.009**	0.003	0.009**	0.029***	0.001	0.008*	0.011	0.026***
	(2.495)	(0.92)	(2.49)	(6.444)	(0.656)	(1.96)	(1.616)	(3.585)
On-Campus	0.079	0.052	0.053	0.087	0.092**	0.146**	0.041	0.127
	(1.355)	(0.833)	(0.849)	(1.177)	(2.535)	(2.21)	(0.406)	(1.034)
Part-Time Study	−0.032	−0.154***	0.025	−0.116*	0.073**	−0.087	−0.102	0.164*
	(0.639)	(3.007)	(0.51)	(1.923)	(2.525)	(1.584)	(1.162)	(1.716)
Low SES in Government School	−0.036	−0.025	−0.014	−0.082*	−0.069***	−0.166***	−0.099	−0.115
	(0.916)	(0.682)	(0.369)	(1.686)	(2.707)	(3.763)	(1.434)	(1.394)
Low SES in Independent School	−0.037	−0.007	0.054	0.02	−0.015	−0.086**	−0.028	−0.037
	(1.002)	(0.194)	(1.468)	(0.416)	(0.638)	(2.21)	(0.435)	(0.491)
Non-Low SES in Government School	−0.022	−0.047**	−0.01	−0.013	−0.048***	−0.036	−0.076**	−0.091**
	(1.048)	(2.335)	(0.482)	(0.467)	(3.518)	(1.592)	(1.971)	(2.015)
NESB	−0.049	0.027	0.121***	−0.262***	−0.035*	−0.084**	−0.123**	−0.03
	(1.528)	(0.942)	(4.292)	(6.363)	(1.83)	(2.489)	(2.197)	(0.468)
Rural or Remote	0.025	0.012	−0.003	−0.022	0.028	0.037	0.017	0.062
	(0.926)	(0.472)	(0.098)	(0.618)	(1.626)	(1.313)	(0.364)	(1.124)
Disability	0.003	−0.034	−0.067	0.205***	−0.198***	−0.069	−0.109	−0.171
	(0.045)	(0.595)	(0.984)	(2.759)	(4.142)	(0.88)	(0.754)	(1.001)

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
First in Family	−0.033	−0.017	0.032	−0.013	−0.025*	−0.091***	−0.038	−0.076*
	(1.509)	(0.823)	(1.484)	(0.456)	(1.873)	(3.885)	(0.969)	(1.687)
Natural and Physical Sciences	−0.045	0.04	−0.053	0.269***	−0.081***	0.067	−0.039	−0.06
	(1.01)	(0.992)	(1.206)	(5.056)	(2.909)	(1.452)	(0.472)	(0.66)
Information Technology	−0.182***	−0.074	−0.160**	0.375***	−0.111***	−0.102	−0.095	−0.237*
	(2.94)	(1.325)	(2.502)	(5.229)	(2.872)	(1.527)	(0.903)	(1.835)
Engineering and Related Technologies	−0.003	0.192***	−0.032	0.689***	0.042	0.131	0.358**	0.23
	(0.04)	(2.881)	(0.302)	(7.044)	(0.684)	(1.431)	(2.497)	(1.074)
Architecture and Building	0.004	0.099	0.017	0.273***	−0.008	−0.035	0.093	−0.142
	(0.06)	(1.632)	(0.277)	(3.713)	(0.218)	(0.554)	(0.974)	(1.285)
Agriculture, Environmental and Related Studies	−0.089	−0.134**	−0.109	0.351***	0.005	0.007	0.09	0.075
	(1.357)	(2.108)	(1.441)	(4.493)	(0.123)	(0.106)	(0.778)	(0.547)
Health	0.080***	0.250***	0.074***	0.201***	−0.018	0.050*	0.160***	−0.119**
	(3.156)	(10.259)	(3)	(6.273)	(1.175)	(1.831)	(3.501)	(2.273)
Education	0.104**	0.254***	0.071	0.485***	−0.036	0.077	0.219***	−0.031
	(2.308)	(6.069)	(1.58)	(8.85)	(1.242)	(1.536)	(2.579)	(0.314)
Society and Culture	0.013	0.094**	−0.004	0.221***	−0.011	0.05	0.11	−0.012
	(0.324)	(2.55)	(0.092)	(4.577)	(0.454)	(1.251)	(1.604)	(0.149)
Creative Arts	−0.154***	−0.359***	−0.194***	0.292***	−0.149***	−0.143***	0.004	−0.319***
	(3.028)	(6.84)	(3.702)	(4.939)	(4.568)	(2.673)	(0.041)	(3.174)
Food and Hospitality	0.261*	0.308*	0.028	−0.01	0.126	0.249*	0.047	0.918***

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
	(1.823)	(1.916)	(0.118)	(0.039)	(1.038)	(1.793)	(0.131)	(3.463)
Constant	4.449***	4.753***	3.563***	2.560***	2.142***	5.046***	6.545***	5.835***
	(44.537)	(49.043)	(36.582)	(20.874)	(34.718)	(47.601)	(37.141)	(29.358)
Observations	6,300	6,300	6,300	6,300	6,300	6,300	6,300	6,300
R-squared	0.014	0.065	0.021	0.041	0.019	0.015	0.010	0.011
R^2-adjusted	0.011	0.062	0.018	0.038	0.016	0.012	0.006	0.007

Note: ***, **, and * indicate the estimated coefficient was significant at the 1%, 5%, and 10% level, respectively.

