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Career Advice in Australian Secondary Schools: Use and Usefulness

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Longitudinal Surveys of Australian Youth

Research Report 53

Career Advice in Australian Secondary Schools: Use and Usefulness

Sheldon Rothman
Kylie Hillman

May 2008

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EXECUTIVE SUMMARY

This report examines young people's participation in career advice activities while at school and their perceptions of the usefulness of the advice they receive. The data are from the 2003 15 year-old cohort of the Longitudinal Surveys of Australian Youth (LSAY). Most members of this LSAY Y03 cohort were in Year 10 in 2003. The present report examines how much career advice students accessed in Years 10, 11 and 12 across three years of data collection (2003–2005). A smaller group of the cohort is followed each year; this group was in Year 10 in 2003, Year 11 in 2004, and Year 12 in 2005. For this group of more than 5000 young people, analyses were conducted to determine what influences their perceptions of the usefulness of career advice while at school.

Four major questions guide this report:

1. How widespread is the provision of career advice in Australian schools?

2. How useful do students in Australian schools find this advice, and what types of advice appear to be most useful?

3. Are there some types of student who find career advice more useful?

4. Is there a relationship between perceptions of career advice and school-based measures?

Main findings

Participation in career advice activities

All students in the LSAY Y03 cohort participated in at least one type of career advice activity across Years 10, 11 and 12. Most activity occurred in Year 10, when 99 per cent of students accessed at least one activity. On average, Year 10 and Year 12 students reported accessing five different types of activity, and Year 11 students reported four out of seven selected activities.

There were small differences across States and Territories, with 97 per cent of students in the Australian Capital Territory reporting some type of career advice activity in Year 10 and nearly all students in New South Wales and Victoria reporting activity. By Year 12, participation ranged from 97 to 99 per cent of students. There were no differences in participation between school sectors in Year 10 or in Year 12; in Year 11, however, the proportion of government school students accessing at least one career advice activity (94%) was lower than in other sectors.

Types of career advice activity

The most common type of career advice activity across Years 10, 11 and 12 was the distribution of written material and handouts. In Year 10, 95 per cent of students received such material. This was followed by a talk from the school's career advisor, with 87 per cent of students reporting this activity.

More than one-half of Year 10 students (54%) reported having a talk from a representative of a TAFE institution or a university. By contrast, 76 per cent of Year 12 students reported this activity. During that same period, employer representatives spoke to 54 per cent of Year 10 students and 50 per cent of students in Year 12.

The most common grouping of activities included a talk from the school's career advisor, written materials, an individual session with the career advisor and—in Year 10—group discussion.

Perceptions of the usefulness of career advice

Members of the LSAY Y03 cohort were generally positive about the value of the career advice they received at school, although some types of advice were seen as more useful than others. In Years 10, 11 and 12, an individual conversation with the career advisor was perceived as the most useful. For example, in Year 10, 60 per cent of students stated the conversation was 'very useful'. Group discussion was seen as the least useful at all three year levels.

Relationships between perceptions of usefulness and student background and school-based factors

The relationship between how useful cohort members perceived career advice at school and a number of background factors highlighted some significant differences, but the overall influence of these factors was extremely small. Gender and socioeconomic status had small, significant influences on perceptions of usefulness, but explained less than 1 per cent of the variation in usefulness scores.

Some school-based factors also had an influence on how useful students found career advice, particularly those related to school climate. In addition, cohort members who found career advice useful also reported that they were influenced by their teachers and career advisors when considering the type of work they would like to do after school.

Academic achievement—as measured by students' performance on PISA tests in mathematical literacy, reading literacy, scientific literacy and problem-solving skills—was statistically significant, with lower-achieving students reporting that career advice was more useful, although the contribution of this factor was very small.

One of the strongest associations was between perceptions of the usefulness of career advice and the number of career advice activities accessed during the year. As young people participated in more activities, they found career advice overall to be more useful.

There was very little difference between schools in students' perception of the usefulness of career advice. Nearly all of the variation—and only a small proportion of that variation could be accounted for—was because of differences between students.

Implications

The general lack of differences in students' perceptions of the usefulness of career advice suggests that career advice is delivered to students equitably across schools and within schools. In other words, students believe that the career advice they receive at school meets their particular needs. Regardless of background, students see career advice as useful. This is particularly important for young people in communities that may be disadvantaged by location, social standing or economic situation.

Two important groups of students perceived career advice more favourably than did other students. There was a small but statistically significant relationship between lower achievement scores and more positive comments about the usefulness of career advice. Young people who were unsure about whether they would complete Year 12 also had more positive comments about career advice. This indicates that career advice programs are valued by young people who are more vulnerable when making the transition from school, and that career advisors should continue to provide support to these young people.

A positive school climate is related to positive perceptions of the usefulness of career advice. It was not possible, however, to determine if positive comments about career advice are additional to school climate, or if the positive school climate is because the career advice program is integral to the general climate of the school.

A school's career advice program, as part of its larger career education program, needs to encompass as many career advice activities as possible. Young people appear to appreciate a wider variety of activities in their career advice program, as it may provide them with more opportunities to find a career they wish to pursue.

Career Advice in Australian Secondary Schools: Use and Usefulness

1. INTRODUCTION

Changes in participation in education

Between 1980 and 2000, the apparent retention rate in Australian secondary schools more than doubled, from 34.5 per cent to 72.3 per cent, indicating that more young people were remaining at school to complete Year 12. With more people completing Year 12, enrolments in the tertiary education sector also rose. During that same period, the number of 15-to-19 year-olds commencing in higher education nearly doubled, from 96 000 to 189 000. Between 1991 and 2000, enrolments in vocational education and training (VET) institutions increased by 77 per cent; among 15-to-19 year-olds, participation in VET grew from 18.7 per cent in 1991 to 28.5 per cent in 2000.

The increases seen over the 1980s and 1990s have not been sustained in more recent years. The school apparent retention rate peaked in 1992 at 77.1 per cent and has been as low as 71.3 per cent. In 2005 that rate was 75.3 per cent. Enrolments in VET institutions decreased by 4 per cent between 2000 and 2005, and the number of domestic 15-to-19 year-olds commencing undergraduate university study decreased by 3 per cent between 2000 and 2004.

With the levelling-off of participation rates in study past the compulsory years of school, questions have arisen about the benefits of more years of education. One issue is the relationship between extra years of schooling beyond the compulsory age and a young person's ability to make a smooth transition into the labour market. Another is the rate of attrition in post-school study. These issues have been investigated in recent research reports in the Longitudinal Surveys of Australian Youth (LSAY) series (Ainley & Corrigan, 2005; Dockery, 2005; Marks, 2006; McMillan, 2005; McMillan, Rothman & Wernert, 2005). They have raised concerns that young people may be choosing to remain at school and pursue further study—rather than undertaking training in the post-compulsory years through vocational education providers—on the basis of poor advice. One proposal to assuage these concerns is the improvement of career advice provided to young people while they are still at school.

Career advice in Australian schools

One recent initiative began in 2005, when the Australian Government introduced the Australian Network of Industry Careers Advisers (ANICA), which was renamed in 2006 as Career Advice Australia (CAA). CAA has been designed to assist young people aged 13 to 19 in the transition from school to work. One part of the initiative is the improvement of the professional standards of career advice. According to the ANICA *Directions Paper*, 'the Australian Government is committed to elevating the standard of career advice in school and the regard held for career advice as an integral part of the school curriculum' (DEST, n.d.).

In a recent report on students' perceptions of school-based career advice and education, the type of services provided by school career advisors was reported to vary considerably between schools (Walker et al., 2006). The authors reported that these variations could be conceptualised as two opposing ends of a continuum, ranging from student-centred approaches to information-centred approaches. Student-centred approaches tend to be highly proactive and individualised, comprising one-to-one counselling sessions and a high level of responsiveness to the individual needs of students. Information-centred approaches, on the other hand, tend to be passive, relying on students to initiate contact and are more general in the information provided, with a focus on satisfying systems administrative requirements, such as paperwork for work experience and subject selection. In an earlier report using the same data, the authors concluded that the variation in service provision was attributable largely to differences in the approach of the career advisors

themselves, and was not found to relate to the socio-economic background of the school population or the geographic location of the school (Alloway et al., 2004).

This description of the variations in career advice services is in line with previous research in the area, which reported that career advisors and counsellors who were rated by students as highly effective spent the majority of their time in direct service delivery, either one-to-one or in small groups, while those advisors considered to be below-average in effectiveness spent more time concentrating on administrative tasks, even though not required to by school management.

Alloway et al. (2004) and Walker et al. (2006) reported that general levels of awareness of the types of services available through career advisors were considered satisfactory overall, although students' confidence in accessing and satisfaction with these services varied across school and students. Students in schools identified as having a student-centred approach to career advice expressed more confidence in accessing this advice than did students in schools identified as having a more information-centred approach. Younger students—those in Year 10—felt they were less well-informed about the range of services available than did older students (those in Year 12), and were less confident about accessing information (Alloway et al., 2004). Where students had expressed dissatisfaction with the career advice at their school—predominantly in schools with an information-centred approach—female students were more likely to express a desire for in-depth, one-to-one counselling from their career advisors and to emphasise the relationship between student and career advisor as paramount to the usefulness of the service. Male students, however, were inclined to take a more 'solution-focussed' approach and to want to know where information was available, if not from the career advisor, and how to access it for themselves (Walker et al., 2006).

Lokan, Fleming and Tuck (1993) analysed data collected from 5000 students in Years 9, 10 and 11 in 22 New South Wales high schools. These students were asked about occupational interests, aspirations, perceived abilities, career thoughts, and career planning and exploration. They were also asked their perceptions of the usefulness of a variety of eight sources of career information: parents and other adult relatives; siblings and friends; career advisors; teachers; other adults; printed materials; audiovisual materials; and people working in jobs of interest. The authors found that students' perceptions about the usefulness of different sources of career information differed by year level. There were also differences in usefulness according to student socioeconomic status (SES), language background and intentions to complete Year 12, although there was no difference between leavers and completers in the perceived usefulness of the information received from school career advisors.

Patton and McCrindle (2001) found that Queensland Year 12 completers perceived school career advisors as the most useful information source for post-school careers among people. Only that State's Tertiary Courses publication was seen as more useful. The authors noted that females made more positive comments on the usefulness of information sources and content, as did those eligible for a tertiary entrance score.

Cotterell (1997) concentrated on how young people use social networks to explore careers. He noted that SES—as related to parental occupation—influences a young person's use of social networks when finding a job. Young people from higher-status families have access to both 'strong ties' and 'weak ties' to gain access to prestigious occupations, while those from lower-status families are more dependent on weak ties for such opportunities. As a result, they use more formal contacts, such as school career advisors.

A number of studies have concentrated on specific groups of young people and their post-school plans. Using data on young people in Years 11 and 12 who are part of The Smith Family's Learning for Life program, Beavis (2006) reported that there was some confusion among these disadvantaged students about the educational requirements of expected occupations. Nearly one-quarter of those surveyed were planning to achieve levels of education too low for their preferred

jobs. There was some evidence that family expectations influenced these plans; unfortunately, the influence of school career advisors was not included in that study.

Craven, Parente and Marder (2004) and Munns and Parente (2003) concentrated on Indigenous Australians and their career aspirations. One issue was the delivery of career advice in schools:

> [O]ver-reliance on written communication strategies has not proven to be a successful form of communication between schools and Indigenous parents. It seems that a number of career education programmes have not been designed to take account of cultural differences and therefore meet the needs of Indigenous students. (Craven et al., 2004, p. 3)

Indigenous students in these studies reported higher levels of satisfaction with career advisors who used student-centred, rather than information-centred, approaches. Hughes and Thomas (2005) also suggested that the individualist approach of many school-based career programs is inappropriate in the Australian cultural context.

Other studies have focussed on gifted and talented students (Boyd, 2000), boys (Browne, 2000), girls (McMahon, Limerick & Gillies, 2002) and speakers of languages other than English (Myhill, Herriman & Mulligan, 1994), as well as on particular geographic locations and related issues (McSwan & Stevens, 1995; Shaw & Larson, 2003).

Previous research has found that there is some variation in the way career advice is delivered in schools. This delivery ranges from the information-centred approach, in which the career advisor makes information available about careers, regardless of the student's interests, to a student-centred approach, in which the career advisor works individually with the student to elicit vocational interests, then tailors information and experiences to the student's needs. Whether students perceive career advice as useful does depend to some extent on how that advice is delivered. That earlier research has also highlighted some of the differences in these perceptions: by gender (with some interaction with timing, or year level), Indigenous background, SES, language background and career intentions (particularly if those intentions require a university degree). Geographic location independent of these other factors appears to have little or no effect.

The current report

This report examines the provision of career advice in secondary schools and its use by a cohort of students who were 15 years old in 2003. The majority of these young people were enrolled in Year 10 in Australian schools at the time. This cohort, the LSAY Y03 cohort, has been followed through to 2005, and in each year young people at school were asked about any career advice they may have received during the year and how useful they perceived that advice to be. As there are cohort members across year levels in each year, it is possible to examine if there are any differences across year levels in the types of advice offered or in students' perceptions of that advice.

