Improving Learning

Australian university outcomes: A national study comparing IBDP and non-IBDP students

Research developed for the International Baccalaureate Organization

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ACER

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Acknowledgement of Country

In the spirit of reconciliation, the authors would like to acknowledge the Traditional Custodians of Country throughout Australia, including the Wurundjeri People of the Kulin Nation, where this report was written, and their connections to land, sea and community. We pay our respect to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples. We acknowledge the Aboriginal and Torres Strait Islander people who continue to contribute to our work to improve learning, education, and research.

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Glossary

Apply/application (for university)	Used in this report in relation to requests by students for an offer to commence at university. Students apply for university in Australia through state-based tertiary admissions centres (which facilitate applications for all universities in their state), or directly to the university/ies of their choice.
Australian Tertiary Admission Rank (ATAR)	'The Australian Tertiary Admission Rank (ATAR) is a common metric for Year 12 students in Australian schools. Each year the ATAR ranks school-leavers in their state and age cohort between 0 and 99.95. An ATAR of 80 means the student did better than 80 per cent of their state age cohort, including people who did not finish school. ATARs below 30 are reported to students as "less than 30"' (Norton, 2023, p. 28). Many university courses use ATAR as a means of selecting for students for study.
Commencement (at university)	Used in this report in to indicate that a student has enrolled at university. In this report 'commencement' is often used specifically relating to the year in which a student started their studies at university.
Completion (of course)	Used in this report to denote that a student has successfully finished all requirements for graduating from a degree at an Australian university.
Domestic students	Students in university and or the school sector who are Australian citizens or permanent residents (i.e. this does not include international students).
Group of 8	A group of 8 universities in Australia that collectively work together for policy purposed. These self-grouped universities are denoted as 'research-intensive' universities (similar to Ivy League in the U.S. or Russell Group in the U.K.).
International students	Students in Australian universities or schools who are not Australian citizens or permanent residents and in the education system on the basis of a migration visa. Analyses in this report do not include international students.
Non-IBDP	Used in this report to refer to any student who did not complete the International Baccalaureate Diploma Programme.
Persistence (into second year)	A term used in this report in relation to whether a student who commenced university, progressed through first year and continued into their second year.

Secondary-school completers	Used in this report to refer to students who have completed secondary school in Australia. For the cohort analyses in this report, this term specifically refers to school completion in the year prior to commencing university.
Vocational Education and Training (VET)	In Australia, VET is a sector of education that offers skill-based training, generally with a specific job- or industry-based focus. Qualifications by VET providers are recognised through the Australian Qualifications Framework.

Executive summary

In this study, the Australian Council for Educational Research (ACER) explores the post-secondary school outcomes of students who had completed an International Baccalaureate Diploma Programme (IBDP) in Australia. ACER focusses on the transition of these students into and through university and compares IBDP students with other secondary-school completers in Australia.[1] The findings are based on national-level administrative data, offering a 'full-population' insight into progress in the years following secondary school completion for student cohorts applying for university between 2013 and 2018.[2]

From the outset, it is important to note that there are differences between students in Australia who undertake the IBDP and others ('non-IBDP' students). The IBDP population in Australia has a higher concentration of people from backgrounds that are associated with success in education (for example, high-socioeconomic status [SES] or living in a metropolitan area). With this context in mind, the interpretation and attribution of the data require some caution. Therefore, ACER's analysis focusses on statistically significant differences[3] recorded between the populations, and where possible, uses cross-tabulated data to explore groups within the population that are more alike – for example, examining outcomes of IBDP and non-IBDP students by sex and SES.

Findings

IBDP students have consistent and very high success in receiving offers of application for university overall and compared to non-IBDP students.

Across the cohorts from 2013 to 2018, almost all IBDP students who applied for university gained an offer to study. As shown in Figure E1, across cohorts, there were statistically significant differences of about 10 percentage points between the IBDP and the non-IBDP populations.

[1] Please see Glossary for definitions and explanations of relevant terms and explanations of their use in the Australian context and within this report.

