Insights from 20 years of the Longitudinal Surveys of Australian Youth (LSAY)

Dr Cameron Forrest
What is LSAY?

Longitudinal Surveys of Australian Youth (LSAY)


YIT ALS/AYS Y95 Y98 Y03 Y06 Y09 Y15

ACER’s Youth in Transition (YIT) studies

DEET’s Australian Longitudinal Surveys /DEETYA’s Australian Youth Surveys (AYS)
<table>
<thead>
<tr>
<th>Cohort abbreviation</th>
<th>Cohort description</th>
<th>Survey period</th>
<th>Age when first surveyed</th>
<th>Age range during survey period</th>
<th>Sample size</th>
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</thead>
<tbody>
<tr>
<td>Y95</td>
<td>Year 9 in 1995</td>
<td>1995-2006</td>
<td>14.5 years</td>
<td>14.5 – 25.5 years (average)</td>
<td>13 613</td>
</tr>
<tr>
<td>Y98</td>
<td>Year 9 in 1998</td>
<td>1998-2009</td>
<td>14.5 years</td>
<td>14.5 – 25.5 years (average)</td>
<td>14 117</td>
</tr>
<tr>
<td>Y03</td>
<td>Aged 15 and participated in PISA</td>
<td>2003-14</td>
<td>15 years</td>
<td>15-25 years</td>
<td>10 370</td>
</tr>
<tr>
<td>Y06</td>
<td>Aged 15 and participated in PISA</td>
<td>2006-17</td>
<td>15 years</td>
<td>15-25 years</td>
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</tr>
<tr>
<td>Y09</td>
<td>Aged 15 and participated in PISA</td>
<td>2009-20 (ongoing)</td>
<td>15 years</td>
<td>15-25 years</td>
<td>14 251</td>
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<tr>
<td>Y15</td>
<td>Aged 15 and participated in PISA</td>
<td>2015-26</td>
<td>15 years</td>
<td>15-25 years</td>
<td>14 530</td>
</tr>
</tbody>
</table>
Utility of LSAY (Karmel 2019)

• A rich characterization of the social and economic background of young people

• Measures of academic achievement at age 15

• Observations over time that enable analysis of pathways and transitions
Contributors

- Dr Tom Karmel, National Institute of Labour Studies
- Dr Grant Cooper, RMIT University
- Dr Jung-Sook Lee, UNSW
- Dr Jenny Chesters, University of Melbourne
- Dr Cain Polidano, University of Melbourne
- Dr David Curtis, Flinders University
- Dr Domenico Tabasso, Université de Genève
- Dr Wojtek Tomaszewski, University of Queensland
- Dr Helen Law, University of Tübingen
- Dr Philip Parker, Australian Catholic University
- Dr Joanna Sikora, Australian National University
- John Stanwick, Alison Anlezark, Rasika Ranasinghe, Emerick Chew, NCVER
Major topics

1. Socio-economic status and family background

2. VET in schools

3. School experiences, math, and expectations of enrolling in university

4. Employment and post-school outcomes

5. An overview of school-to-work transitions
Section 1: Socio-economic status and family background
Socio-economic status and family background

- Student insights, trajectories, and equity considerations: using the LSAY to examine demographic predictors of participation in senior secondary science
  - Grant Cooper

- Inequality in higher education and labour market benefits for young Australians
  - Jung-Sook Lee

- Associations between educational attainment and both family and school SES
  - Jenny Chesters
Associations between educational attainment and both family and school SES (Chesters 2018)

- Used data from Y09 cohort to investigate relationship between student and school socioeconomic status and academic achievement

- Partially testing resource compensation theory (Parcel, Dufur & Zito 2010)

- Predictors: Student SES, school SES

- Outcomes: PISA scores at age 15, later enrolment at university
• Student SES positively associated with PISA scores
  – Quartile 4 averaged 77.7 points more than Quartile 1

• School SES positive associated with PISA scores
  – Quartile 4 averaged 81.6 points more than Quartile 2

• Model 3: (Student SES)*(School SES)
  – Highest*Highest averaged 116.6 points more than Lowest*Lowest
  – Lowest*Highest averaged 75 points more than Lowest*Lowest
• Lower SES students less likely to enroll in bachelor degrees (OR = 0.33)

• Students from lower SES schools less likely to enroll in bachelor degrees (OR = 0.36)

• (Student SES)*(School SES)
  – Q1*Q1 less likely to enroll than Q4*Q4 (OR = 0.21)
  – Q4*Q1 less likely to enroll than Q4*Q4 (OR = 0.50)
Section 2: VET in schools
VET in schools