The LSAY Y03 cohort was drawn from the Australian 2003 PISA cohort of 15 year-olds, and much information is available from that study, including data on family background, home resources, prior education, perceptions about school and intended job at age 30. The LSAY 2003 interview also collected information about the importance of work-related factors in career choices and the influence of others on career decisions.

As the data on career advice activities were first collected in 2003, some of these young people will have already left school by the 2005 interview. This allows the initial destinations of some cohort members to be examined in relation to their perceptions of the career advice they had received while at school. Of particular interest are those young people who did not complete Year 12.

The present report is based on four main research questions:

1. How widespread is the provision of career advice in Australian schools?

    - Does the provision of advice differ by year levels, in scope or in type of advice?

    - Does the provision of advice differ between different school sectors, or different states?

2. How useful do students in Australian schools find this advice? What types of advice delivery appear to be most valuable?

    - Is career advice perceived differently across year levels?

    - Do students in different school sectors perceive the advice they receive differently?

3. Are there some types of student who find career advice more useful?

    - Are there differences in uses and perceptions of career advice by student characteristics? Are there ethnic differences? Gender differences?

    - Are there differences in the uses and perceptions of career advice of early school leavers, as compared with students who remain to complete their schooling? Is there an association between other students characteristics, such as vocational orientation and career aspirations and how a young person perceives school career advice?

    - Do student-workers (students working part-time while at school) have different perceptions of school-based career advice from those who are not working?

4. Is there a relationship between perceptions of career advice and other school-based measures?

    - Are there differences by academic achievement?

    - Is there a relationship with problem-solving?

    - Are student perceptions of school and teachers related to perceptions about career advice?

The following chapter describes the LSAY data in more detail and outlines the analytical techniques used in the report. The research findings are then organised into three chapters. The first of these, Chapter 3, provides an overview of career advice in Australian schools as reported by members of the 2003 cohort of 15 year-old students. Overall participation rates, the types and number of different career advice activities participated in, and school sector and State differences on these measures are described. Chapter 4 examines relationships between student characteristics and their reported perceptions of the usefulness of career advice activities in which they have participated. Chapter 5 reports on relationships between a number of school-based measures and student perceptions of the usefulness of career advice. Finally, Chapter 6 provides a summary and discussion of the results.

2. DATA AND METHODS

Data

This report uses data from one cohort of young people that is part of the Longitudinal Surveys of Australian Youth (LSAY). LSAY is a series of surveys that focus on the progress of young Australians as they move from their mid-teens to their mid-twenties, from their initial education to independent working life. These surveys involve large nationally representative samples of young people from whom data are collected each year about education and training, work and social development.

The 2003 15 year-old LSAY cohort

During 2003, just over 12 500 students participated in the Programme for International Student Assessment (PISA), which is an initiative of the Organisation for Economic Co-operation and Development (OECD). These students undertook tests in mathematical literacy, reading literacy, scientific literacy and problem-solving skills, and completed a brief questionnaire, which included scales to measure their attitudes as well as questions to collect information on their backgrounds. Further information on the Australian PISA sample can be found in Thomson, Cresswell and De Bortoli (2004).

All students who participated in PISA were then approached to become part of the LSAY Y03 cohort. Toward the end of 2003, they answered a brief telephone interview, which collected additional information about school—with a particular emphasis on career advice in schools—and employment. The initial LSAY sample included 10 370 students from approximately 300 government, Catholic and non-government, non-Catholic ('independent') schools throughout Australia. Further data on education, training and labour market activities have been collected from cohort members in 2004 and 2005 using telephone interviews. At the time of the 2005 data collection, cohort members were 17 years old, and the majority were in Year 12. There were 8691 respondents remaining in the active sample in 2005. A further description of the sample is provided in Appendix 1.

Not all members of the LSAY Y03 cohort were used for the present report. For reporting on types of career advice activity accessed in schools, information on Year 10 career advice was based on data from cohort members who had been in Year 10 in 2003, 2004 or 2005. Information on Year 11 career advice was based on those who had been in Year 11 in any of the three years, and information on Year 12 career advice was based on those who had been in Year 12 in any year. For reporting on relationships with perceptions of career advice, a smaller sample was used. This smaller sample comprised cohort members who were in Year 10 in 2003 only, and would have been in Year 11 in 2004 and Year 12 in 2005, including those who may have left school after Year 10 or after Year 11. This smaller sample eliminates issues of differences that might be attributed to changes in career advising practice between year levels over time and permits examination of changes across time of students' perceptions.

Questions regarding careers and career advice in LSAY

Career education programs include more than career advice alone; Work Experience, VET in Schools and Australian School-based Apprenticeships contribute to the full career education program, as well as career education that is integral to individual subject curricula. LSAY collects information on students' participation in Work Experience, VET in Schools and Australian School-based Apprenticeships, but the focus of this report is on the prevalence and perceptions of career advice among Australian secondary school students. Data on the types of career advice students have accessed and their impressions of how useful each was is available for three years (2003, 2004 and 2005). In each of those years, cohort members who were in school during the

year were asked about the type of career advice they had received, and their perceptions of that advice. An example of these items, from the 2005 interview, is presented in Box 1.

Box 1 LSAY questionnaire items regarding career advice, used from 2003 to 2005

A23 Now some questions about careers advice at school. During 2005, have you done any of the following at your school?

a	Listened to a talk from the school's career advisor?	Yes	No
b	Received hand outs or written material about careers?	Yes	No
c	Taken part in a group discussion about careers?	Yes	No
d	Spoken individually to the school's career advisor?	Yes	No
e	Looked on-line for career guidance or advice?	Yes	No
f	Listened to a talk by an employer representative?	Yes	No
g	Listened to a talk by someone from a TAFE or University?	Yes	No

PRE-A24 IF ANY 'YES' TO A23, CONTINUE
ELSE GO TO A25

A24 FOR EACH 'YES' ASCERTAIN AS BELOW

a How helpful was the talk from the school's career advisor?
Was it ...(READ OUT)

b How useful were the hand outs or written material?
Were they ...(READ OUT)

c How useful was the group discussion?
Was it ...(READ OUT)

d How useful was your conversation with the career advisor?
Was it ...(READ OUT)

e How useful was the on-line career guidance or advice?
Was it ...(READ OUT)

f How useful was the talk by the employer representative?
Was it ...(READ OUT)

g How useful was the talk by the TAFE or University representative?
Was it ...(READ OUT)

1. Very useful
2. Somewhat useful
3. Not very useful
4. Not at all useful

Additionally, in 2003 cohort members were asked about sources of influence on their choices of career. These items are shown in Box 2. In addition, as part of the PISA student questionnaire, cohort members were asked, 'What kind of job do you expect to have when you are about 30 years old?'

One limitation to analyses using the LSAY data is the reporting on the delivery of career advice, which comes from student reports of that delivery. Observational studies of career advice in schools, such as the study conducted by Alloway et al. (2004), provide information on career advisors' approaches to the delivery of advice and how that advice fits within a school's complete career education curriculum.

Box 2 LSAY questionnaire items regarding influences on career selection, used in 2003 only

A35 [T]hinking about what you would like to do in the future –

a How much does your family influence your thinking
Would it be ... (READ OUT)

b How about your friends – in thinking about your future, how much do they influence your thinking. Would it be ... (READ OUT)

c Your school teachers - do they influence your thinking about what you'd like to do in the future ... (READ OUT)

d And when you think about your future, how much does the media influence you? Would it be ... (READ OUT)

e How about the career advisor or counsellor at school – do they influence your thinking... (READ OUT)

f Finally, your own involvement in jobs or work experience at school? Does this influence your thinking...(READ OUT)

1. Quite a lot
2. Some
3. Not much
4. Not at all
5. Not applicable

Because LSAY is a longitudinal study first and foremost, post-stratification survey weights are designed to ensure that the original sample of young people is maintained in later years of the survey, thus accounting for attrition from the study. As such, the sample can be seen to provide valuable cross-sectional, point-in-time data for 2003. Such representation, however, may not be appropriate for following years. This may be an issue if, for example, all Year 11 experiences of career advice are used for some analyses, because the data may have been collected in 2003, 2004 and 2005.

Measures

Items regarding students' perceptions of the usefulness of career advice were assigned scores from 1 to 4, with the response 'not at all useful' assigned 1 and 'very useful' assigned 4. Rasch analyses of these items showed that the logit scores of the responses were clearly separated, indicating that recoding scores onto a logit scale was not necessary. A principal components analysis then showed there was no single factor that underlay these items, indicating that each item should be reported separately, and that it was possible to create an overall score by summing scores on individual items. To ensure that students who participated in seven career advice activities did not have an overall usefulness score greater than the score of a student who participated in fewer activities—which would give a false impression of the usefulness of some activities—a mean usefulness score was assigned, based on the number of activities accessed.

Detailed descriptions of the Rasch analyses and the other variables used in the analyses are provided in Appendix 2.

Analytic techniques

The approach of this report is largely descriptive, focusing on the types of career advice students access in Australian schools, the perceived usefulness of that advice and relationships between these perceptions and student characteristics. Chi-squared tests are used to determine if the distribution of participation or non-participation is independent of other factors, such as State or

school sector. Mean usefulness scores are compared to determine if perceptions of the usefulness of career advice are related to student characteristics, and regression models are used to determine how characteristics contribute to overall perceptions of usefulness.

The chi-squared test of independence is a non-parametric analytical technique that is used to determine whether two categorical variables are related. It compares the frequency of cases found in the categories of one variable across the different categories of another variable, and is often presented as a cross-tabulation of one variable against another. This technique can be used to answer research questions such as 'Is the proportion of students who access at least one type of career advice similar across States and Territories?'

Comparisons of means must recognise the design of the sample to account for all of the variation in the measures. Because the LSAY sample was a two-stage cluster sample, with schools sampled across Australia then students sampled within schools, there is a possibility of similarities among students within schools. This sample design is considered in this analysis, allowing for comparisons to be made after acknowledging the possible sources of variation. If there was a substantial school effect, there would be little variation between students within a school, and greater variation between schools, suggesting that it is schools—and perhaps their career advising staff—that are responsible for differences in students' perceptions of the usefulness of career advice. If, however, there was no school effect and more variation between students, it would suggest that schools are fairly similar in how they deliver career advice and that differences in the usefulness of career advice are related to student differences.

The contribution of LSAY

LSAY can make a valuable contribution to the investigation of the issues identified above. The LSAY 2003 cohort is a nationally representative sample with the same respondents in successive waves, enabling inferences to be drawn about the cohort populations. Because the data are longitudinal, the background characteristics provide data that may explain, at least in part, students' perceptions on the usefulness of the career advice they receive at school. Questions about career advice were asked over three consecutive years, beginning when the majority of cohort members were in Year 10, allowing analysis of changes over time in these perceptions. While Lokan et al. (1993) looked across three year levels at a single point in time, the LSAY data provide an opportunity to examine changes within the cohort across those three years of school. Differences across States may also be identified, because the State and Territory samples are relatively large.

3. CAREER ADVICE AND STUDENT PERCEPTIONS OF ITS USEFULNESS

This chapter provides a brief description of the level and nature of access to various forms of career advice by members of the LSAY Y03 cohort. Overall use of career advice, and the types of career advice accessed are described for the cohort as a whole, with some distinctions for States and Territories and by the sector of school students attended. Results presented are for all students in Years 10, 11 and 12 in all three years for which data are available, giving a broad picture of the use of career advice over the past few years. This is followed by a brief summary of students' perceptions on the usefulness of the advice they received. The following chapter examines in more detail these perceptions, looking at what influences these perceptions.

Level of participation in career advice activities

Overall, the level of participation in various career advice activities was very high across all year levels of senior secondary school (Years 10–12). In all, 8040 of the 8114 students who were in Year 10 between 2003 and 2005, representing slightly more than 99 per cent of all who had been in Year 10 across the three years, reported receiving at least one of the seven different types of career advice that were investigated. Year 11 students reported slightly lower levels of participation in career advice activities compared with Year 10 students, with close to 95 per cent of Year 11 students reporting at least one type of career advice. Year 12 students also reported slightly lower levels of participation, with 98 per cent reporting at least one form of career advice during the year. The average number of different types of career advice activities participated in by those Year 10 and Year 12 students who received some career advice was five, while Year 11 students participated in an average of four different activities during the year. All students participated in at least one activity over the three year levels studied.

State differences in participation

While the reported levels of participation in career advice activities was quite high overall, there were some differences associated with the State or Territory in which students were attending school during 2003.[1] The proportions of students who received some form of career advice in Years 10, 11 and 12 across the seven Australian States and Territories are presented in Table 1. Among Year 10 students, participation in career advice activities was highest in New South Wales and Victoria, with nearly all students accessing career advice. For Year 11 students, participation was highest in South Australia and Victoria, while participation among Year 12 students was similar across all jurisdictions. Chi-squared analyses were conducted for each year level to ascertain whether these apparent State differences were significant.