[2] The datasets used in the current study are aggregated datasets rather than individual-level datasets, which precludes the construction of statistical models that allow us to "hold constant" the influence of a student characteristic, such as being female, while investigating the influence of being an IBDP student on outcomes.

[3] In this study, ACER makes multiple group comparisons using population-level data without corrections. Although, researchers debate whether population-level data enable the suspension of some assumptions regarding significance testing with multiple group comparisons—including when and how to employ corrections—ACER's z-score approach is intended to distinguish between two types of differences. First, statistically significant comparisons highlight differences that can be considered 'real'. That means the percentage differences are large enough to account for imbalances of small numbers of students in IBDP groups and large numbers of students in the corresponding non-IBDP groups. Second, other comparisons in this study feature percentage differences that might appear large but involve extreme imbalances in student group sizes, so they generate misleading findings that only 'seem' real.

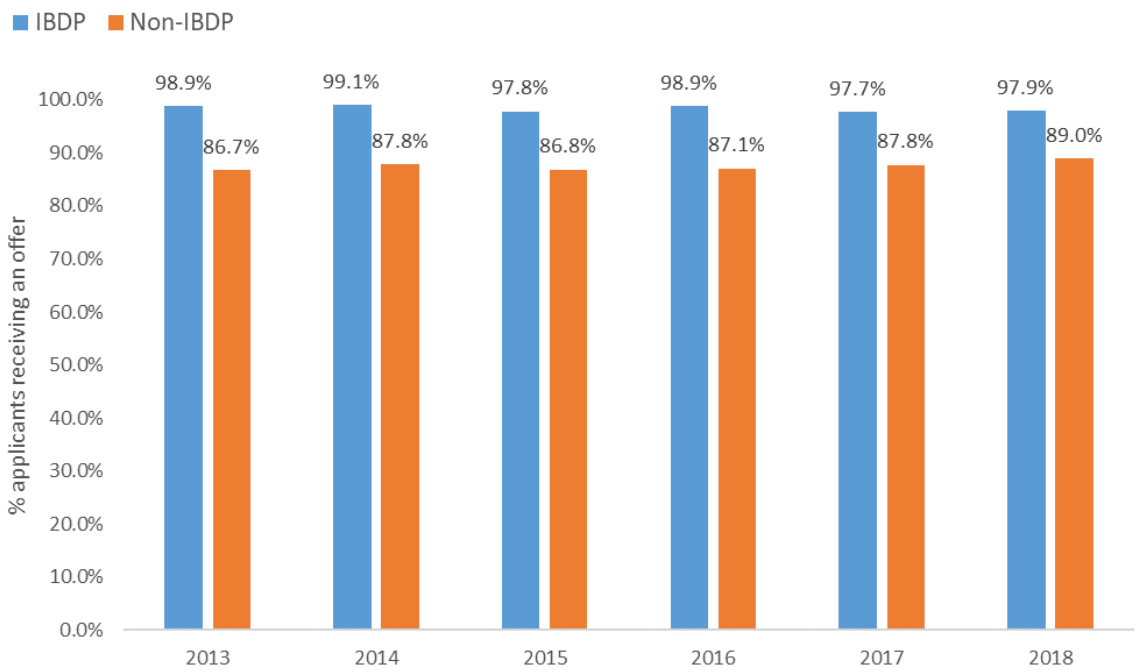

Figure E1: Success rate of secondary-school completers who applied and received an offer for university, by IBDP/non-IBDP pathway, 2013-2018

Furthermore, in analyses of outcomes by SES for these cohorts, IBDP students from a low-SES background tended to have a similar success rate to those from a high-SES background – a pattern not observed in the non-IBDP population, where success rates differ by SES.

Persistence rates into the second year of course were significantly higher for IBDP students than non-IBDP students.

For those who commenced university between 2013 and 2018, almost all IBDP students continued into the second year of course. As shown in Figure E2, this persistence rate is consistently higher by about 4 percentage points for IBDP students than non-IBDP students.