• Student transfer between VET and higher education
  – David Curtis

• Initial outcomes from VET-in-schools programs in Australia
  – Cain Polidano and Domenico Tabasso
Student transfer between VET and higher education (Curtis 2006, 2019)

• Two cohorts: Y95 and Y06

• Students who ‘drop out’ are in fact more likely than not to enroll in another course

• Inter-sectoral transfer also occurs as a way for students to supplement skills from other qualifications
Incidence of inter-sectoral transfer (Curtis)

<table>
<thead>
<tr>
<th>No post-school program (13%)</th>
<th>No further study (64%)</th>
<th>Apprenticeship (7%)</th>
<th>TAFE course (12%)</th>
<th>University course (14%)</th>
<th>Non-formal study (3%)</th>
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<td>Apprenticeship (19%)</td>
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<td>University course (41%)</td>
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<td>3%</td>
<td>6%</td>
<td>24%</td>
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<tr>
<td>Non-formal study (2%)</td>
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Notes:
Rows indicate first post-school program; columns indicate second post-school program
Row and column totals may not sum to 100% because of rounding.
n/a indicates either not applicable (e.g. no post-school study therefore no possible transfer) or too few cases to enable reliable estimates to be made.
## Incidence of inter-sectoral transfer

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<td>n/a</td>
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</table>

<table>
<thead>
<tr>
<th>Y06 (2006 – 2016)</th>
<th>No further study (62%)</th>
<th>Vocational certificate (10%)</th>
<th>Vocational diploma (4%)</th>
<th>Bachelor degree (19%)</th>
<th>Postgraduate study (5%)</th>
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<td>n/a</td>
<td>n/a</td>
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<tr>
<td>Vocational certificate (31%)</td>
<td>63%</td>
<td>27%</td>
<td>4%</td>
<td>5%</td>
<td>1%</td>
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<tr>
<td>Vocational diploma (8%)</td>
<td>62%</td>
<td>3%</td>
<td>23%</td>
<td>11%</td>
<td>1%</td>
</tr>
<tr>
<td>Bachelor degree (52%)</td>
<td>55%</td>
<td>2%</td>
<td>2%</td>
<td>32%</td>
<td>9%</td>
</tr>
<tr>
<td>Postgraduate study (0.3%)</td>
<td>82%</td>
<td>n/a</td>
<td>n/a</td>
<td>14%</td>
<td>5%</td>
</tr>
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</table>
Student transfer between VET and higher education

• It is often asserted that 30% of commencing higher education sector students drop out.

• LSAY data show that most of those 30% are students who have changed course or institutions, or have moved from higher education to VET.

• Young people change their minds about career paths and we need a system that can accommodate changes.
Initial outcomes from VET-in-schools programs in Australia (Polidano & Tabasso)

- First year out from school outcomes of students who participated in upper-secondary VET-in-schools programs
- Pooled data from Y03 and Y06 cohorts
- Tested three VET-in-schools models:
  - Classroom-based VET without workplace learning
  - Classroom-based VET with workplace learning
  - Apprenticeships/traineeships
<table>
<thead>
<tr>
<th>Category</th>
<th>Y03</th>
<th>Y06</th>
<th>Total</th>
<th>%</th>
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<tbody>
<tr>
<td>No VET-in-schools</td>
<td>5,892</td>
<td>5,264</td>
<td>11,156</td>
<td>71</td>
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<tr>
<td>VET-in-schools</td>
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<td>2,156</td>
<td>4,471</td>
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</tr>
<tr>
<td>Classroom-based VET</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No WPL</td>
<td>949</td>
<td>807</td>
<td>1,756</td>
<td>11</td>
</tr>
<tr>
<td>With WPL</td>
<td>755</td>
<td>649</td>
<td>1,404</td>
<td>9</td>
</tr>
<tr>
<td>Apprenticeship / traineeship</td>
<td>285</td>
<td>399</td>
<td>684</td>
<td>4</td>
</tr>
<tr>
<td>WPL with A/T (omitted)</td>
<td>326</td>
<td>301</td>
<td>627</td>
<td>4</td>
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<tr>
<td>Total</td>
<td>8,207</td>
<td>7,420</td>
<td>15,627</td>
<td>100</td>
</tr>
</tbody>
</table>
Polidano & Tabasso

• Participating in VET-in-schools associated with 14% higher rate of school completion
  – Higher for programs which involved workplace learning (including apprenticeship / traineeship)