At each year level, there was a significant association between the State or Territory in which a student was attending school and whether he or she had participated in any career advice activities that year. Among Year 10 students, a greater proportion of students from the Australian Capital Territory, compared to other jurisdictions, had not participated in any of the seven career advice activities that year, [$\chi^2_{(7)} = 37.57$, $p < 0.001$]. Among Year 11 students, the overall level of participation in career advice activities was lower than in other year levels (around 95%) and lower for students from New South Wales and the ACT. The chi-squared analysis was significant [$\chi^2_{(7)} = 73.24$, $p < 0.001$], with a greater than expected proportion of students from New South Wales not participating in career advice activities during Year 11.

[1] Between 2003 and 2005, 1.5 per cent of the cohort moved interstate. Students were assigned to their original location, as it is not possible to determine from the LSAY data the date of these moves. The greatest amount of movement was into Queensland, with an increase of 3 per cent.

Among Year 12 students, levels of participation did not appear to differ across the States, with 97 to 99 per cent of students participating in at least one career advice activity. The results of the chi-squared analysis were significant, however [$\chi^2_{(7)} = 24.23$, $p = 0.001$]. This result was driven largely by the smaller than expected proportion of Victorian students who had not participated in any career advice activities in their final year of secondary school.

Table 1 Proportion of Year 10, 11 and 12 students receiving career advice, by State and by school sector

	Received any form of career advice		
	Year 10 %	Year 11 %	Year 12 %
State of school attended in 2003			
Australian Capital Territory	97	92	97
New South Wales	>99	92	99
Victoria	>99	97	99
Queensland	99	95	99
South Australia	99	97	97
Western Australia	99	95	98
Tasmania	99	96	97
Northern Territory	99	94	98
Sector of school attended in 2003			
Government	99	94	98
Catholic	99	97	99
Independent	99	96	99
All students	99	95	98
Number of students in year level, 2003–2005	8114	8898	7110

School sector differences in participation

In addition to the information on participation in career advice activities by State or Territory, Table 1 contains participation data for the sector of school cohort members attended. Among Year 10 students, the proportion of students attending government, Catholic and independent schools who participated in at least one career advice activity was the same, around 99 per cent. The chi-squared analysis confirmed no significant association between participating in career advice activities in Year 10 and the sector of the school attended [$\chi^2_{(2)} = 4.01$, $p = 0.135$].

In contrast, the proportion of students from government schools who reported participating in career advice activities during Year 11 appeared to be lower than the proportions of students from Catholic and independent schools who received career advice during that year. The chi-squared analysis was significant [$\chi^2_{(2)} = 26.71$, $p < 0.001$], due largely to the smaller than expected proportion of Year 11 students at Catholic schools, compared to those at government and independent schools, who had not received any career advice during the year.

Among Year 12 students, participation in career advice activities was very high, as one would expect for the final year of secondary school, a significant transition point for most young people. Students in government schools, however, appeared to be receiving career advice at a slightly lower rate than students in either Catholic or independent schools (see Table 1). A small but statistically significant association between school sector and career advice in Year 12 was found, [$\chi^2_{(2)} = 22.07$, $p < 0.000$], with more government school students not participating in any career advice activities during Year 12.

Types of career advice accessed

Career advice at schools can take many different forms. Some schools may follow a curriculum for career advice that takes the form of regular classes, while others may rely on students seeking out the school career advisor for information and guidance. The range of services provided by school career advisors has been reported to vary considerably between schools and has been conceptualised as two opposing ends of a continuum, ranging from student-centred approaches to information-centred approaches (Walker et al., 2006). Student-centred approaches tend to be highly proactive and individualised, comprising one-to-one counselling sessions and a high level of responsiveness to the individual needs of students. Information-centred approaches, on the other hand, tend to be passive, relying on students to initiate contact and are more general in the information provided, often assisting students with paperwork for work experience and subject selection.

Students were asked about their participation throughout the years in seven different career advice activities at school: listening to a talk from their school's career advisor, receiving written material or hand-outs, participating in a group discussion about careers, speaking individually with the school's career advisor, looking on-line for career guidance or advice, listening to a talk from an employer representative, and listening to a talk from a TAFE or university representative. The type of activity varies according to the needs of students at different year levels. Table 2 shows how many of the seven career advice activities students received in Years 10, 11 and 12.

Table 2 Number of career advice activities reported by Year 10, 11 and 12 students

	Percentage engaging in number of activities		
Number of activities	Year 10 %	Year 11 %	Year 12 %
None	1	5	2
One	2	8	4
Two	5	12	6
Three	12	16	11
Four	19	19	17
Five	25	19	22
Six	23	14	24
Seven	13	7	15
Total	100	100	100

Changes across year levels

Table 3 shows that the most commonly reported type of career advice received by Year 10 students—among those who reported some form of career advice—was written materials or handouts about careers, followed by listening to a talk from their school's career advisor. These two activities were the most common in Years 11 and 12 as well. In Year 10, participating in a group discussion about careers was also common, with 78 per cent reporting that activity; the use of group discussion was much lower in Years 11 and 12. At this stage, a little more than half of the Year 10 students listened to talks from employer or tertiary institution representatives.

Table 3 Participation in career advice activities: Proportion of students receiving types of career advice in Year levels 10, 11 and 12, 2003–2005

	Year 10		Year 11		Year 12	
Type of career advice received	n	%	n	%	n	%
Talk from school career advisor	6965	87	5838	69	5628	81
Written material/handouts	7657	95	7032	84	6442	92
Group discussion	6227	78	4327	51	4057	58
Individual talk with school career advisor	5076	63	4418	53	4514	65
On-line search for materials	4050	50	3978	47	4219	60
Talk from employer representative	4323	54	3791	45	3472	50
Talk from TAFE or university representative	4374	54	4613	56	5281	76

Note: Denominator is number of students in that year level (2003-2005) who received some career advice. Results are unweighted for attrition.

Among Year 11 students, the proportion of students who had received a talk from a TAFE or university representative was slightly greater than it was among Year 10 students (56% and 54%, respectively). While this change was small, the talk from a tertiary education representative was the only activity that had increased participation between Years 10 and 11.

Among Year 12 students, the most commonly reported career advice activities were again receiving written material or handouts (92%), and listening to a talk from the school's career advisor (81%). For this group of students, however, listening to a talk from a tertiary institution representative was also a very common career advice activity, with more than three of four Year 12 students receiving this form of career information. Use of the internet to find information also increased, with 60 per cent of Year 12 students reporting that they had looked on-line for career guidance or advice.

Investigation of the multiple responses provided by students across the three year levels revealed an association between receiving different types of career advice. For students in Years 10, 11 and 12, there were significant correlations between receiving a talk from a school career advisor, receiving written materials, having an individual session with a career advisor and having a group discussion, although the strength of the associations varied somewhat between the year levels. The content of the career advice may change somewhat across the year levels; talks and individual sessions in Year 10 may focus more on decisions to remain at school and subject selection for the senior years, while Year 12 may concentrate on post-school pathways and tertiary entrance, as suggested by the large increase in listening to talks from tertiary representatives.

Overall, the general pattern of the types of career advice that Australian secondary students are receiving remains the same, with a strong focus on written materials and handouts, and talks and presentations from school career advisors and representatives from tertiary institutions, and a lesser emphasis on meetings between individual students and a career advisor, or discussions among groups of students. In terms of the continuum of types of career advice described by Walker and associates (2006), ranging from student-centred approaches to information-centred approaches, the general pattern reported here tends to be slightly more towards the information-centred end (written material and handouts, talks from career advisor and tertiary representatives), with some elements of the student-centred approach (individual session with career advisor).

Perceived usefulness of career advice

While it is important for young people to have access to high-quality career advice and that this can be provided in secondary schools, it is also important that students see the advice as being useful, especially as they enter into a period of transition in their lives. The overarching purpose of career advice is to help students make informed decisions about careers and how to obtain the required qualifications. Students in the LSAY Y03 sample were asked to comment on the

usefulness of each of the career advice activities they had accessed while at school, rating each activity as 'very useful', 'somewhat useful', 'not very useful' and 'not at all useful'. The response categories corresponded to a four-point scale, with 'very useful' being assigned a score of four and 'not at all useful' a score of one. The overall 'usefulness' score is the mean of scores for those activities accessed by each student.

Analysis of these responses showed that the raw scores could be used without transformation and that raw scores could be averaged to provide an overall usefulness score. Details of this analysis are located in Appendix 2.

Overall, students were quite satisfied with the career advice they had received, with the average usefulness score for students in each year level corresponding to a level of at least 'somewhat useful' for any career advice activities they had participated in during the course of the year. The average usefulness score for students during Year 10, Year 11 and Year 12, showed little variation over the year levels. Year 10 students reported an average usefulness score of 3.3, Year 11 students 3.1, and Year 12 students 3.2.

Another way of reporting on the satisfaction of students with career advice is to examine the proportion of students who replied that the advice they had received was 'very useful'. These statistics are presented in Table 4. Chapters 4 and 5, in which subgroups of the cohort are compared to determine if there are differences in how they perceive career advice, present usefulness scores and report standard errors. These standard errors provide an indication of the amount of variation in the scores.

Differences by year level

There were some small changes in the reported usefulness of certain types of career advice activities across the year levels. Receiving written material or handouts—the most commonly received career advice across all year levels (see Table 3)—was seen as less useful to Year 11, and to a lesser extent Year 12, students than to Year 10 students among those who received this form of career advice. The usefulness of talks from employer representatives was also higher for Year 10 students than for senior secondary students, while talks from tertiary institution representatives were rated as very useful by a greater proportion of Year 12 students than Year 11 and Year 10 students. It may be that the usefulness of different forms of career advice is dependent upon the time or stage at which it is presented to students, with talks from employer representatives being more useful when students are making decisions about whether to stay for the senior years of secondary school. Students who are facing decisions about education and training after their final year of secondary school may see talks from representatives of tertiary institutions as more useful.

Table 4 Students who found career advice very useful, by year level

	Year 10		Year 11		Year 12	
Type of career advice received	n	%	n	%	n	%
Talk from school career advisor	3010	43	1873	32	2209	39
Written material/handouts	3063	40	1996	28	2448	38
Group discussion	2000	32	1096	25	1058	26
Individual talk with school career advisor	3042	60	2457	56	2661	59
On-line search	1407	35	1300	33	1479	35
Talk from employer representative	1796	42	1442	38	1304	38
Talk from TAFE or university representative	2006	46	2009	44	2651	50

Note: Denominator is number of students in that year level (2003–2005) who received some career advice. Results are unweighted for attrition.

Overall, the activity most often rated as very useful by students across all three year levels was having an individual conversation with a school career advisor, with between 56 and 60 per cent of students rating this activity very useful. This activity was rated more useful than any of the other more commonly received types of career advice, such as a talk from the career advisor or receiving written material and handouts.

Summary

This chapter has provided an overview of the level of participation and perceptions of career advice among the LSAY Y03 sample of students in Years 10, 11 and 12. Between 95 and 99 per cent of students participated in at least one of the career advice activities investigated, with participation being somewhat higher among Year 10 and Year 12 students than Year 11 students. The most commonly reported forms of career advice across all three year levels were receiving written material or handouts, and listening to a talk from the school career advisor. The overall picture of career advice in Australian schools, based on the responses of these students, with an emphasis on handouts and listening to talks from various presenters (school career advisors, tertiary and employer representatives) fits with the information-centred approach of services described by Walker et al. (2006). The most useful form of career advice, as determined by students, was having an individual talk or session with the school career advisor. While fewer than two-thirds of students in any year level received this form of career advice, the majority of those who did found it to be very useful.

The following chapters look at differences between subgroups of students and their perceptions of the usefulness of career advice.

4. RELATIONSHIPS BETWEEN STUDENT CHARACTERISTICS AND PERCEPTIONS OF CAREER ADVICE

This chapter looks at relationships between student characteristics and how these young people perceive the career advice they received at school. The analyses in this chapter are based on a smaller subgroup of the LSAY Y03 cohort: those who were in Year 10 in 2003 and may have been in Year 11 in 2004 and Year 12 in 2005. This allows the inclusion of young people who left school before the end of Year 12 and would have received some career advice before leaving. By concentrating on this smaller group, it is possible to see if there are changes in the perception of usefulness as students progress from Year 10 to Year 12, eliminating any changes that may have occurred in career advice within a year level over time.

In this chapter, the usefulness of career advice is reported as a mean score for each type of advice and for the overall usefulness of that advice. The use of usefulness scores makes it easier to compare subgroups of the cohort and across different types of advice. These scores are based on a four-point scale from responses to items on how useful cohort members perceived that advice. Analyses of the responses showed that the scores for perceived usefulness could be used without transformation. Details on the usefulness scores can be found in Appendix 2.

As noted in the previous chapter, 99 per cent of students received some sort of career advice in both Year 10 and Year 12, with slightly fewer students (95%) receiving such advice in Year 11. Additionally, the overall perception of the usefulness of that advice was slightly lower in Year 11 than in the other two years. This pattern remained with the smaller cohort: there was slightly lower participation in career advice activities during Year 11, and slightly lower perceptions of the usefulness of that advice. This general decrease in the perceived usefulness between Year 10 and Year 11, and the subsequent increase in Year 12 can be seen in Figure 1. In all three years, an individual conversation with the school's career advisor was seen as the most useful activity. More than one-half of students at each year level perceived this type of career advice as very useful (see Table 4). Group discussion was perceived as the least useful.