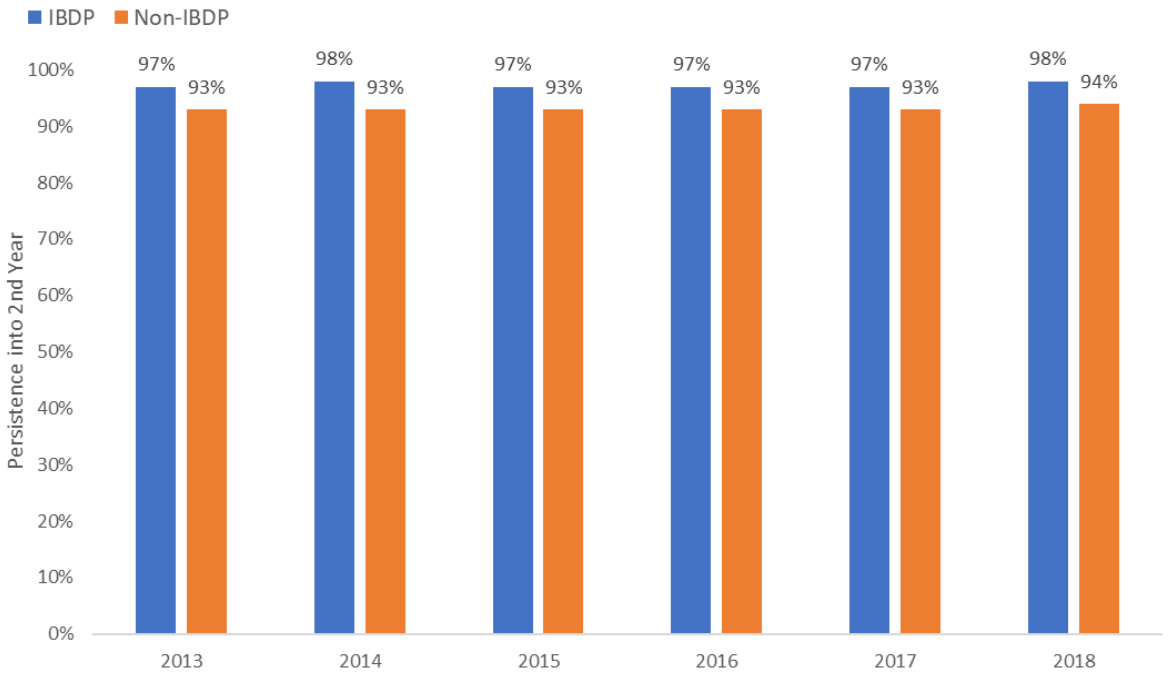

Figure E2: Persistence into second year of course for IBDP and non-IBDP students, higher education commencers 2013-2018

As we discuss in greater detail in this report, the persistence outcome was considerably more favourable for IBDP students in comparison to their non-IBDP peers for both males and females, students with an entrance score (Australian Tertiary Admissions Rank; ATAR)[4] lower than 90, students from medium-SES backgrounds, those in non-research-intensive universities and those in the humanities and social sciences. When explored in more depth, the outcomes for male IBDP students of medium-SES backgrounds are also significantly higher than for non-IBDP students with the same sex and SES characteristics.

University course completion rates are significantly higher for IBDP students than for non-IBDP students.

This outcome was consistent across a range of years following commencement of university (i.e. four years, six years and nine years following commencement) and for all cohorts from 2013 to 2018.

Four years after university commencement, completion rates for IBDP students were generally around 50% compared to 45% for non-IBDP students (approximately a 5 percentage-point gap). Six years after starting university, completion rates for IBDP students were around 80% compared to 70% for non-IBDP students (approximately a 10 percentage-point gap). By nine-years post-commencement, 91% of IBDP students had completed their qualification compared to 79% of non-IBDP students (approximately a 12 percentage-point gap). In Figure E3, we detail these differences by cohort and time from the commencement of university.