• About 5% decreased probability of participating in higher education

• About 5% higher rate of participation in VET courses at certificate III and above
Polidano & Tabasso

• 3% higher rate of full-time employment (WLC only)

• 5% higher likelihood of being in a job that they would like as a career

• $25/week premium associated with participation in classroom-based VET courses with workplace learning components

• Negative effect on wages of enrolment in apprenticeship/traineeship
Section 3: School experiences, math, and expectations of enrolling in university
School experiences, math, and expectations of enrolling in university

• Schools and career guidance key to widening university participation
  – Wojtek Tomaszewski

• The underrepresentation of women in maths-intensive fields of study: the role of teenage occupational expectations, self-assessed maths competence and subject choice in Year 12
  – Helen Law

• Juxtaposing math self-efficacy and self-concept as predictors of long-term achievement outcomes
  – Phillip Parker
Schools and career guidance key to widening university participation (Tomaszewski, Perales & Ziang 2017)

- By age 25, 35% of students from low socioeconomic backgrounds have enrolled in university
  - Compared with 64% of students from higher socioeconomic backgrounds

- Positive school experiences and some forms of career guidance increase the chances of university enrolment
  - BUT other forms of career guidance had a negative effect

- Effects of student-teacher relationships and talks by career advisors are greater for students from low SES backgrounds
Section 4: Employment and post-school outcomes
Employment and post-school outcomes

- Adolescent occupational expectations: two decades of LSAY-based research
  – Joanna Sikora

- Who takes a gap year and why?
  – John Stanwick

- Does combining school and work affect school and post-school outcomes?
  – Alison Anlezark

- Young people not in education, employment or training (NEET)
  – Cameron Forrest
Adolescent occupational expectations (Sikora 2019)

• Teenagers typically have ambitious occupational expectations
  – 56% of boys, 66% of girls have professional expectations at age 16
  – Downward adjustment more common in lower SES students

• Occupational uncertainty is persistent from adolescence to young adulthood
Adolescent occupational expectations

**Computing and Engineering**
- **2015**: Males 21%, Females 5%
- **2009**: Males 14%, Females 4%
- **2006**: Males 17%, Females 3%
- **2003**: Males 21%, Females 6%
- **2001***: Males 16%, Females 3%
- **1999***: Males 14%, Females 3%

**Biology and Health Professions**
- **2015**: Males 12%, Females 30%
- **2009**: Males 7%, Females 16%
- **2006**: Males 10%, Females 23%
- **2003**: Males 8%, Females 22%
- **2001***: Males 5%, Females 14%
- **1999***: Males 6%, Females 17%
Section 5: An overview of school-to-work transitions (Ranasinghe & Chew)
SES was a significant predictor of students’ post-16 science participation (OR = 1.51)

Indigenous students were significantly less likely than non-Indigenous students to report post-16 participation in a science subject (OR = 0.53)

There was however a non-significant difference in the odds of females (compared to males) reporting participating in a science subject (OR = 1.03)

Compared to Australian-background students, first-generation students were more likely to report participation in a science subject (OR = 1.35)

Furthermore, foreign-background students were significantly more likely to report participation in a science subject than those from an Australian background (OR = 1.68)
• Individuals with a university degree enjoyed an income advantage over those without, even after controlling for ability, individual characteristics, and family background.

• At age 22, mean gross weekly pay of young people with a bachelor’s or higher degree did not differ significantly from that of Year 12 completers.

• However, income growth rates for young people with a bachelor’s or higher degree were higher than those of others.
  – As a result, income gaps between young people with a bachelor’s or higher degree and the rest increased by age 26.
  – At age 26, men with a university degree had 14.4% higher mean income ($6,668 per year) than men with Year 12 completion and 17.9% higher mean income ($8,276 per year) than men without Year 12, all else equal.
  – At age 26, women with a university degree had 24.2% higher mean income ($10,220 per year) than women with Year 12 completion and 33.8% higher mean income ($14,313 per year) than women without Year 12.

• The mean income of female university graduates was comparable to the mean income of male university graduates, whereas the mean income of other women was relatively lower than that of men with the same educational levels.
• Income and occupational prestige among university graduates differed by the prestige of universities and fields of study, although the effects varied by outcome examined

• Other things being equal, the prestige of universities did not have significant effects on income

• However, the prestige of universities had a significant effect on the occupational prestige of male graduates even after controlling for fields of study and other covariates
  – Compared to graduates of gumtrees, graduates of sandstones (the most prestigious universities) had significantly higher occupational prestige and graduates of other universities (the least prestigious universities) had significantly lower occupational prestige
Fields of study significantly predicted both income and occupational prestige. When other things were equal, young people who studied health-related disciplines generally enjoyed high income and occupational prestige whereas people who studied arts/humanities/social sciences had the lowest.