Table A5.3. Results for first-year sample: School-leaver model with the compounding effects variables

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
Female	0.076***	0.150***	0.118***	0.118***	−0.043***	0.067***	0.172***	−0.067
	(3.093)	(6.603)	(4.858)	(3.838)	(2.744)	(2.644)	(3.874)	(1.325)
Age	0.012***	0.006	0.014***	0.031***	0.001	0.008	0.016**	0.026***
	(2.719)	(1.578)	(3.245)	(5.534)	(0.238)	(1.621)	(1.968)	(2.915)
On-Campus	0.062	0.012	0.037	0.008	0.062	0.112	0.072	0.135
	(0.946)	(0.164)	(0.523)	(0.093)	(1.56)	(1.571)	(0.62)	(0.947)
Part-Time Study	−0.06	−0.118**	0.045	−0.219***	0.042	−0.075	−0.143	0.145
	(0.996)	(1.993)	(0.798)	(2.993)	(1.224)	(1.167)	(1.334)	(1.23)
Low SES in Government School	0.007	0.01	−0.017	−0.034	−0.063**	−0.119**	−0.07	−0.139
	(0.159)	(0.243)	(0.36)	(0.585)	(2.06)	(2.28)	(0.87)	(1.366)
Low SES in Independent School	−0.031	−0.003	0.053	0.083	−0.034	−0.071	0.035	−0.026
	(0.716)	(0.066)	(1.235)	(1.499)	(1.184)	(1.593)	(0.483)	(0.283)
Non-Low SES in Government School	−0.013	−0.034	−0.026	−0.031	−0.057***	−0.035	−0.124***	−0.130**
	(0.541)	(1.447)	(1.026)	(0.96)	(3.561)	(1.331)	(2.716)	(2.45)
NESB	−0.089**	0.01	0.094***	−0.300***	−0.039	−0.095**	−0.161**	−0.026
	(2.235)	(0.284)	(2.645)	(5.841)	(1.612)	(2.212)	(2.277)	(0.321)
Rural or Remote	0.02	0.018	0	−0.023	0.023	0.036	−0.005	0.041
	(0.663)	(0.629)	(0)	(0.589)	(1.212)	(1.138)	(0.093)	(0.654)
Disability	−0.046	−0.048	−0.105	0.307***	−0.181***	−0.133	−0.056	−0.165
	(0.531)	(0.733)	(1.275)	(3.561)	(3.336)	(1.431)	(0.34)	(0.798)
First in Family	−0.049*	−0.019	0.024	−0.01	−0.035**	−0.107***	−0.033	−0.105*
	(1.886)	(0.78)	(0.916)	(0.296)	(2.202)	(3.972)	(0.732)	(1.951)
Natural and Physical Sciences	−0.059	0.017	−0.066	0.248***	−0.107***	0.013	−0.07	−0.053
	(1.114)	(0.346)	(1.246)	(3.866)	(3.244)	(0.241)	(0.68)	(0.474)
Information Technology	−0.126*	−0.089	−0.200***	0.370***	−0.078*	−0.044	−0.081	−0.146
	(1.776)	(1.452)	(2.637)	(4.323)	(1.691)	(0.592)	(0.722)	(0.995)
Engineering and Related Technologies	−0.008	0.032	−0.437*	0.408*	−0.2	−0.104	0.27	−0.052

	(0.05)	(0.225)	(1.661)	(1.832)	(1.264)	(0.695)	(1.114)	(0.095)
Architecture and Building	0.008	0.077	−0.017	0.283***	−0.002	−0.08	0.085	−0.177
	(0.117)	(1.215)	(0.257)	(3.552)	(0.053)	(1.119)	(0.799)	(1.475)
Agriculture, Environmental and Related Studies	−0.178**	−0.245***	−0.146	0.293***	−0.027	−0.07	0.064	0.028
	(2.421)	(3.263)	(1.639)	(3.299)	(0.506)	(0.986)	(0.492)	(0.18)
Health	0.077***	0.235***	0.074**	0.173***	−0.024	0.04	0.163***	−0.105*
	(2.637)	(8.508)	(2.563)	(4.642)	(1.302)	(1.274)	(3.068)	(1.716)
Education	0.100**	0.225***	0.042	0.433***	−0.041	0.054	0.190**	−0.073
	(2.066)	(5)	(0.856)	(7.331)	(1.333)	(1.014)	(2.089)	(0.677)
Society and Culture	−0.001	0.063	−0.015	0.162***	−0.017	0.017	0.051	−0.014
	(0.03)	(1.561)	(0.347)	(3.002)	(0.615)	(0.381)	(0.657)	(0.154)
Creative Arts	−0.158**	−0.416***	−0.183***	0.282***	−0.151***	−0.179***	−0.104	−0.382***
	(2.559)	(6.62)	(2.907)	(3.996)	(3.867)	(2.862)	(0.934)	(3.059)
Food and Hospitality	0.286*	0.268	0.006	0.058	0.124	0.259*	0.043	0.976***
	(1.859)	(1.536)	(0.022)	(0.234)	(0.928)	(1.693)	(0.111)	(3.428)
Constant	4.411***	4.735***	3.480***	2.635***	2.199***	5.092***	6.413***	5.830***
	(38.388)	(41.795)	(29.912)	(17.788)	(30.436)	(40.761)	(30.332)	(24.504)
Observations	4,644	4,644	4,644	4,644	4,644	4,644	4,644	4,644
R-squared	0.017	0.071	0.025	0.04	0.018	0.015	0.015	0.01
R^2-adjusted	0.012	0.067	0.021	0.036	0.014	0.010	0.010	0.006