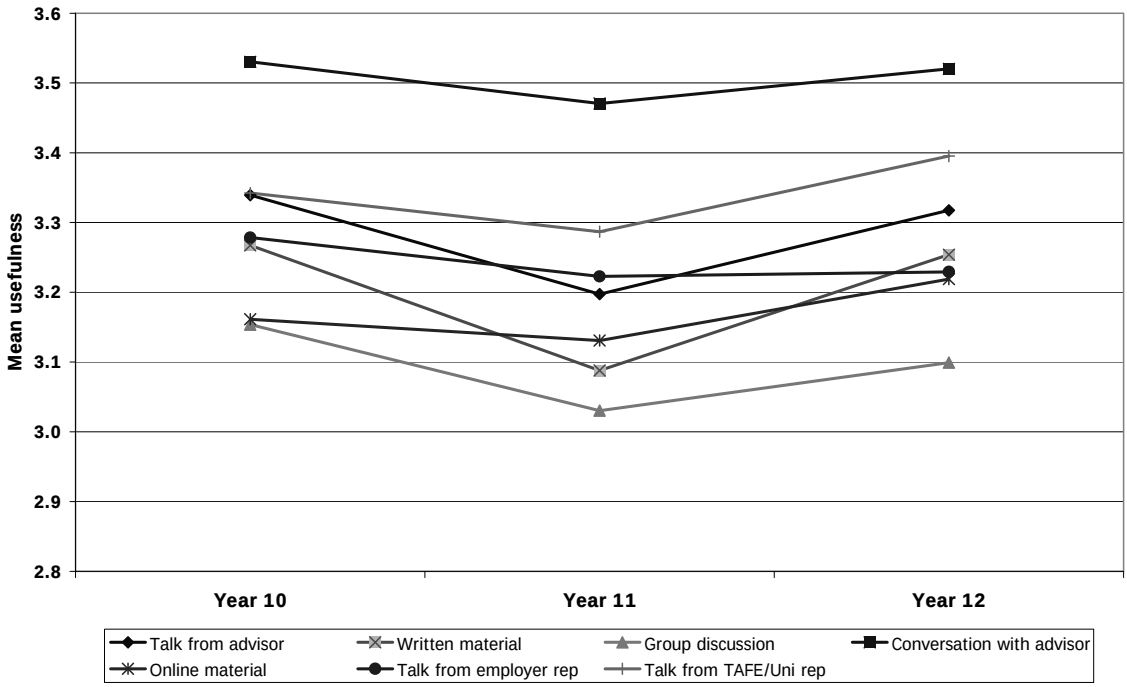

Figure 1 Perceived usefulness of different types of career advice, across year levels

Perceptions of career advice by groups of students

Gender

There was no statistically significant difference between males and females in their overall perception of career advice at any year level. Table 5 shows mean usefulness scores among the group in each year level. Females in Year 10 had an overall score of 3.299, compared to a score of 3.252 for males. After considering the variation associated with these estimates, there was no statistically significant difference by gender in Year 10, Year 11 or Year 12. There was one consistent difference, however, with females finding the talk by a TAFE or university representative more useful than did males.

Table 5 Perceived usefulness of different types of career advice received, by year level and gender

	Year 10		Year 11		Year 12	
Usefulness of ...	Males	Females	Males	Females	Males	Females
Talk from the school's career advisor	3.299 (0.038)	3.374 (0.021)	3.185 (0.021)	3.216 (0.021)	3.314 (0.019)	3.350 (0.024)
Written material	3.277 (0.021)	3.297 (0.019)	3.045 (0.043)	3.113 (0.026)	3.216 (0.018)	3.273 (0.024)
Group discussion	3.137 (0.018)	3.208 (0.022)	3.032 (0.031)	3.057 (0.022)	3.048 (0.020)	**3.161** (0.022)
Conversation with the career advisor	3.546 (0.023)	3.553 (0.024)	3.503 (0.033)	3.471 (0.024)	3.529 (0.022)	3.522 (0.030)
On-line career guidance	3.184 (0.043)	3.192 (0.024)	3.131 (0.024)	3.132 (0.028)	3.272 (0.049)	3.208 (0.019)
Talk by the employer representative	3.322 (0.022)	3.313 (0.027)	3.254 (0.028)	3.222 (0.028)	3.283 (0.046)	3.229 (0.021)
Talk by the TAFE or uni representative	3.270 (0.036)	**3.402 (0.025)**	3.212 (0.033)	**3.329 (0.021)**	3.304 (0.019)	**3.463 (0.020)**
Overall usefulness of career advice	3.252 (0.012)	3.299 (0.013)	3.131 (0.015)	3.163 (0.013)	3.237 (0.016)	3.282 (0.012)

Note: Bold type is used where mean scores are significantly different ($p < .05$) and indicate the higher score. Standard errors are shown in parentheses below the mean scores.

As noted in Figure 1, there was a decrease in the perceived usefulness of all types of career advice between Year 10 to Year 11, although the decrease for on-line career guidance was very small. In Year 12, cohort members found all types of career advice to be more useful than they did in Year 11. Females again found the talk by a TAFE or university representative more useful than did males, and they found the career advice overall to be more useful. Females also found group discussion to be more useful than did males in Year 12.

Indigenous background

Members of the LSAY Y03 cohort from Indigenous backgrounds showed generally similar perceptions of the overall usefulness of career advice as the full cohort (see Figure 2). In each year, Indigenous Australian students found that individual conversations with the school's career advisor were the most useful career advice activity and group discussions the least useful. There was no statistically significant difference between Indigenous Australian students and non-Indigenous students in their perceptions of any of the career advice activities at any year level.

Language background

The only statistically significant differences among young people by language background occurred in Year 11. Compared to those from English-speaking background, young people from language backgrounds other than English found written materials more useful and online guidance materials less useful. Any other differences were not significant.

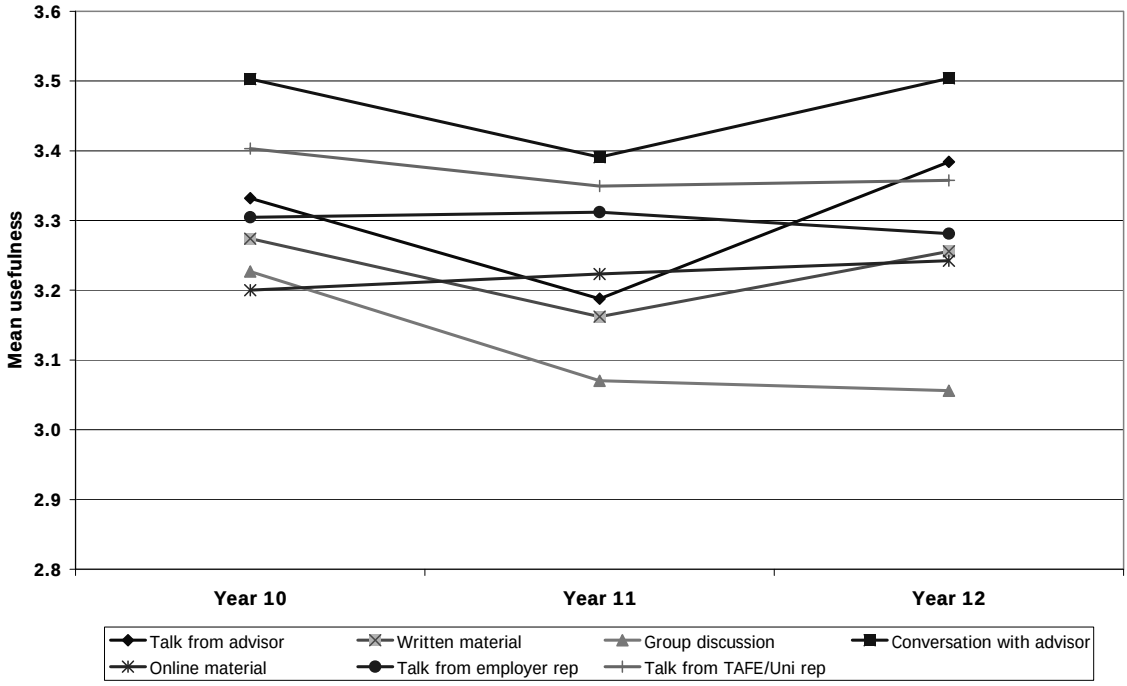

Figure 2 Indigenous Australian students' perceived usefulness of different types of career advice across year levels

Socioeconomic status (SES)

A number of measures of SES are available in the PISA data. One uses parents' occupations, which were classified into four categories, based on the occupation itself and the type of skills required in those positions. The four categories are 'white collar high skilled', 'white collar low skilled', 'blue collar high skilled' and 'blue collar low skilled'. There were no statistically significant differences between these groups on any career advice activities at any year level. A second measure of SES is the index of economic, social and cultural status (ESCS), a continuous measure derived from parents' occupations, parents' educational achievement, books in the home and access to home educational and cultural resources. There was no statistically significant relationship between the ESCS index and overall perceptions of career advice.

A third measure is the international socioeconomic index of occupational status (ISEI). The higher parent's score is used to create a single variable. This measure was statistically significant, indicating that cohort members from lower SES families perceived career advice as more useful, although the substantive difference was very small (.001), indicating that the difference between the lowest occupational score (16 in the LSAY sample) and the highest occupational score (90) would not change a student's perception from one category to the next.

Completion of Year 12

Regardless of whether a student intends to complete Year 12 or not, career advice should be available when required. There should be no difference in the quality of the advice provided to those who complete Year 12 or those who leave beforehand. Among members of the LSAY Y03 cohort, there was no statistically significant difference between completers and non-completers on perceptions of any career advice activity or on career advice overall. In Year 12, however, there was a difference in usefulness scores for the overall perception of career advice and of written materials, with completers rating them more useful than did non-completers.

Intention to complete Year 12

When in Year 10, cohort members were asked about their *intention* to complete Year 12. At the time, more than 90 per cent of the cohort planned to complete Year 12; 3 per cent of the cohort were unsure. Young people who are unsure about their plans may in fact benefit more than others from career advice at school.

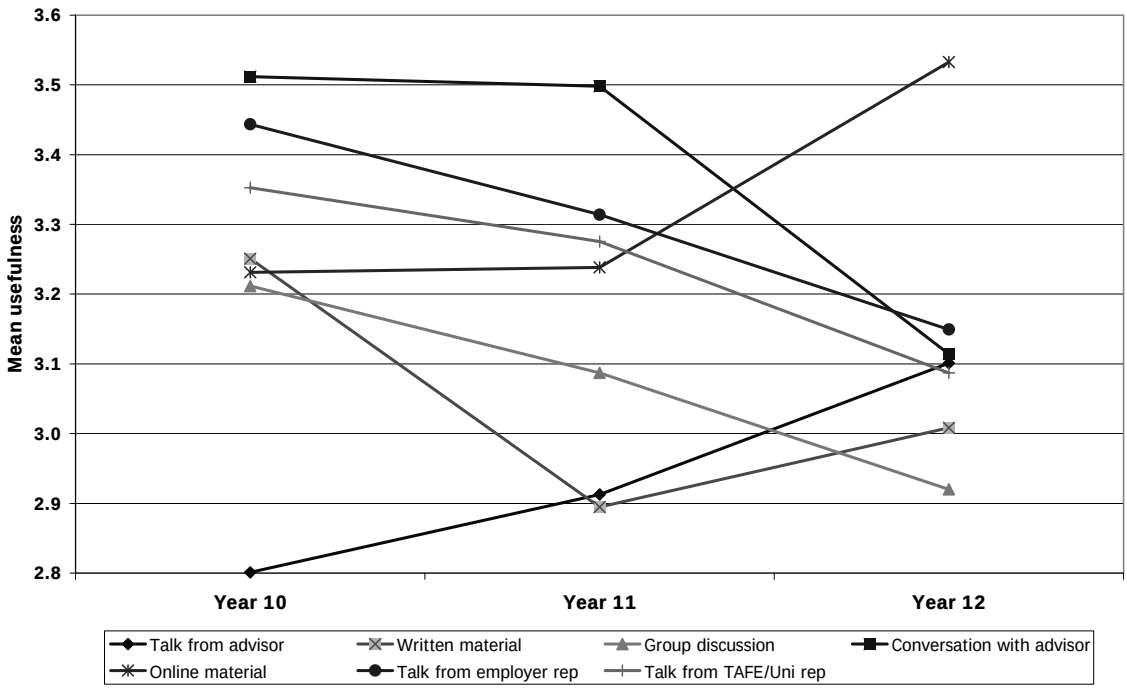

Figure 3 Perceived usefulness of different types of career advice across year levels by cohort members unsure about Year 12 completion when in Year 10

Of these young people who were unsure about Year 12 participation, just over one-half were still in school two years later, including those who left during Year 12. This 'unsure' group is much smaller than the group of those who had intended to complete Year 12, so tests of statistical significance showed no difference in their perceptions of career advice at any year level when compared to other groups. Nevertheless, the patterns of their responses over the three years—Year 10, Year 11 and Year 12, as shown in Figure 3—differ markedly from those of the full cohort, as shown in Figure 1. In particular, the usefulness of a conversation with the school's career advisor dropped in Year 12, contrary to the pattern for the full cohort. The related activity—a talk from the career advisor—had been seen as by far the least useful activity in Year 10, but increased in usefulness so that in Year 12 it was equivalent to a conversation with the advisor.