Income differences between these extremes averaged 15.2% for men and 21.9% for women and differences on occupational prestige 9.31 points for men and 9.14 points for women. Patterns were similar for men and women.
Multilevel logistic regression results showed that probabilities of attaining a university degree were significantly predicted by family background.

- All else equal, the odds of attaining a university degree were 2.12 times greater for individuals who had a parent with a degree.

- For every 10 additional points of parental occupational prestige, the odds of obtaining a university degree were 1.11 times greater.
Participation in school VET programs had a positive effect on Year 10 to Year 11 retention, but a negative effect on Year 11 to Year 12.

- The overall effect on Year 10 to Year 12 retention was negative, but not significant.

There was a positive impact on post-school outcomes for students in VET programs in Year 11 who did not go on to Year 12.

Vocational pathways were clear for boys studying building and engineering, but less so for other students.
Lim & Karmel 2011

• For males, all pathways are equivalent to Year 12 completion in terms of employment outcomes
  – Including early school leaving with no further VET study

• For females, certificate III is equivalent in terms of full-time employment or study, but not certificate II

• Neither certificate II nor III is equivalent to Year 12 in terms of further study outcomes
• Young men are less likely to undertake an apprenticeship if they are academically inclined

• Apprenticeships are more likely to be undertaken by young men from a lower socioeconomic background

• The growth in university participation has come from academically lower-performing young men with a higher SES
Karmel & Lui 2011

• On average, completing Year 12 is no longer sufficient for a successful pathway
  – Some further study is generally required

• For males, university study and apprenticeships after year 12 are attractive routes

• For females, the best choice is university, even for those with lower levels of academic orientation
• Starting out in a low-skill job yields lower wages than starting out in a higher-skilled job
  – Five years after leaving full-time education, the wage penalty still exists, but this scarring diminishes over time

• However, any job is better than no job
  – Wage penalty after 5 years of having no job post-full-time-education worse than taking a low-skill job

• Young people who possess high human capital have more opportunities to move to a high-skill job
  – Males are more likely to make the transition than females
  – Part-time workers are likely to remain in low-skill jobs

• There is no evidence to suggest that young people choose to stay in low-skill jobs for positive reasons such as high job satisfaction or relatively high wages
• The most influential factors for students’ aspirations for completing Year 12 include their academic performance and immigration background and whether their parents expect them to go to university.

• Students whose parents want them to attend university are four times more likely to complete Year 12 and 11 times more likely to plan to attend university compared with those whose parents expect them to choose a non-university pathway.

• Students whose friends plan to attend university are nearly four times more likely to plan to attend university.

• Two of the strongest predictors of occupational aspirations are parental influences and academic performance.
Social capital influences educational participation over and above the effects of background characteristics such as parents’ education levels, parental occupation, geographic location, cultural background, school sector and academic achievement.

For both males and females, participation in a diverse range of activities has the greatest influence on participation in education and training, followed by the strength of the relationship students have with their teachers.

- Increasing rates of participation in sport also increase educational participation for females.
• The attributes of schools do matter. Although young people’s individual characteristics are the main drivers of success, school attributes are responsible for almost 20% of the variation in TER.

• The three most important school attributes for TER are sector, gender mix, and the extent to which a school is ‘academic’.
  – For TER, the average socioeconomic status of students at a school does not emerge as a significant factor

• However, the characteristics of schools do matter for the probability of going to university, even after controlling for TER. Here, the three most important school attributes are the proportion of students from non-English speaking backgrounds, sector, and the school’s socioeconomic make-up.
• Academic school quality has a considerable differential effect on school completion for those who come from the lowest socioeconomic band. It also has a differential effect for those with low academic achievement at age 15 years.

• A differential effect is also seen in relation to the impact of academic school quality on tertiary entrance rank and the probability of going to university.

• Coming from a high socioeconomic background insulates students from early school leaving, even if they are weak performers and attend a non-academic school.
Conclusion

• “20 Years of LSAY” – released September 2019
  – 5 sections, 14 chapters

• Website: https://lsay.edu.au/

• Access LSAY data: https://lsay.edu.au/data/access
References


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