Note: Robust *t* statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5.4. Results from total sample: alternative specification including variables for Low SES and School Type compounding effects and Australian Tertiary Admission Rank (ATAR) variables

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
ATAR	0.002	0.002*	−0.002*	0.005***	0.003***	0.012***	−0.006**	−0.006**
	(1.349)	(1.859)	(1.801)	(3.17)	(3.771)	(9.337)	(2.553)	(2.195)
Female	0.043*	0.109***	0.084***	0.125***	−0.050***	0.037	0.108**	−0.122**
	(1.828)	(4.963)	(3.596)	(4.228)	(3.405)	(1.567)	(2.575)	(2.55)
Age	0.003	0	0.008	0.039***	0	0.009	−0.004	0.014
	(0.582)	(0.071)	(1.528)	(5.707)	(0.104)	(1.638)	(0.462)	(1.384)
On-Campus	0	0.008	0.087	0.048	0.073	0.144*	0.029	0.089
	(0.004)	(0.1)	(1.081)	(0.531)	(1.529)	(1.789)	(0.217)	(0.569)
Part-Time Study	−0.044	−0.111*	0.042	−0.127	0.083**	0.003	−0.152	0.114
	(0.692)	(1.735)	(0.675)	(1.621)	(2.129)	(0.047)	(1.331)	(0.936)
Low SES in Government School	−0.01	−0.015	−0.044	−0.054	−0.045	−0.094*	−0.132	−0.159
	(0.2)	(0.334)	(0.901)	(0.93)	(1.362)	(1.794)	(1.543)	(1.546)
Low SES in Independent School	−0.056	−0.008	0.036	0.077	−0.012	−0.049	−0.042	−0.073
	(1.382)	(0.203)	(0.892)	(1.463)	(0.427)	(1.171)	(0.599)	(0.867)
Non-Low SES in Government School	−0.034	−0.059***	−0.03	−0.005	−0.045***	−0.037	−0.07	−0.101**
	(1.411)	(2.617)	(1.266)	(0.168)	(2.975)	(1.509)	(1.622)	(2.017)
NESB	−0.074**	0.013	0.111***	−0.271***	−0.060***	−0.115***	−0.122*	−0.023
	(2.093)	(0.393)	(3.46)	(5.905)	(2.749)	(3.137)	(1.935)	(0.322)
Rural or Remote	0.019	0.005	−0.007	−0.034	0.027	0.001	0.011	0.041
	(0.592)	(0.191)	(0.227)	(0.844)	(1.361)	(0.03)	(0.206)	(0.662)
Disability	0.114	0.024	−0.046	0.229***	−0.183***	0.021	0.055	−0.011
	(1.445)	(0.349)	(0.529)	(2.598)	(3.219)	(0.235)	(0.333)	(0.056)
First in Family	−0.025	−0.024	0.025	−0.022	−0.024	−0.070***	−0.058	−0.073
	(0.995)	(1.037)	(1.005)	(0.678)	(1.529)	(2.732)	(1.291)	(1.412)

Natural and Physical Sciences	−0.05	0.004	−0.031	0.200***	−0.090***	-0.003	−0.065	−0.076
	(1.053)	(0.079)	(0.656)	(3.479)	(2.987)	(0.067)	(0.725)	(0.771)
Information Technology	−0.153**	−0.099	−0.143**	0.352***	−0.122***	−0.179**	−0.089	−0.187
	(2.361)	(1.633)	(1.983)	(4.593)	(2.767)	(2.463)	(0.777)	(1.346)
Engineering and Related Technologies	0.034	0.203***	−0.023	0.621***	0.025	−0.006	0.400***	0.249
	(0.393)	(3.08)	(0.196)	(6.612)	(0.379)	(0.063)	(2.68)	(1.064)
Architecture and Building	0.032	0.102	0.016	0.228***	0.025	−0.042	0.076	−0.194
	(0.444)	(1.517)	(0.221)	(2.615)	(0.571)	(0.597)	(0.67)	(1.471)
Agriculture, Environmental and Related Studies	−0.124*	−0.160**	−0.071	0.296***	−0.028	−0.054	0.006	−0.025
	(1.684)	(2.354)	(0.819)	(3.29)	(0.589)	(0.71)	(0.046)	(0.163)
Health	0.080***	0.236***	0.103***	0.147***	−0.031*	−0.017	0.178***	−0.094
	(2.753)	(8.419)	(3.556)	(4.008)	(1.743)	(0.572)	(3.425)	(1.579)
Education	0.136**	0.276***	0.087	0.418***	−0.017	0.054	0.172	−0.014
	(2.536)	(5.528)	(1.495)	(6.334)	(0.477)	(0.919)	(1.615)	(0.115)
Society and Culture	0.018	0.085**	0.01	0.174***	−0.008	0.031	0.081	−0.049
	(0.421)	(2.083)	(0.229)	(3.23)	(0.303)	(0.733)	(1.054)	(0.556)
Creative Arts	−0.115*	−0.334***	−0.140**	0.259***	−0.135***	−0.09	−0.007	−0.353***
	(1.924)	(5.53)	(2.343)	(3.571)	(3.432)	(1.523)	(0.069)	(3.02)
Food and Hospitality	0.228	0.331**	0.103	−0.108	0.087	0.172	0.279	1.057***
	(1.346)	(2.284)	(0.42)	(0.359)	(0.705)	(1.147)	(0.774)	(3.88)
Constant	4.505***	4.692***	3.726***	2.039***	1.957***	4.092***	7.320***	6.599***
	(27.624)	(30.159)	(22.831)	(9.885)	(19.12)	(24.604)	(25.294)	(19.918)
Observations	5,014	5,014	5,014	5,014	5,014	5,014	5,014	5,014
R-squared	0.013	0.061	0.018	0.039	0.021	0.030	0.011	0.010
R^2-adjusted	0.009	0.057	0.014	0.035	0.017	0.026	0.007	0.005