One other difference among the patterns of responses among those who were unsure about Year 12 when in Year 10 relates to the perceived usefulness of on-line career advice material. This activity was perceived as much more useful than any other activity when this group did reach Year 12—more than the career advisor and more than talks from representatives of employer groups or further education providers. While the patterns in Figure 3 appear different from those in Figure 1, there is much variation within the 'unsure' group, particularly between those who did complete Year 12 and those who left before the end of the year. Again, because of small numbers of cohort members in these groups, there are no statistically significant differences in the scores relating to individual career advice activities, but it should be noted that among those who left school during Year 12, they found the talk from employer and education representatives *most* useful, and much more useful than did those who remained at school until the end of Year 12. These unsure Year 12 leavers also found the online material much less useful than did the unsure Year 12 completers.

Intended occupation and intended education level

As part of the PISA student questionnaire completed in Year 10, cohort members indicated their intended occupation at age 30 and their intended highest education level. Neither of these variables had any significant association with perceptions of the usefulness of career advice.

Student workers

Young people who work part-time while at school may have a stronger sense of their career interests while at school, and therefore may perceive school-based career advice differently from those who are not working. Comparisons of the mean usefulness scores between the 41 per cent of Year 10 students who were working and the 59 per cent who were not showed no difference. Similarly in Years 11 and 12, as more students undertook part-time employment, there was no difference in the perceived usefulness of career advice between those who were working and those who were not.

Student workers in Year 10 were also asked about reasons for working while at school. Within the group of student workers in Year 10, 19 per cent said they were working in a job they wanted as a career. This smaller group of young people, however, did have different perceptions of the usefulness of career advice received at school. They rated career advice more positively than did all other Year 10 students, with the talk from an employer representative showing the greatest, positive difference. Within this smaller group, Year 12 completers perceived most career advice activities as more useful than did non-completers.

Multivariate relationship between student characteristics and perceptions of career advice

Multivariate analysis offers an understanding of how different factors work together to produce an outcome. In this case, the characteristics reported above were entered into a regression model to determine if any of these factors had an effect when the other factors were 'held constant', thus allowing an assessment of each characteristic's independent effect on the outcome. While some characteristics were statistically significant—gender in Years 10 and 12, favouring females; and language background in Years 10 and 12, favouring those of backgrounds other than English; and one measure of SES—the models explained very little of the variation in the overall usefulness scores in Years 10, 11 and 12. The R-squared of each model was less than .01, indicating that less than 1 per cent of the variation can be explained by these background characteristics. Results of these multivariate analyses for Year 10 can be found in Appendix 3.

Summary

This chapter examined how useful cohort members perceived the career advice activities they experienced while at school, to determine which student background factors were associated with differences in those perceptions. The full sample of the LSAY Y03 cohort was trimmed so that the perceptions of one group of young people with similar experiences—those who were in Year 10 in 2003 and may have been in Year 11 in 2004 and Year 12 in 2005 if they remained at school—could be analysed for differences across specific background characteristics. These comparisons showed that there was little difference between young people in how they perceived the career advice they received while at school. Even when small, statistically significant differences were found, they added little to an overall understanding of the influences on why some young people were more positive in how they perceived career advice in Year 10, 11 or 12. This questions the strength of the findings of Lokan et al. (1993), who had found that students' perceptions about the usefulness of career information differed by student socioeconomic status (SES) and language background.

The following chapter extends the analysis of students' perceptions of the usefulness of career advice by examining relationships between students' perceptions and school-related factors, such as academic achievement and participation in school climate.

5. RELATIONSHIPS BETWEEN SCHOOL FACTORS AND PERCEPTIONS OF CAREER ADVICE

The previous chapter examined relationships between student background characteristics and perceptions of career advice, and found that there was only a minuscule relationship. This chapter looks at relationships between factors relating to school activities and students' perceptions of the career advice they received at school. The analyses in this chapter use the same subgroup of the LSAY Y03 cohort that was used in the previous chapter: those who were in Year 10 in 2003 and may have been in Year 11 in 2004 and Year 12 in 2005. In this chapter, as in the previous chapter, the usefulness of career advice is reported as a mean score for each type of advice and for the overall usefulness of that advice.

Differences between students or differences between schools

As the first step in the analysis of relationships between school factors and perceptions of career advice, a multilevel analysis was done to determine what proportion of the differences in perceptions was attributable to students, and what proportion may be attributable to schools (Raudenbush et al., 2004). Differences by schools may be the result of similarities within the student population, the pastoral care and general relationships between school staff and students, or the individual career advisors themselves. This multilevel analysis showed that only a small proportion of the variation in students' perceptions of the overall usefulness of career advice was the result of differences between schools. At Year 10, 96 per cent of the variance was between students and only 4 percent was between schools. At Year 11, the school variance component decreased to 3 per cent, and at Year 12, to 2 per cent. These results suggested that continuing with multilevel analyses of students' perceptions of career advice would achieve little additional information over a simpler analysis of student differences.

School location: State of school attended

Table 1 showed that there were differences by State or Territory in the proportion of students who did not participate in any career advice activity while at school, with particular jurisdictions highlighted at each year level. There were some small differences by State or Territory in students' overall perception of career advice, and there were related differences in the number of career advice activities undertaken by students. Year 10 students in the Australian Capital Territory had participated in fewer activities than did students in other States, and they gave these activities lower scores than did students in other States (see Figure 4). By Year 12, students in the ACT perceived career advice as quite useful, with the ACT ranking third in scores on the overall measure. The lower scores in the ACT for Year 10 can be attributed in part to low scores on the usefulness of the talk from a TAFE or university representative. One other difference stands out: the low overall usefulness score in Year 12 among students in Tasmania, which was only slightly higher than the Year 11 overall score. This low score can be attributed to the significantly lower score on Tasmanian students' perceptions of the usefulness of the written materials they received during Year 12. Among individual career advice activities, the only State difference in usefulness was Queensland students' more positive perception of online career guidance.

School location: Geographic region of the school attended

Cohort members' schools were classified into four geographic regions based on the classification scheme developed for the Performance Measuring and Reporting Taskforce of the Ministerial Council on Education, Employment, Training and Youth Affairs (Jones, 2004). The four geographic regions are capital cities, major urban centres, provincial cities and other (rural and remote) locations. While there were no statistically significant differences by region, there was a general tendency for young people from non-metropolitan regions—provincial cities and rural and remote locations—to give slightly higher ratings across all three year levels to career advice overall, compared to those from metropolitan regions. These young people tended to find

individual conversations with the school's career advisor and talks from employer and education representatives more useful than did young people from capital cities and other major urban centres.

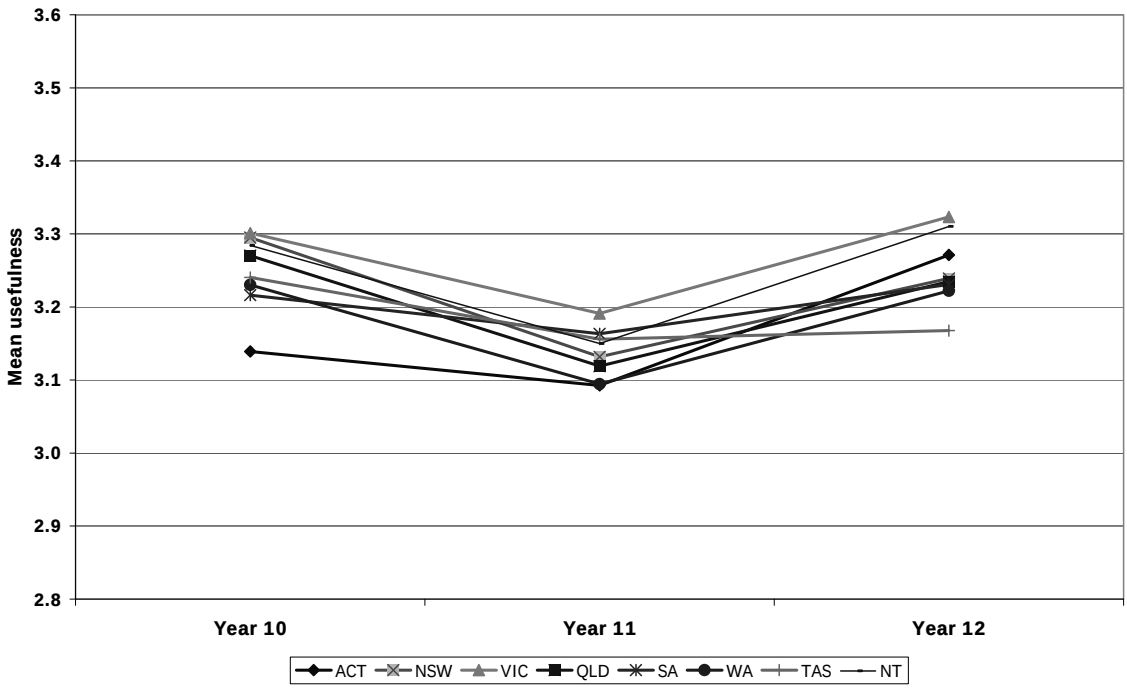

Figure 4 Overall perception of usefulness of career advice in Years 10, 11 and 12, by State or Territory

School sector

The overall perception of the usefulness of career advice was similar among the three school sectors—government schools, Catholic schools and non-government, non-Catholic ('independent') schools. While there were small, non-significant differences in Years 10 and 11, by Year 12 the mean scores were equal. Within the individual career advice activities, however, there were some differences. The talk from a TAFE or university representative was seen as less useful among students in independent schools than among those in government and Catholic schools in Year 10, although in other years there was no significant difference. Across the three years, the perceived usefulness of the talk from an employer representative decreased among students in Catholic and independent schools, but increased in Year 12 among students in government schools. There were no statistically significant differences associated with any of the other activities.

Academic achievement

All members of the LSAY Y03 cohort had participated in the Programme for International Student Assessment (PISA), conducted by the Organisation for Economic Co-operation and Development (OECD) in 2003. As part of PISA, these students sat for assessments in the domains of mathematical literacy, reading literacy, scientific literacy and problem solving. While there were some statistically significant relationships between students' scores on these assessments and their perceptions of the usefulness of career advice, they were extremely small. Achievement in any of the four domains assessed in PISA accounted for less than one per cent of the variation in overall usefulness scores at all year levels.

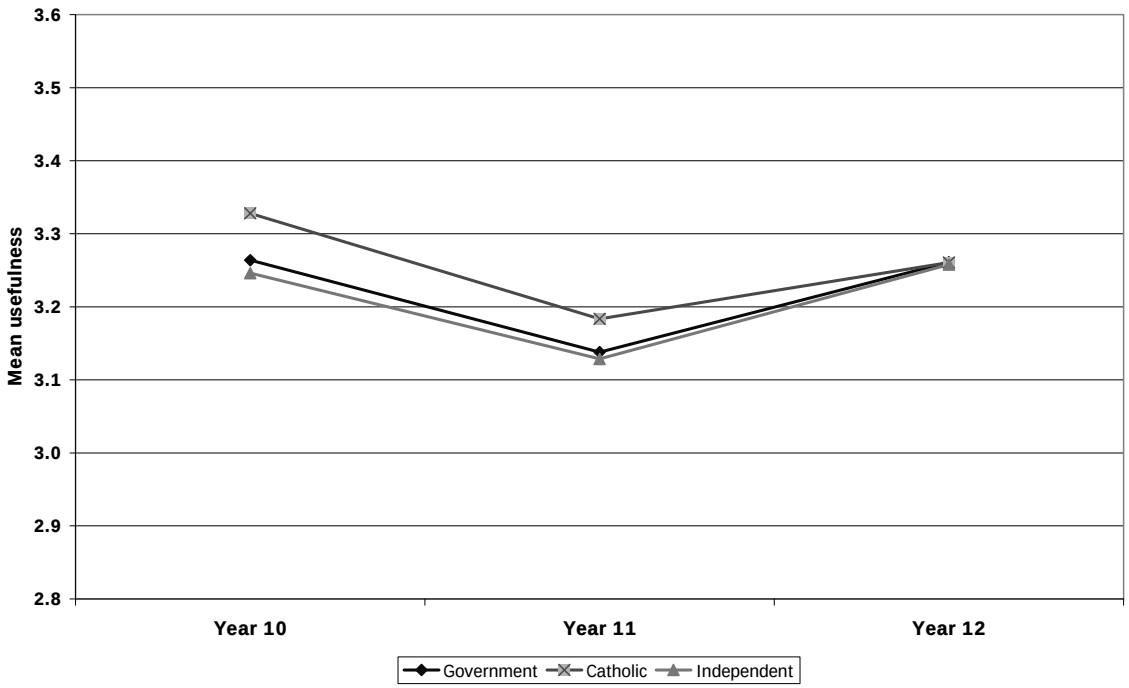

Figure 5 Overall perception of usefulness of career advice in Years 10, 11 and 12, by school sector

School climate

Information relating to school climate was available from the PISA student questionnaire, completed when cohort members were 15 years old and all members of the subgroup used in this chapter were in Year 10. These items were used to develop three separate scales relating to school climate: attitudes toward school; student-teacher relations at school; and sense of belonging at school. Relationships between students' perceptions of the usefulness of career advice and these three scales were examined. Again there were statistically significant relationships, but they were extremely small, accounting for around four per cent of the variation in usefulness scores in Year 10, and even less of the variation in Years 11 and 12.