[4] 'The ATAR is a common metric for Year 12 students in Australian schools. Each year the ATAR ranks secondary-school students in their state and age cohort between 0 and 99.95. An ATAR of 80 means the student did better than 80 per cent of their state age cohort, including people who did not finish school' (Norton, 2023, p. 28).

Through more detailed analysis of outcomes data, featured in this report, we also identified that completion rates are statistically higher for IBDP students across a range of student and course characteristics.

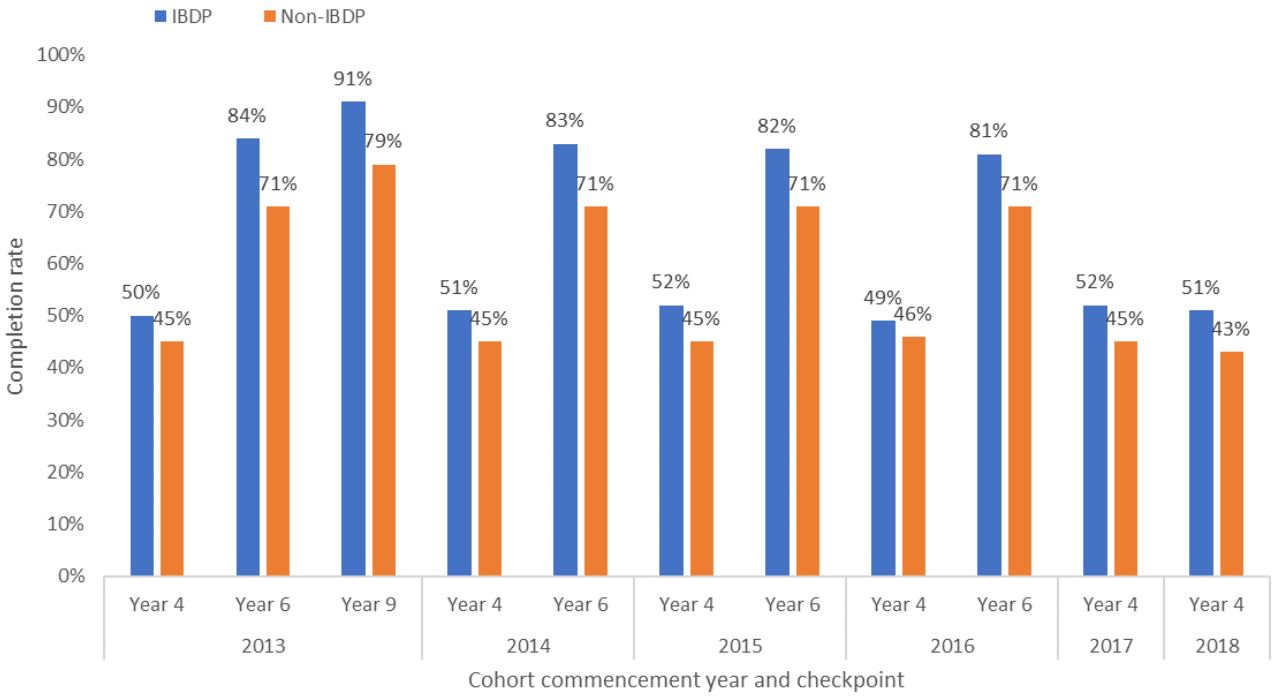

Figure E3: Course completion rates - year of commencement by checkpoint year after commencement for IBDP and non-IBDP students

There are important 'value-add' elements from the IBDP in the Australian context.

Overall, the data examined here suggest an 'added layer of benefit' of the IBDP to student groups that already demonstrate relatively high success in the Australian higher education system. For example, persistence and completion are already higher among female than male students but are higher again when comparing female IBDP students to female non-IBDP students.

There are also notable findings in other groups of students, that may not always be the obvious targets for IBDPs, and in some cases may not be strongly represented in the IBDP group. For example, as shown in Figure E4, completion rates for IBDP students (male and female) from medium- and low-SES backgrounds remain relatively high compared to their more economically advantaged peers – a pattern different from that seen in the non-IBDP student population.