Note: Robust *t* statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5.5. School-leaver model with the compounding effects variables and Australian Tertiary Admission Rank (ATAR) variable

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
ATAR	0.002	0.002*	−0.002*	0.005***	0.003***	0.012***	−0.006**	−0.006**
	(1.363)	(1.769)	(1.844)	(3.153)	(3.761)	(9.473)	(2.527)	(2.173)
Female	0.043*	0.109***	0.084***	0.125***	−0.051***	0.037	0.108**	−0.123**
	(1.818)	(4.94)	(3.585)	(4.226)	(3.427)	(1.564)	(2.567)	(2.562)
Age	0.003	0	0.007	0.038***	−0.001	0.009	−0.004	0.013
	(0.567)	(0.023)	(1.486)	(5.718)	(0.171)	(1.589)	(0.512)	(1.326)
On-Campus	−0.003	0.006	0.091	0.055	0.074	0.150*	0.036	0.097
	(0.036)	(0.08)	(1.128)	(0.616)	(1.568)	(1.846)	(0.272)	(0.619)
Part-Time Study	−0.04	−0.108*	0.042	−0.130*	0.086**	0.008	−0.145	0.124
	(0.626)	(1.691)	(0.676)	(1.66)	(2.204)	(0.127)	(1.274)	(1.017)
NESB	−0.082**	0.002	0.104***	−0.274***	−0.071***	−0.129***	−0.143**	−0.052
	(2.346)	(0.075)	(3.302)	(6.04)	(3.294)	(3.563)	(2.332)	(0.733)
Rural or Remote	0.01	0.005	−0.002	−0.023	0.025	−0.008	0.003	0.028
	(0.335)	(0.195)	(0.056)	(0.589)	(1.287)	(0.27)	(0.052)	(0.46)
Disability	0.117	0.027	−0.043	0.230***	−0.179***	0.027	0.064	0
	(1.477)	(0.388)	(0.502)	(2.62)	(3.159)	(0.303)	(0.386)	(0.002)
First in Family	−0.025	−0.023	0.025	−0.023	−0.025	−0.073***	−0.062	−0.077
	(1.002)	(1.01)	(0.984)	(0.713)	(1.575)	(2.841)	(1.366)	(1.491)
Natural and Physical Sciences	−0.057	−0.003	−0.034	0.200***	−0.098***	−0.016	−0.083	−0.1
	(1.202)	(0.064)	(0.735)	(3.498)	(3.245)	(0.336)	(0.929)	(1.026)
Information Technology	−0.155**	−0.104*	−0.148**	0.348***	−0.127***	−0.184**	−0.099	−0.201

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
	(2.39)	(1.718)	(2.062)	(4.534)	(2.883)	(2.552)	(0.868)	(1.442)
Engineering and Related Technologies	0.031	0.199***	−0.025	0.621***	0.021	−0.01	0.394***	0.24
	(0.355)	(3.005)	(0.214)	(6.626)	(0.325)	(0.104)	(2.648)	(1.024)
Architecture and Building	0.033	0.103	0.014	0.225***	0.024	−0.044	0.073	−0.197
	(0.46)	(1.526)	(0.198)	(2.579)	(0.557)	(0.625)	(0.647)	(1.492)
Agriculture, Environmental and Related Studies	−0.130*	−0.168**	−0.074	0.297***	−0.035	−0.059	−0.004	−0.039
	(1.765)	(2.483)	(0.861)	(3.312)	(0.72)	(0.783)	(0.03)	(0.261)
Health	0.077***	0.232***	0.099***	0.145***	−0.036**	−0.024	0.168***	−0.107*
	(2.66)	(8.265)	(3.433)	(3.957)	(2.019)	(0.785)	(3.237)	(1.812)
Education	0.132**	0.270***	0.083	0.416***	−0.023	0.048	0.161	−0.029
	(2.465)	(5.44)	(1.435)	(6.301)	(0.63)	(0.805)	(1.512)	(0.236)
Society and Culture	0.016	0.081**	0.007	0.172***	−0.012	0.026	0.073	−0.06
	(0.36)	(1.982)	(0.162)	(3.208)	(0.451)	(0.624)	(0.951)	(0.674)
Creative Arts	−0.117**	−0.337***	−0.143**	0.258***	−0.138***	−0.093	−0.013	−0.361***
	(1.961)	(5.59)	(2.385)	(3.554)	(3.523)	(1.58)	(0.129)	(3.082)
Food and Hospitality	0.219	0.322**	0.099	−0.106	0.078	0.16	0.262	1.032***
	(1.299)	(2.145)	(0.402)	(0.345)	(0.624)	(1.075)	(0.717)	(3.714)
Constant	4.496***	4.691***	3.724***	2.041***	1.949***	4.067***	7.289***	6.560***
	(27.544)	(30.215)	(22.861)	(9.958)	(19.056)	(24.445)	(25.336)	(19.872)
Observations	5,014	5,014	5,014	5,014	5,014	5,014	5,014	5,014
R-squared	0.013	0.06	0.017	0.039	0.019	0.029	0.01	0.009