Influence of others

When in Year 10, members of the LSAY Y03 cohort were asked what influenced their thinking about what they would like to do in the future. Sources of influence included their families, their friends, their school teachers, the media and their school career advisors or counsellors. Cohort members who said that their career advisors influenced them 'quite a lot' or 'some' perceived career advice to be more useful than did those who said that the career advisor influenced them 'not much' or 'not at all'. This difference was statistically significant for all activities in Year 10, and overall in Years 11 and 12. Further, those who said they were influenced by their teachers, their families and their friends also found school career advice more useful than did those who were not influenced by teachers, family or friends. Table 6 shows the mean usefulness scores of cohort members in Year 10 in 2003, highlighting differences for those who said their career advisors or counsellors influenced their thoughts about future careers and those who said their teachers influenced these thoughts.

Table 6 Perceived usefulness of different types of career advice received in Year 10, by influence of school career advisor/counsellor and teachers

	Career advisor's influence		Teachers' influence	
Usefulness of ...	'Quite a lot' or 'Some'	'Not much' or 'Not at all'	'Quite a lot' or 'Some'	'Not much' or 'Not at all'
Talk from the school's career advisor	**3.497** **(0.035)**	3.061 (.0.23)	**3.421** **(0.037)**	3.226 (0.020)
Written material	**3.392** **(0.017)**	3.128 (0.021)	**3.372** **(0.017)**	3.177 (0.021)
Group discussion	**3.273** **(0.015)**	2.995 (0.024)	**3.273** **(0.015)**	3.041 (0.025)
Conversation with the career advisor	**3.679** **(0.015)**	3.275 (0.032)	**3.619** **(0.021)**	3.456 (0.024)
On-line career guidance	**3.248** **(0.033)**	3.086 (0.029)	**3.263** **(0.035)**	3.085 (0.026)
Talk by the employer representative	**3.386** **(0.020)**	3.194 (0.030)	**3.385** **(0.019)**	3.214 (0.029)
Talk by the TAFE or uni representative	**3.416** **(0.022)**	3.203 (0.035)	**3.411** **(0.023)**	3.228 (0.038)
Overall usefulness of career advice	**3.399** **(0.010)**	3.089 (0.015)	**3.363** **(0.012)**	3.165 (0.013)

Note: Bold type is used where mean scores are significantly different ($p < .05$) and indicate the higher score. Standard errors are shown in parentheses below the mean scores.

Participation in career advice activities

With a variety of student interests, it is possible that perceptions of usefulness of career advice are related to students' expected outcomes of each career advice activity. Students who rate activities as 'useful' or 'helpful' may do so because that activity was designed to meet their needs; other activities may be perceived as not meeting students' expectations, and are consequently rated as 'not useful'. Students are not required to participate in all of the career advice activities made available during a school year, and attend those that they believe will be of benefit. Relationships between the number of activities undertaken and the perceived usefulness of those activities were analysed to examine this possibility. There was a positive, statistically significant relationship between the number of activities and the perceived usefulness of career advice overall. As with other factors reported in this and the previous chapter, the relationship was small, with 7 per cent of the variation in Year 10 explained, 5 per cent of the variation in Year 11 explained and 8 per cent of the variation in Year 12 explained.

Multivariate relationship between school factors and perceptions of career advice

The school-based factors reported in this chapter were entered into a regression model to determine if any of these factors had an effect on students' perceptions of career advice when the other factors were 'held constant', thus allowing an assessment of each factor's independent effect on the outcome. Most factors were statistically significant at each of the three year levels. In particular, attitudes towards school, student-teacher relations at school, sense of belonging to school and the number of career advice activities in the year all had positive, statistically significant relationships with perceptions of usefulness. Academic achievement had a small, negative, statistically significant relationship with perceptions of usefulness. Factors relating to school location (both State/Territory and region) and sector were not significant in any of the models. This model explained 18.6 per cent of the variation in usefulness scores in Year 10, but only 11 percent in Years 11 and 12. When this model was expanded to include the student characteristics discussed in Chapter 4, gender slightly improved the explanatory power of the

model, with females offering more positive comments than males about the usefulness of career advice. Results of these multivariate analyses can be found in Appendix 3.

Summary

This chapter examined cohort members' perceptions of the usefulness of the career advice they received at school, concentrating on the influences of a number of school-based factors. It was established early that only a small proportion of the variation in students' perceptions could be attributed to differences between schools, and the inclusion of a school level in the analysis was not necessary. The analyses of school-based factors in this chapter also showed that less than 20 per cent of the variation in usefulness scores could be explained by the available explanatory variables. In general, students with positive attitudes towards school, as exhibited by how much they are were influenced by key school staff and their interactions with others in the school, also perceived their career advice as more useful. Students with lower achievement on PISA assessments in 2003 were slightly more positive about the career advice they received. These factors were significant regardless of socioeconomic status (including parents' occupational status and education), language background, school location or school sector.

There was some indication that some types of career advice were perceived as more useful in relation to some school factors. The usefulness of talks from employer representatives and TAFE and university representatives differed according to school sector when students were in Year 10, but by Year 12 these differences were no longer apparent.

The results reported in this chapter and the previous chapter show that there is little variation between schools in the delivery of career advice. Students believed that the advice they received was useful. Any differences in how useful students see career advice were related to students' perceptions of the school climate and the number of career advice activities they accessed during the year. Some types of career advice activities were perceived as more useful than others. Overall, differences between students explained little of the differences in perceptions of career advice.

6. SUMMARY AND CONCLUSION

Over the past two decades, there has been a large increase in the number of young people remaining at school past the compulsory years. This increase has resulted in enrolment increases in the tertiary education sector, with more young people attending universities and VET institutions. As these enrolments have increased, so too has concern about young people who do not pursue post-compulsory study. These concerns have led to a greater focus on young people's preparation for the transition from school—either into the labour force directly or into post-school study before entering the labour force—with greater focus on career advice offered in schools.

Previous research had suggested that there were differences in young people's perceptions of career advice. Students generally preferred a student-centred approach, with an emphasis on more individualised contact tailored to students' interests, over an information-centred approach that concentrated on the dissemination of more generic information on post-school options. There was also an indication in some research that there were differences between students in their uses and perceptions of career advice, with some authors citing socioeconomic status, language background and intentions to complete Year 12 as factors that explained differences in perceptions of the usefulness of career advice.

The data used in this report are from the 2003 15 year-old LSAY cohort. A subgroup of this cohort was examined in detail to investigate relationships between student background and school-based factors and how young people perceive career advice. This subgroup comprised young people who had been in Year 10 in 2003, Year 11 in 2004 and Year 12 in 2005, although some may have left school before the end of Year 11 or Year 12.

Main findings

Use of career advice activities

All students participated in some type of career advice over the three school years, Years 10, 11 and 12. The lowest level of participation was in Year 11, when 95 per cent of students accessed at least one type of career advice. In Year 10, participation was 99 per cent, and in Year 12, 98 per cent. There was some variation by State or Territory and by school sector, but only during Year 11; at the other year levels there were no substantial differences in participation.

There was some variation across the year levels regarding the type of career advice accessed. The distribution of written material and handouts was the most common activity at all year levels, followed by a general talk from the school career advisor. Group discussion was used more frequently in Year 10, but in later years it was not used as much. In Years 10 and 11, just over one-half of students attended a talk by a representative of a tertiary institution; by Year 12 this had increased to more than two-thirds of students.

The most common grouping of activities was the career advisor's talk, the distribution of written material and an individual conversation with the career advisor. This suggests a slight inclination to use information-centred approaches, although with student-centred activities fairly common as part of the overall package.

Perceived usefulness of career advice activities

Students who participated in career advice activities during a school year—whether they were still at school when interviewed or had left earlier that year—were also asked to comment on how useful they found each activity. The individual conversation with the school's career advisor was seen as the most useful across all three year levels, regardless of gender, location and most other background or school-based factors. One small group of students found that the individual talk with the career advisor was not the most useful: Year 10 students who were unsure about completing Year 12, but this lower rating occurred only when these students did reach Year 12.

The activity seen as least useful was the group discussion, particularly in Year 12. This appears to contradict the continuum suggested by Walker et al. (2006). An individual conversation with the school's career advisor and group discussion are both student-centred activities, but they were perceived as the most useful and the least useful career advice activities. Further, the second-most useful activity, as perceived by students, was the talk by a tertiary education representative, which is an information-centred activity. While schools in the present study were not classified as student-centred or information-centred according to their delivery of career advice, it appears that students themselves value both student-centred activities and information-centred activities.

Overall, while there were some statistically significant differences between students in how useful they perceived the career advice activities to be, these differences were small and accounted for little of the variation in usefulness scores. In total, student background factors accounted for around 1 per cent of the variation in scores. There were small differences between males and females, with females rating the talk by a TAFE or university representative more useful than did males. There were no differences in the usefulness scores between Indigenous Australian students and non-Indigenous students; minor differences between those from English-speaking backgrounds and those from other language backgrounds; minor differences by socioeconomic status; only small differences between Year 12 completers and non-completers; and no differences between student-workers and non-workers overall. One smaller group of student-workers—those who were working in jobs that they saw as career-related—thought career advice was more useful than did other students.

There was more variation by school-based measures when examining differences between students in their perceptions of career advice at schools. A small, statistically significant relationship between achievement, as measured in PISA in 2003, and perceptions was found, but it accounted for only 1 per cent of the variation in scores. This weak relationship showed that lower-achieving students were more positive about the career advice they received. Similarly, three school climate measures from PISA—attitudes toward school, student-teacher relations at school and sense of belonging at school—accounted for about 4 per cent of variation in Year 10 and less in later years, with those scoring higher on these measures also more positive about career advice. Young people who said that others at school influenced their thinking about their futures, particularly teachers and the schools career advisor, also had more positive perceptions of the usefulness of the career advice activities in which they had participated.

Within some of these analyses there were some interesting differences, although the strength of these differences was generally small. For example, Indigenous Australian students in Year 12 found the talk from the school's career advisor more useful than did other students in Year 12; males in all year levels found the talk from an employer representative more useful than did females, and females were more positive about the talk from a TAFE or university representative. Some types of advice were found more useful by those who did not complete Year 12 and by those who were unsure about whether they would complete Year 12, but in general these differences were small.

The greatest association with perceptions relates to access and participation. Students had more positive perceptions of the usefulness of career advice the more they accessed different types of career advice. The relationship was statistically significant but small, although larger than others in this study. Participation in a wide variety of career advice activities provides more opportunities to find a good match between students' interests and career advice, thus leading students to be more positive about the usefulness of career advice at school.

Overall, the combination of school-based factors accounted for less than 19 per cent of the variation in perceptions of usefulness of career advice. In addition, there was little evidence to suggest that the variation in scores is because of differences between schools in the quality of career advice. As such, the concept of student-centred delivery and information-centred delivery of career advice may not apply, as there is little to suggest that school-based differences in career advice are separate from overall school climate.

Implications

The general lack of differences in the data, as reported above, should not be taken lightly. To the contrary, it suggests that students perceive that the career advice they receive in schools meets their individual needs, and that career advice is delivered to students equitably across schools and within schools, as it is perceived by students, regardless of background, to be equally useful. This is particularly important for young people in communities that may be disadvantaged by location, social standing or economic situation.

Two important groups stand out, even though the differences are not large. One group comprises those who, when in Year 10, were unsure if they would stay at school to complete Year 12. These students had more positive comments about career advice when they were in Year 12, particularly when compared to those who did not complete Year 12. The other group comprises those with lower achievement scores on the PISA assessments in Year 10. Both of these groups could be seen as having a higher risk of not making a successful transition after leaving school and would therefore benefit more from career advice before leaving school.

That young people find career advice more useful as they participate in more career advice activities during the year suggests that breadth is valued by students. Increased opportunities to discover the right match between students and their possible careers is highly valued. Exposure to different approaches—both student-centred and information-centred—is important for students to feel that they will benefit from career advice. While many talks from the career advisor and more time online to access career information may provide a wide variety of information, it is the assortment of advice activities that appears to be appreciated by students. These activities need not all be student-centred; information-centred activities are valued, but should be combined with student-centred activities such as individual conversations with the career advisor.

A positive school climate is related to positive perceptions of the usefulness of career advice. It is not possible, however, to determine if positive comments about career advice are additional to school climate, or if the positive school climate is because the career advice program is integral to the general climate of the school.