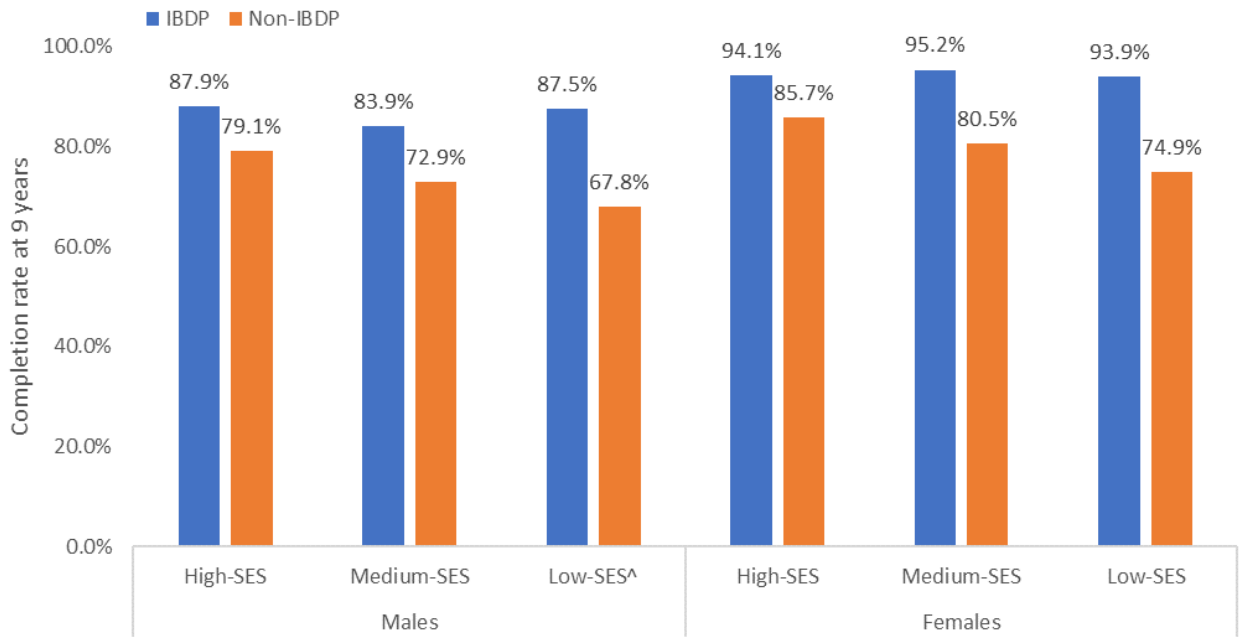

Figure E4: Completion rates nine years after commencement, by SES, sex for IBDP and non-IBDP students, 2013 commencement cohort (^ differences between groups for Low-SES males is not statistically significant)

1. Introduction

ACER has developed a study for the IB to examine commencement, persistence and completion of university in Australia by IBDP secondary-school completers. Outcomes of this group by different student and course characteristics, as well as comparisons with other secondary-school completers (non-IBDP students) are analysed in detail. To develop these new insights, ACER has used:

- National-level data, providing insight into the full population of secondary-school completers in Australia across 6 cohorts, from 2013 to 2018, enabling tracking of outcomes up to nine years prior to commencing university.

1.1 Overview

The Australian Council for Educational Research (ACER) developed this study for the International Baccalaureate (IB) Organization. In this report, the researchers focus on the pathways of Australian domestic students completing the International Baccalaureate Diploma Programme (IBDP) with emphasis on access to university in Australia and for those who commence university, persistence through and completion of their higher education studies.

Using population-level data supplied by the Australian Department of Education, ACER has designed this study to offer insight into the commencement, persistence and completion patterns of IBDP students, in comparison to those from a non-IBDP schooling pathway. The researchers have first examined the relative differences and similarities between IBDP and non-IBDP populations, and then analysed data relating to application for study in university in Australia and outcomes up to nine years following completion for these populations.