Variables	Self-Awareness	Program Awareness	Commitment	Reconsideration With Commitment	Self-Esteem	Academic Self-Efficacy	Career Exploration	Occupational Mobility
R^2-adjusted	0.009	0.056	0.014	0.035	0.015	0.025	0.006	0.005

Note: Robust *t* statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5.6: Weighted average marks (WAM) model: school-leaver sample and SES/school subsamples

Variables	(i) Total sample (all school leavers)	School leavers by SES/school			
		(ii) Low SES & Government School	(iii) Low SES & Independent School	(iv) Non-Low SES & Government School	(v) Non-Low SES & Independent School
ATAR	0.677***	0.771***	0.806***	0.663***	0.630***
	(26.264)	(7.341)	(8.269)	(16.29)	(16.934)
Self-Awareness	−0.179	−1.093	1.028	−0.559	−0.04
	(0.412)	(0.601)	(0.624)	(0.867)	(0.062)
Program Awareness	0.491	−1.067	0.671	0.425	0.504
	(1.176)	(0.537)	(0.355)	(0.687)	(0.841)
Commitment	−0.025	0.497	−0.71	0.353	−0.263
	(0.079)	(0.426)	(0.55)	(0.732)	(0.552)
Reconsideration with Commitment	0.628***	−0.165	1.319	0.533	0.740**
	(2.946)	(0.173)	(1.635)	(1.541)	(2.44)
Self-Esteem	0.495	1.541	−0.344	0.897	0.478
	(0.956)	(0.807)	(0.177)	(1.193)	(0.611)
Academic Self-Efficacy	1.393***	−0.53	0.34	1.119*	2.024***
	(3.624)	(0.335)	(0.198)	(1.83)	(3.875)
Career Exploration	0.201	−0.369	0.457	0.717*	−0.141
	(0.855)	(0.339)	(0.489)	(1.729)	(0.455)
Occupational Mobility	−0.562***	−0.362	0.622	−0.774***	−0.644***
	(3.325)	(0.52)	(0.826)	(2.731)	(2.828)
Female	2.327***	0.986	4.073**	1.603**	2.922***
	(4.903)	(0.495)	(2.167)	(2.027)	(4.508)
Age	−0.012	−0.059	0.441	−0.122	−0.017
	(0.113)	(0.183)	(1.245)	(0.913)	(0.1)
On-Campus	14.849***	16.138***	24.281**	11.112**	16.346***
	(5.078)	(2.607)	(2.048)	(2.26)	(3.834)

Part-Time Study	−2.427	12.263***	2.079	−8.410***	−1.384
	(1.566)	(2.742)	(0.427)	(2.792)	(0.718)
Low SES	−0.533	—	—	—	—
	(0.837)				
NESB	0.405	0.816	0.478	0.423	0.125
	(0.62)	(0.335)	(0.238)	(0.507)	(0.095)
Rural or Remote	−0.172	3.238	−1.964	0.691	−0.927
	(0.272)	(1.595)	(1.172)	(0.711)	(0.89)
Disability	−0.17	4.72	−11.393*	1.399	−0.022
	(0.131)	(0.386)	(1.832)	(0.669)	(0.014)
First in Family	−1.188**	−4.674**	−1.233	−0.121	−1.350*
	(2.246)	(2.558)	(0.683)	(0.146)	(1.701)
Natural and Physical Sciences	−0.087	−4.876	−1.203	1.969	−0.083
	(0.087)	(1.089)	(0.355)	(1.201)	(0.057)
Information Technology	−3.930*	−3.543	−18.301*	−0.953	−4.156
	(1.956)	(0.504)	(1.864)	(0.28)	(1.543)
Engineering and Related Technologies	−1.222	−13.734	−0.783	0.191	−1.137
	(0.758)	(0.862)	(0.093)	(0.105)	(0.503)
Architecture and Building	−3.000*	−2.251	4.517	−8.394**	−1.443
	(1.778)	(0.46)	(0.825)	(2.06)	(0.742)
Agriculture, Environmental and Related Studies	−0.346	5.81	−10.535	0.278	1.159
	(0.178)	(1.018)	(1.063)	(0.112)	(0.413)
Health	0.886	0.023	−0.397	1.837	0.536
	(1.437)	(0.007)	(0.186)	(1.629)	(0.666)
Education	−2.026	3.843	−1.475	−1.659	−3.383*
	(1.587)	(0.765)	(0.33)	(0.767)	(1.871)
Society and Culture	−1.858*	−2.535	−2.541	−1.145	−1.703
	(1.937)	(0.435)	(0.703)	(0.711)	(1.321)
Creative Arts	0.347	−1.195	5.105	2.117	−1.438
	(0.326)	(0.158)	(1.503)	(1.442)	(0.917)
Food and Hospitality	6.167	25.890***	6.168***	2.023	4.107