An assortment of activities also gives some students opportunities to explore activities that they otherwise may not explore. For example, some young people from language backgrounds other than English found the written handouts and online material more useful than did others. Some career decisions may require more time for consideration, and other language speakers may need that time to discuss career options with their parents. Written material allows more time to do so, and may be available in other languages—printed and online—to further such discussions. The mix of student-centred and information-centred activities in career advice needs to be continued in schools, to ensure that all students have access to all available information.

While school career advisors can provide student-centred activities, online career advice can be enhanced to provide more information for young people and their parents, particularly if information is available in a variety of languages in addition to English. It may well be that a positive school climate obviates the need for an overemphasis on student-centred activities—as seen in students' lack of interest in group discussion—and the provision of targeted information is better appreciated by students who seek advice about their futures.

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APPENDIX 1: THE 2003 15 YEAR-OLD LSAY COHORT

During 2003, just over 12 500 students participated in the Programme for International Student Assessment (PISA), which is an initiative of the Organisation for Economic Co-operation and Development (OECD). These students undertook tests in mathematical literacy, reading literacy, scientific literacy and problem-solving skills, and completed a brief questionnaire that included scales to measure their attitudes as well as questions to collect information on their backgrounds. All students who participated in PISA were then approached to become part of the LSAY Y03 cohort. Toward the end of 2003, they answered a brief telephone interview, which collected additional information about school—with a particular emphasis on career advice in schools—and employment.

The initial LSAY sample included 10 370 students from approximately 300 government, Catholic and non-government, non-Catholic ('independent') schools throughout Australia. The distribution of the sample across States/Territories and school sectors is shown in Table A.1. The language background of cohort members is shown in Table A.2. Further data on education, training and labour market activities have been collected from the sample members in 2004 and 2005 using telephone interviews, and continues to be collected annually.

Table A.1 Distribution of the 2003 LSAY cohort in 2003, by State/Territory and geographic zone

	Geographic zone				
State or Territory	Metropolitan (%)	Provincial (%)	Remote (%)	*Total in state (%)*	*Number in sample*
Australian Capital Territory	2	- -	- -	*2*	*196*
New South Wales	23	8	- -	*32*	*3282*
Victoria	19	6	- -	*24*	*2502*
Queensland	12	8	- -	*19*	*1998*
South Australia	7	2	<1	*9*	*928*
Western Australia	8	3	- -	*11*	*1153*
Tasmania	1	1	- -	*2*	*233*
Northern Territory	- -	1	<1	*1*	*78*
Total in zone	*72*	*28*	*1*	*100*	
Number in sample	*7439*	*2867*	*64*		*10370*

Notes: Geographic zones determined by location of cohort members' schools, and based on the MCEETYA Schools Geographic Location Classification, which uses ARIA+ scores (GISCA, 2003). The metropolitan zone comprises mainland state capital city regions and major urban statistical districts; the provincial zone comprises provincial city statistical districts (50,000–99,999, including Darwin), provincial city statistical districts (25,000–49,999), inner provincial areas and outer provincial areas; and the remote zone comprises remote areas and very remote areas. Cells may not sum to row and column totals due to rounding.

Table A.2 Language spoken at home 'most of the time' by 2003 LSAY cohort members

Broad language group	Total (%)
English	91
Other Northern European Languages	<1
Southern European Languages	1
Eastern European Languages	2
Southwest Asian and North African Languages	2
Southern Asian Languages	1
Southeast Asian Languages	1
Eastern Asian Languages	2
Australian Indigenous Languages	<1
Other Languages (including African, Oceanic, Sign)	<1
Total	*100*
Number in sample	*10291*

Notes: Language groups are based on the *Australian Standard Classification of Languages* (ASCL), first edition (ABS, 1997; catalogue no 1267.0) Column may not sum to 100% due to rounding. Data may be missing for some cohort members.

APPENDIX 2: VARIABLES USED

Measuring students' perceptions of the usefulness of career advice

As part of the LSAY Y03 telephone interviews each year, students were asked whether they had participated in seven different types of career advice during the year. They were then asked to comment on how useful they found each activity in which they participated, based on four ordered responses: 'very useful', 'somewhat useful', 'not very useful' and 'not at all useful'. Responses of 'very useful' were assigned a value of 4; 'somewhat useful', 3; 'not very useful', 2; and 'not at all useful', 1. Responses were then analysed using the Rasch item response model. This model provides indications of the 'difficulty' of moving from one response to another, ordered response, and reports these as 'thresholds'.

The output from these analyses are presented in this appendix. Table A.3 shows the results for Year 10 students. Results for the first item, 'Talk from career advisor', show that to move from a response of 'not at all useful' (value 1) to 'not very useful' (value 2) required a level equal to -2.00. To move from 'not very useful' (value 2) to 'somewhat useful' (value 3) required a level equal to -0.67; and to move from 'somewhat useful' (value 3) to 'very useful' (value 4) required a level equal to 2.11. (These required levels are often referred to as 'ability estimates', but this term is inappropriate to the present discussion.) While these items are not evenly spaced (1.33 between threshold 2 and threshold 3, and 2.78 between threshold 3 and threshold 4), they offer clear separation between response levels. With such clear separation of responses, it was reasonable to assign original values to these items, particularly as it would facilitate interpretation of the results. Results for Years 11 and 12 are shown in Tables A.4 and A.5, respectively.

Tables A.6, A.7 and A.8 are the item–ability maps for Years 10, 11 and 12, respectively. These 'maps' place the item thresholds on the same scale as students' 'abilities', allowing comparisons between students and the difficult of moving from one level of response to the next.

Table A.3 Output from Rasch modelling to determine usefulness scores, Year 10

Usefulness of Career Advice 2003-2005 Year 10

Item Estimates (Thresholds) In input Order
Year 10 on all (N = 8192 L = 7 Probability Level=0.50)

	ITEM NAME	SCORE	MAXSCR	THRESHOLD/S 1	2	3	4	INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
1	Talk from career advisor	14749	21072	-2.00	-0.67	2.11		0.83	0.81	-10.3	-9.4
				.13	.11	.07					
2	Written material/handouts	15592	23187	-1.84	-0.27	2.22		1.00	1.00	-0.2	-0.1
				.09	.08	.06					
3	Group discussion	12144	18873	-2.13	-0.07	2.77		1.05	1.05	3.0	2.3
				.13	.06	.04					
4	Conversation with advisor	11702	15363	-2.09	-0.75	1.37		0.98	1.00	-0.8	-0.1
				.16	.12	.09					
5	Online career guidance	7906	12246	-1.59	0.28	2.63		1.21	1.21	8.7	7.2
				.13	.08	.09					
6	Talk by employer rep	8945	13083	-1.78	-0.18	2.25		1.01	0.99	0.3	-0.4
				.13	.10	.07					
7	Talk by TAFE/uni rep	9310	13236	-2.00	-0.30	2.00		1.00	0.99	0.0	-0.5
				.16	.09	.07					
Mean				0.00				1.01	1.00	0.1	-0.1
SD				0.30				0.11	0.12	5.7	4.9

Table A.4 Output from Rasch modelling to determine usefulness scores, Year 11

Usefulness of Career Advice 2003-2005 Year 11

Item Estimates (Thresholds) In input Order
Year 11 on all (N = 9014 L = 7 Probability Level=0.50)

	ITEM NAME	SCORE	MAXSCR	THRESHOLD/S 1	2	3	4	INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
1	Talk from career advisor	12078	17736	-2.13	-0.66	2.52		0.86	0.84	-7.3	-0.9
				.13	.07	.08					
2	Written material/handouts	13589	21330	-1.88	-0.18	2.73		1.00	1.00	0.1	-0.2
				.09	.08	.05					
3	Group discussion	8238	13131	-2.19	0.08	3.08		1.05	1.05	2.2	1.7
				.13	.10	.09					
4	Conversation with advisor	10082	13458	-2.25	-0.77	1.39		0.98	1.01	-0.9	0.5
				.16	.11	.05					
5	Online career guidance	7899	12069	-2.03	0.08	2.56		1.18	1.19	7.8	6.5
				.16	.08	.09					
6	Talk by employer rep	7930	11535	-2.00	-0.18	2.25		0.99	0.98	-0.6	-0.6
				.16	.09	.09					
7	Talk by TAFE/uni rep	9903	13992	-2.00	-0.40	1.93		0.97	0.96	-1.6	-1.6
				.13	.09	.06					
Mean				0.00				1.00	1.00	0.0	-0.1
SD				0.30				0.10	0.10	4.5	4.0

Table A.5 Output from Rasch modelling to determine usefulness scores, Year 12

Usefulness of Career Advice 2003-2005 Year 12

Item Estimates (Thresholds) In input Order
Year 12 on all (N = 7282 L = 7 Probability Level=0.50)

	ITEM NAME	SCORE	MAXSCR	THRESHOLD/S 1	2	3	4	INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
1	Talk from career advisor	12263	17229	-1.78	-0.60	2.26		0.84	0.82	-8.5	-7.8
				.13	.11	.04					
2	Written material/handouts	13626	19737	-1.88	-0.37	2.28		0.95	0.94	-2.9	333.3
				.13	.09	.06					
3	Group discussion	7991	12453	-2.03	0.20	3.13		1.05	1.05	2.1	1.9
				.16	.08	.05					
4	Conversation with advisor	10722	13815	-1.91	-0.59	1.39		0.97	0.97	-1.4	-0.9
				.16	.12	.06					
5	Online career guidance	8761	12879	-2.25	-0.05	2.53		1.22	1.22	9.2	7.9
				.19	.07	.05					
6	Talk by employer rep	7356	10611	-2.00	0.03	2.40		1.03	1.02	1.2	0.6
				.19	.07	.08					
7	Talk by TAFE/uni rep	12004	16122	-2.06	-0.41	1.72		0.99	0.98	-0.3	-0.7
				.16	.09	.07					
Mean				0.00				1.01	1.00	-0.1	47.8
SD				0.26				0.12	0.12	5.4	126.0

Table A.6 Item–ability map of usefulness scores, Year 10

```
Usefulness of Careers Advice 2003-2005 All Year 10s
-----------------------------------------------------------------------------------------------------
Item Estimates (Thresholds)
year10 on all (N = 8192 L = 7 Probability Level=0.50)
-----------------------------------------------------------------------------------------------------
  4.0                        X   |
                            XX   |
                         XXXXXX   |
                            XXX   |
                             XX   |
                           XXXX   |
                        XXXXXXX   |
  3.0                       XXXX   |
                           XXXXX   |       3.4
                          XXXXXX   |       5.4
                       XXXXXXXXX   |
                         XXXXXXX   |
                    XXXXXXXXXXXX   |       2.4    6.4
                     XXXXXXXXXXX   |       1.4
  2.0                  XXXXXXXXX   |       7.4
                        XXXXXXX   |
                    XXXXXXXXXXXX   |
                      XXXXXXXXXX   |
                       XXXXXXXXX   |       4.4
                        XXXXXXX   |
                        XXXXXXX   |
  1.0     XXXXXXXXXXXXXXXXXXXXX   |
                  XXXXXXXXXXXXXX   |
                           XXXXX   |
                        XXXXXXX   |
                           XXXXX   |
                           XXXXX   |       5.3
  0.0                     XXXXXX   |
                            XXXX   |       3.3
                             XXX   |       2.3    6.3
                             XXX   |       7.3
                              XX   |
                              XX   |       1.3
                               X   |       4.3
 -1.0                              |
                              XX   |
                              XX   |
                                   |
                                   |       5.2
                                   |
                                   |       2.2    6.2
 -2.0                              |       1.2    7.2
                                   |       3.2    4.2
                                   |
                                   |
                                   |
                                   |
 -3.0                              |
                                   |
                                   |
                                   |
                                   |
                                   |
 -4.0                              |
-----------------------------------------------------------------------------------------------------
  Each X represents   33 students
=====================================================================================================
```

Table A.7 Item–ability map of usefulness scores, Year 11

```
Usefulness of Careers Advice 2003-2005 All Year 11s
-------------------------------------------------------------------------------------------------------
Item Estimates (Thresholds)
year11 on all (N = 9014 L = 7 Probability Level=0.50)
-------------------------------------------------------------------------------------------------------
  5.0                           |
                                |
                                |
                                |
                                |
                           XX   |
  4.0                      XX   |
                          XXX   |
                          XXX   |
                           XX   |
                         XXXXX  |
                          XXXX  |
  3.0                XXXXXXXXX   |       3.4
                          XXXX  |
                       XXXXXXXX  |       2.4
                        XXXXXXX  |       1.4    5.4
                      XXXXXXXXX  |
                  XXXXXXXXXXXXX  |       6.4
  2.0                 XXXXXXXXX  |
                   XXXXXXXXXXXX  |       7.4
                    XXXXXXXXXXX  |
                    XXXXXXXXXXX  |
                  XXXXXXXXXXXXX  |       4.4
              XXXXXXXXXXXXXXXXX  |
  1.0       XXXXXXXXXXXXXXXXXXX  |
          XXXXXXXXXXXXXXXXXXXXX  |
                   XXXXXXXXXXXX  |
                        XXXXXXX  |
                       XXXXXXXX  |
                      XXXXXXXXX  |
                        XXXXXXX  |       3.3    5.3
  0.0                     XXXXX  |
                         XXXXXX  |       2.3    6.3
                            XXX  |       7.3
                             XX  |
                             XX  |       1.3    4.3
                             XX  |
 -1.0                       XXXX  |
                            XXXX  |
                              X   |
                              X   |
                                  |
                                  |       2.2
 -2.0                             |       5.2    6.2    7.2
                              X   |       1.2    3.2    4.2
                                  |
                                  |
                                  |
 -3.0                             |
                                  |
                                  |
                                  |
                                  |
                                  |
 -4.0                             |
-------------------------------------------------------------------------------------------------------
  Each X represents   31 students
=======================================================================================================
```