	(1.194)	(5.491)	(2.76)	(0.335)	(0.294)
Constant	−15.387***	0.958	−52.244***	−9.282	−13.693**
	(3.378)	(0.071)	(3.344)	(1.252)	(2.035)
Observations	5,014	294	424	1,710	2,586
R-squared	0.229	0.38	0.315	0.236	0.218
R^2-adjusted	0.224	0.317	0.268	0.224	0.209

Note: Robust *t* statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix 6a: Focus group instrument for tertiary students

Introduction

Thanks so much for agreeing to talk with us. It's really important in these projects to hear the student voice. We want this to be an informal discussion, so please speak whenever you want to, and of course, help yourself to food.

In our project we're trying to understand the careers and study pathways advice that people get while they're at school — where do they get advice, what were the gaps, and does the advice we get differ according to whether we're in a wealthy environment or not?

One of the things we're interested in is whether advice and resources differ according to school and location. To start, can I ask you to tell us your name and what you're studying, and also the name of the school you attended and the suburb you lived in?

I'll start if you like. My name is xxx and I work at Curtin as a xxx. I attended xxx school / a school in xxx. (If not in WA, ask: what type of school or suburb was it – would you describe it as a wealthy suburb, a low SES-suburb…?)

Did you take an ATAR or non ATAR pathway to uni.? ATAR/non-ATAR

How many of you have family members who have studied at TAFE?

Uni?

Studied a trade?

Gone straight from school to a job?

Thinking about your decision-making

How did you make the decision to take (course of study)?

Are you happy that it was the right decision for you?

Would you change your course of study if you could? Yes/no
If yes, why?

Thinking about what you have experienced so far

Do you see a difference in the advice given to students based on whether they might take an ATAR or non-ATAR pathway?

Prompts: is there a difference in (the)

- (frequency of advice)
- (type of advice)
- (amount of information)
- (who gives advice)
- (opportunities to find out more).

How much advice have you received about training and career options once you leave school?

What have you been told? (Silence question — give them time to think)

Does the advice you have received make sense — has anything been confusing?

What has been most useful?

What type of advice have you received about portfolio/alternative pathways? These are other ways to access further education.

What do consider a career to be?

What are the most important things you're considering to make decisions about what to do next?

Thinking about your access to careers and study information,

Do you have access to a drop-in centre for careers advice at your school? (If no, move to next question). If yes:

- Who uses it?
- Why?
- How is it useful?
- In what ways is it not useful?

During the year, which career-related things have you taken part in at your school?

- Prompts if not forthcoming:
- listened to a talk from a guidance officer,
- received handouts / information,
- spoke individually to someone about your career path

Who have you spoken to regarding your future career choices?

Did you contact them yourself?

If yes: Why did you contact them?

Which source of careers information and advice was the most useful to you?

Why was it most useful?

Which source of careers information and advice has been the least useful?

Why wasn't it useful?

Who hasn't accessed any of the services at your school?

If yes: Can you give your reasons why?

In which (school) years did you receive careers advice?

What year were you in when you first received careers advice?

When do you think it should be provided?

Why do you say that?

What careers services have you interacted with?

Prompts:

- educational institution (i.e., at school)
- government agency such as Centrelink
- employer program
- private provider
- open day
- other

If none: Why didn't you access any careers services?

If examples: How did you access these careers services?

How easy was it to access them?

How well prepared (informed) do you feel, to plan for what you will do after you finish school? Let's use a scale of 1–5, where 1 = *not at all informed*, 3 = *quite informed* and 5 = *completely informed*

Thinking about where you are now, what advice do you need?

Can you get that advice anywhere at the moment? (Expect dunno, so prompt)

Prompts:

- careers services aren't needed
- they're not useful or appropriate
- they're not available
- other

What would you find useful in order to be better prepared?

Prompts:

- information on which subjects to study at school/university
- Work experience or “on the job” training
- Information or tools to assess career options etc.

Thinking about what you would like to do in the future, how much have other people influenced your thinking?

Prompts:

- teacher
- parents/family
- careers advisor
- friends
- media
- other

Who has influenced you most?

Who do you think has had the most influence over your career choices?

Prompts:

- teacher
- parents/family
- careers advisor
- friends
- media
- other

Have your perceptions of your career path changed over time? If yes: Why do you think this is?

Academic self-efficacy activity for uni. students.

1. Looking at these skills (Figure A6.1), can you talk about how and when you developed them?
    a. How do you feel that you compared to other students when you first started at uni.?
    b. Why do you think there were differences?

Ooo

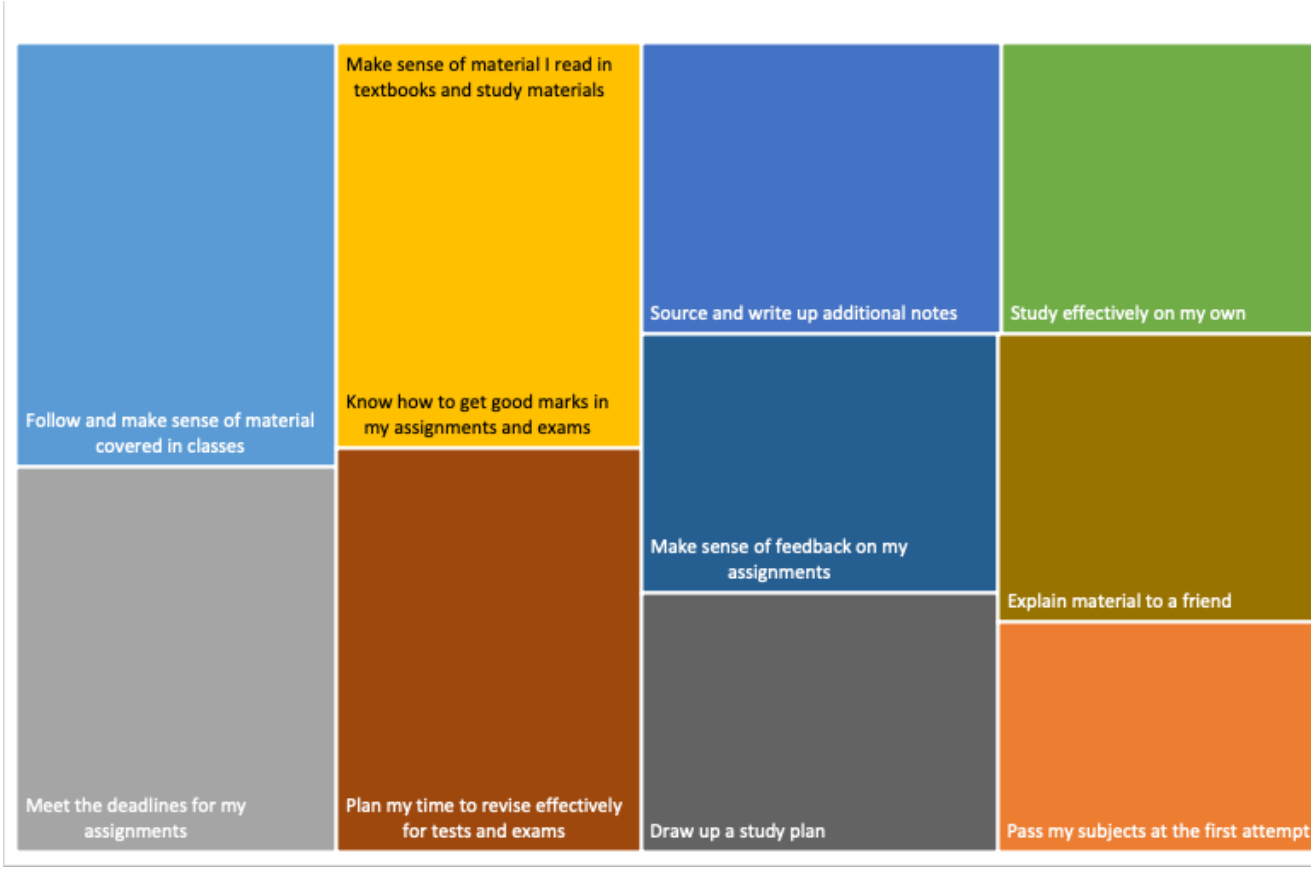


Figure A6.1. A visual representation of academic self-efficacy. Students plotted their confidence using green (confident), orange (unsure or developing) and red (not confident) stickers

Is there anything else you'd like to say about your career and study decision-making? (Offer email contact)

Appendix 6b: Focus Group Instrument for Secondary Students

Ice-breaker

Students plot their future aspirations and goals along a visual "river" in which each bank represents what they like or want (represented by a smiley face) or what they hope to avoid (represented on the opposite bank with a sad face).

Are you on an ATAR or non-ATAR pathway at the moment? ATAR/non-ATAR

How many of you have family members who have studied at TAFE?

Uni?

Studied a trade?

Gone straight from school to a job?

Thinking about your decision-making

How did you make the decision to take (course of study)?

Are you happy that it was the right decision for you?

Would you change your course of study if you could? Yes/no
If yes, why?

Thinking about what you have experienced so far

Do you see a difference in the advice given to students based on whether they might take an ATAR or non-ATAR pathway?

Prompts: Is there a difference in (the)

- (frequency of advice)
- (type of advice)
- (amount of information)
- (who gives advice)
- (opportunities to find out more).

How much advice have you received about training and career options once you leave school?

What have you been told? (Silence question — give them time to think)

Does the advice you have received make sense — has anything been confusing?

What has been most useful?

What type of advice have you received about portfolio/alternative pathways? These are other ways to access further
education.

What do consider a career to be?