Table A.8 Item–ability map of usefulness scores, Year 12

```
Usefulness of Careers Advice 2003-2005 All Year 12s
-------------------------------------------------------------------------------------------------------
Item Estimates (Thresholds)
year12 on all (N = 7282 L = 7 Probability Level=0.50)
-------------------------------------------------------------------------------------------------------
  5.0                           |
                                |
                                |
                                |
                                |
                                |
                           XXX  |
  4.0                        X  |
                          XXXXX |
                             XX |
                             XX |
                             XX |
                         XXXXXX |
                            XXX |       3.4
  3.0                  XXXXXXXX |
                        XXXXXX  |
                     XXXXXXXXXX |
                        XXXXXXX |       5.4
                        XXXXXXX |       6.4
                        XXXXXXX |       1.4    2.4
                  XXXXXXXXXXXXX |
  2.0                   XXXXXXX |
                  XXXXXXXXXXXXX |
                     XXXXXXXXXX |       7.4
                    XXXXXXXXXXX |
                   XXXXXXXXXXXX |       4.4
                       XXXXXXXX |
  1.0                 XXXXXXXXX |
           XXXXXXXXXXXXXXXXXXXX |
                    XXXXXXXXXXX |
                       XXXXXXXX |
                        XXXXXXX |
                          XXXXX |
                           XXXX |       3.3
  0.0                      XXXXX |       6.3
                            XXXX |       5.3
                            XXXX |
                              XX |       2.3    7.3
                              XX |       1.3    4.3
                               X |
                               X |
 -1.0                           |
                            XXXX |
                               X |
                                |
                                |
                                |       1.2    2.2    4.2
 -2.0                           |       3.2    6.2
                                |       7.2
                                |       5.2
                                |
                                |
                                |
 -3.0                           |
-------------------------------------------------------------------------------------------------------
  Each X represents   29 students
=======================================================================================================
```

Other variables

State/Territory and school sector

As part of the original sampling for PISA, all schools in Australia were stratified by State/Territory and school sector. All information on the State/Territory relates to the school attended, and not where the student was living at the time. School sector information was removed from all PISA databases, so students were asked to provide this information in the telephone interview in 2003.

Geographic region of school

School location was classified using the regions recommended by the Performance Measuring and Reporting Taskforce of the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) (Jones, 2004). There are eight separate regions in the MCEETYA geographical location classification; these were collapsed into four regions for the present analysis as shown in Table A.9.

Table A.9 MCEETYA geographical location classification and collapsed regions

MCEETYA region		Collapsed region
Metropolitan Zone Mainland State Capital City Regions	→	Capital cities
Metropolitan Zone Major Urban Statistical Districts	→	Major urban centres
Provincial Zone Provincial City Statistical Districts 50,000 to 99,999	→	Provincial centres
Provincial Zone Provincial City Statistical Districts 25,000 to 49,999		
Provincial Zone Inner Provincial Areas		
Provincial Zone Outer Provincial Areas	→	Other
Remote Zone Remote Areas		
Remote Zone Very Remote Areas		

Gender

Student gender was collected as part of the original PISA sampling and on the PISA student questionnaire, resulting in a small number of inconsistencies. These inconsistencies were resolved in subsequent telephone interviews.

Indigenous background

As part of the PISA student questionnaire, students were asked, 'Are you of Aboriginal or Torres Strait Islander origin?' Response options were 'No', 'Yes, Aboriginal' and 'Yes, Torres Strait Islander', and students could have selected more than one response. Any student who responded 'Yes, Aboriginal' or 'Yes, Torres Strait Islander' was considered 'Indigenous'.

Language background

As part of the PISA student questionnaire, students were asked, 'What language do you speak at home most of the time?' Response options included 'English', 10 specified languages and 'Another language'. All responses other than English constituted only 9 per cent of all responses (see Table A.2), so were considered together.

Socioeconomic status

Two measures of socioeconomic status (SES) were available from the responses in the PISA student questionnaire. One is based on the higher of parents' occupations and divided into four categories: 'white collar, high skilled'; 'white collar, low skilled'; 'blue collar, high skilled'; and 'blue collar, low skilled'. A second measure of SES is the economic, social and cultural status index (ESCS), which has a mean of 0 and standard deviation of 1. It is based on students' responses to the international socioeconomic index of occupational status, which was used in PISA; the highest level of education of the father and mother, converted into years of schooling; the number of books in the home as well as access to home educational and cultural resources (a desk for study, a room of one's own, a quiet place to study, a computer to use for school work, educational software, an Internet connection, a calculator, classical literature, books of poetry, works of art, books to help with schoolwork and a dictionary). See Thomson, Cresswell & De Bortoli (2004).

Completion of Year 12

Students who indicated that they had left school without obtaining a certificate were considered to be non-completers. All other students—who had either completed Year 12 or were still attending school—were considered completers. This latter group includes those who were interviewed in 2005 before they would have completed all requirements for a Year 12 certificate.

Intention to complete Year 12

As part of the LSAY telephone interview each year, cohort members are asked if they planned to remain at school to complete Year 12. For the present study, intentions to complete Year 12 from only the Year 10 interview were used. This allowed students who responded that they did not know at the time to be considered 'unsure', and to see how useful these 'unsure' students rated any career advice they received.

Intended occupation

As part of the PISA student questionnaire, cohort members were asked, 'What kind of job do you expect to have when you are about 30 years old?' Responses were coded according to the international socioeconomic index of occupational status, a scale that ranges from 0 to 90. The index captures the attributes of occupations that convert education into income. The index was derived by the optimal scaling of occupation groups to maximise the indirect effect of education on income through occupation and to minimise the direct effect of education on income, net of occupation (both effects being net of age) (OECD, 2003).

Intended education level

Students were also asked what level of education they expected to complete, ranging from school level to a university degree. The highest of their responses was coded according to the International Standard Classification of Education (ISCED).

Student workers

At each LSAY interview, cohort members are asked if they are working. Student workers are those who were attending school and working in a job during the school year. Students who were working in jobs over school holiday periods only were not considered student workers.

Academic achievement

All members of the LSAY Y03 cohort participated in PISA in 2003. PISA is part of an ongoing OECD program of reporting on indicators in education. Each cycle of PISA has a focus on one educational domain. In 2003 that focus was mathematical literacy. The other domains are reading literacy (the focus in 2000), scientific literacy (the focus in 2006) and problem-solving skills. PISA results are reported on a scale with a mean of 500 and a standard deviation of 100. For the present study, results in each of the four domains were used in initial analyses, but with little variation in findings. For the models reported here, only mathematical literacy was used, as it was the major domain in 2003.

School climate

The PISA student questionnaire had a number of items relating to school climate. Responses to these items formed three separate scales: attitudes towards school; student-teacher relations; and sense of belonging. Each had a mean of 0 and a standard deviation of 1. The scales and their composite items are shown in Table A.10.

Table A.10 Items contributing to individual school climate scales

Scale	Composite questionnaire items (scales based on students' agreement with the following items)
Attitudes towards school	School has done little to prepare me for adult life when I leave school.
	School has been a waste of time.
	School helped give me confidence to make decisions.
	School has taught me things which could be useful in a job.
Student-teacher relations	Students get along well with most teachers.
	Most teachers are interested in students' well-being.
	Most of my teachers really listen to what I have to say.
	If I need extra help, I will receive it from my teachers.
	Most of my teachers treat me fairly.
Sense of belonging	I feel like an outsider (or left out of things).
	I make friends easily.
	I feel like I belong.
	I feel awkward and out of place.
	Other students seem to like me.
	I feel lonely.

Influence of others

As part of the 2003 LSAY telephone interview, cohort members were asked about six influences on their future careers: family; friends; school teachers; the media; the school career advisor or counsellor; and school-based Work Experience. Response options were 'quite a lot', 'some', 'not much' and 'not at all'. Each item was treated separately in the analyses.

APPENDIX 3: MULTIPLE REGRESSION RESULTS

Regression model examining relationship between student characteristics and perceptions of career advice (Year 10 only)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.067	.005	.003	.47628

a Predictors: (Constant), unsure12, work10 Working in Year 10, Indig Indigenous background, nesb Language spoken at home, Gender, hisei Highest parental occupational status, compy12 Year 12 completer

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.885	7	.841	3.706	.001
	Residual	1293.914	5704	.227		
	Total	1299.799	5711			

a Predictors: (Constant), unsure12, work10 Working in Year 10, Indig Indigenous background, nesb Language spoken at home, Gender, hisei Highest parental occupational status, compy12 Year 12 completer

b Dependent Variable: oause10 Usefulness of career advice overall, Year 10

Coefficients(a)

		Unstandardised Coefficients		Standardised Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.257	.049		66.532	.000
	Gender	.032	.013	.034	2.513	.012
	Highest parental occupational status	-.001	.000	-.050	-3.686	.000
	Indig Indigenous background	.029	.030	.013	.970	.332
	nesb Language spoken at home	.029	.024	.016	1.206	.228
	work10 Working in Year 10	.004	.013	.004	.330	.741
	compy12 Year 12 completer	-.003	.016	-.003	-.204	.838
	plans12 Unsure about Year 12	.048	.045	.014	1.059	.290

a Dependent Variable: oause10 Usefulness of career advice overall, Year 10

Regression model examining relationship between school-based factors and perceptions of career advice (Year 10 only)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.431(a)	.186	.185	.42632

a Predictors: (Constant), cadone10 Career advice activities in Year 10, achvt Academic achievement, BELONG Sense of belonging to school, LAA035C A35c Influence of school teachers, STUREL Student-teacher relations at school, LAA035E A35e Influence of school career advisor, ATSCHL Attitudes towards school

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	238.365	7	34.052	187.360	.000(a)
	Residual	1042.681	5737	.182		
	Total	1281.045	5744			

a Predictors: (Constant), cadone10 Career advice activities in Year 10, achvt Academic achievement, BELONG Sense of belonging to school, LAA035C A35c Influence of school teachers, STUREL Student-teacher relations at school, LAA035E A35e Influence of school career advisor, ATSCHL Attitudes towards school

b Dependent Variable: oause10 Usefulness of career advice overall, Year 10

Coefficients(a)

		Unstandardised Coefficients		Standardised Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.661	.045		58.563	.000
	Academic achievement	.000	.000	-.038	-3.043	.002
	Influence of school career advisor	.127	.006	.268	19.827	.000
	Influence of school teachers	.038	.007	.077	5.761	.000
	Attitudes towards school	.032	.006	.072	5.200	.000
	Sense of belonging to school	.025	.006	.052	4.019	.000
	Student-teacher relations at school	.036	.007	.070	5.096	.000
	Career advice activities in Year 10	.050	.004	.154	12.446	.000

a Dependent Variable: oause10 Usefulness of career advice overall, Year 10

‘Final’ regression model examining relationship between student characteristics, school-based factors and perceptions of career advice (Year 10 only)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.435	.189	.188	.42521

a Predictors: (Constant), Gender, hisei Highest parental occupational status, cadone10 Career advice activities in Year 10, achvt Academic achievement, BELONG Sense of belonging to school, LAA035C A35c Influence of school teachers, STUREL Student-teacher relations at school, LAA035E A35e Influence of school career advisor, ATSCHL Attitudes towards school

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	234.641	9	26.071	144.193	.000
	Residual	1006.557	5567	.181		
	Total	1241.198	5576			

a Predictors: (Constant), Gender, hisei Highest parental occupational status, cadone10 Career advice activities in Year 10, achvt Academic achievement, BELONG Sense of belonging to school, LAA035C A35c Influence of school teachers, STUREL Student-teacher relations at school, LAA035E A35e Influence of school career advisor, ATSCHL Attitudes towards school

b Dependent Variable: oause10 Usefulness of career advice overall, Year 10

Coefficients(a)

		Unstandardised Coefficients		Standardised Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.619	.053		49.736	.000
	Gender	.030	.012	.032	2.619	.009
	Highest parental occupational status	-.001	.000	-.032	-2.505	.012
	Academic achievement	.000	.000	-.023	-1.763	.078
	Influence of school career advisor	.128	.007	.271	19.689	.000
	Influence of school teachers	.038	.007	.077	5.660	.000
	Attitudes towards school	.032	.006	.071	5.015	.000
	Sense of belonging to school	.024	.006	.051	3.937	.000
	Student-teacher relations at school	.035	.007	.068	4.895	.000
	Career advice activities in Year 10	.051	.004	.156	12.413	.000

a Dependent Variable: oause10 Usefulness of career advice overall, Year 10