What are the most important things you're considering to make decisions about what to do next?

Thinking about your access to careers and study information,

Do you have access to a drop-in centre for careers advice at your school? (If no, move to next question). If yes:

- Who uses it?
- Why?
- How is it useful?
- In what ways is it not useful?

During the year, which career-related things have you taken part in at your school?

- Prompts if not forthcoming:
- listened to a talk from a guidance officer,
- received handouts / information,
- spoke individually to someone about your career path

Who have you spoken to regarding your future career choices?

Did you contact them yourself?

If yes: Why did you contact them?

Which source of careers information and advice was the most useful to you?

Why was it most useful?

Which source of careers information and advice has been the least useful?

Why wasn't it useful?

Who hasn't accessed any of the services at your school?

If yes: Can you give your reasons why?

In which (school) years did you receive careers advice?

What year were you in when you first received careers advice?

When do you think it should be provided?

Why do you say that?

What careers services have you interacted with?

Prompts:

- educational institution (i.e., at school)
- government agency such as Centrelink
- employer program
- private provider
- open day
- other.

If none: Why didn't you access any careers services?

If examples: How did you access these careers services?

How easy was it to access them?

How well prepared (informed) do you feel, to plan for what you will do after you finish school? Let's use a scale of 1–5, where 1 = *not at all informed*, 3 = *quite informed* and 5 = *completely informed.*

Thinking about where you are now, what advice do you need?

Can you get that advice anywhere at the moment? (Expect "I don't know", so prompt)

Prompts:

- careers services aren't needed
- they're not useful or appropriate
- they're not available
- other

What would you find useful in order to be better prepared?

Prompts:

- information on which subjects to study at school/university
- Work experience or 'on the job' training
- Information or tools to assess career options etc.

Thinking about what you would like to do in the future, how much have other people influenced your thinking?

Prompts:

- teacher
- parents/family
- careers advisor
- friends
- media
- other.

Who has influenced you most?

Who do you think has had the most influence over your career choices?

Prompts:

- teacher
- parents/family
- careers advisor
- friends
- media
- other.

Have your perceptions of your career path changed over time? If yes: Why do you think this
is?

Career Options

For non-ATAR pathway students

What sort of career options have been provided as examples (hair dressing/apprenticeships/electrical
etc)?

Do you think the advice you have been given is different depending on your gender?

For ATAR pathway students

What sort of career options have been provided as examples (hair dressing/apprenticeships/electrical
etc)?

Do you think the advice you have been given is different depending on your gender?

Is there anything else you'd like to say about your career and study decision-making?

Appendix 7: Demographic profile of focus group participants

Table A7.1 Focus group participants by state and area classification

Focus Group Number	Total Participants	Rural/Remote	Regional	Metropolitan	International	WA	SA	Vic	NSW
1	4	4	0	0	0	0	1		3
2	1	0	1	0	0	0	0	1	0
3	1	1	0	0	0	0	0	1	0
4	5	0	0	5	0	5	0	0	0
5	2	0	2	0	0	0	1	1	0
6	6	0	6	0	0	6	0	0	0
7	5	0	0	5	0	5	0	0	0
8	6	0	1	3	2	4	0	0	0
9	6	0	0	6	0	6	0	0	0
10	6	0	6	0	0	6	0	0	0
11	6	2	0	4	0	6	0	0	0
12	5	0	0	5	0	5	0	0	0
13	1	0	0	1	0	1	0	0	0
Total	54	7	16	29	2	44	2	3	3

Table A7.2 Focus group participants by SES and study pathway

Focus Group Number	Total Participants	Low SES	Middle SES	High SES	Direct Uni (ATAR/VCE)	VET/Alt	General	Too Early	International
1	4	4	0	0	4	0	0	0	0
2	1	1	0	0	1	0	0	0	0
3	1	1	0	0	1	0	0	0	0
4	5	5	0	0	0	3	2	0	0
5	2	1	0	1	2	0	0	0	0
6	6	6	0	0	1	5	0	0	0
7	5	2	3	0	2	3	0	0	0
8	6	0	5	1	3	1	0	0	2
9	6	0	6	0	0	1	0	5	0
10	6	6	0	0	0	0	6	0	0
11	6	2	4	0	4	2	0	0	0
12	5	5	0	0	0	0	0	5	0
13	1	0	1	0	1	0	0	0	0
Total	54	33	19	2	19	15	8	10	2

Table A7.3 Focus group participants by gender, school type, and educational sector

Focus Group Number	Total Participants	Male	Female	Public	Private	Catholic	International	Secondary	Tertiary
1	4	1	3	4	0	0	0	4	0
2	1	1	0	1	0	0	0	1	0
3	1	0	1	1	0	0	0	1	0
4	5	3	2	5	0	0	0	5	0
5	2	0	2	1	0	1	0	2	0
6	6	0	6	0	0	6	0	6	0
7	5	3	2	2	3	0	0	0	5
8	6	2	4	2	2	0	2	0	6
9	6	2	4	0	0	6	0	0	6
10	6	0	6	0	0	6	0	6	0
11	6	1	5	2	4	0	0	0	6
12	5	0	5	5	0	0	0	5	0
13	1	0	1	1	0	0	0	0	1
Total	54	13	41	24	9	19	2	30	24