In the Australian context, little research has been undertaken relating to the pathways and outcomes of IBDP students, with a study focussing on two Australian universities and their IBDP intakes in 2012 (Edwards & Underwood, 2012) being the main prior study that specifically maps persistence.

ACER has expanded on this prior Australian work, with this study offering insight into the national picture for the persistence of students from the IBDP into and through university across a number of different cohorts. The ACER research team have used national-level data, providing the 'big-picture', and drawn on specified datasets to track progress of cohorts that commenced university in Australia between 2013 and 2018.

The remainder of this chapter provides further background to the current study. The subsequent chapters present the analyses and findings, beginning by looking at success rates of applications to university; then charting persistence beyond first year into the second year of course; followed by detailed analysis looking at completion rates four, six and nine years following commencement of university studies. The final chapter provides some reflections by the researchers in relation to the value-added aspects that we identified in these analyses. For readers less familiar with the Australian education context, a glossary of terms is provided at the beginning of this report.

1.2 The International Baccalaureate Diploma Programme in Australia

International Baccalaureate programmes are offered by schools in Australia at the primary and secondary levels as an alternative to state-based curricula and certification.

In 2023 across Australia, there were:

- 208 schools with an IB programme (including Primary Years Programme (PYP), Middle Years Programme (MYP) and Diploma Programme) [5] – which is approximately 2% of all schools[6]; and
- 80 schools which specifically offered the IBDP (~3% of all Australian secondary schools), of which 22 are government schools and 58 are non-government schools.[7]

Students who completed the IB Diploma Programme (IBDP) are the focus of this study. The Diploma Programme covers the final two years of schooling, designed to prepare students for further study at university. Those students participating in the IBDP undertake learning through six subject groups choosing a course within each (the groups are Studies in language and literature, Language acquisition, Sciences, Mathematics, Individuals in societies and Arts).[8] These are 'underpinned by the Diploma Programme core', a component of the programme which aims to 'broaden students' educational experience and challenge them to apply their knowledge and skills'.[9]

In Australia, the IBDP is recognised as equivalent to the state-based curriculum and school leaving certificates that typify most non-IBDP schools' final two years (Year 11 and Year 12).

1.3 Higher Education in Australia

An overview of the higher education landscape in Australia is provided in this section. This overview is predominantly based on a mapping study which was conducted by Professor Andrew Norton of the Australian National University's Centre for Social Research and Methods in 2023 of Australia's higher education system (Norton, 2023). Supplementary data has been taken from the Department of Education's Selected Higher Education Statistics – 2021 Student data[10] and the Quality Indicators for Learning and Teaching's 2022 Student Experience Survey.[11]

1.3.1 What does higher education in Australia look like?

The Australian higher education system consists of 42 universities and 198 non-university higher education institutions. Most universities (38 of 42) are publicly funded, and the majority of students in the higher education system (91%) are in these universities.

[5] https://www.ibo.org/programmes/find-an-ib-school/

[6] https://www.abs.gov.au/statistics/people/education/schools/2022#schools

[7] For comparison, across Australia government schools make up 55% of all secondary schools. The IBDP distribution by school sector has a disproportionate government school representation at 28%.

[8] https://www.ibo.org/programmes/diploma-programme/curriculum/. Students who do not want to study an Arts subject may opt to study an additional Science, Individuals and societies or Languages course instead.

[9] https://www.ibo.org/programmes/diploma-programme/curriculum/dp-core/

[10] https://www.education.gov.au/higher-education-statistics/student-data/selected-higher-education-statistics-2021-student-data

[11] https://www.qilt.edu.au/surveys/student-experience-survey-(ses)

All institutions must follow and deliver qualifications that align with the Australian Qualifications Framework (see Table 1), regulated by the Tertiary Education Quality and Standards Agency. These qualifications are ranked 1-10 and are outlined in the table below. Generally, higher education starts at the Bachelor level (level 7), although some institutions start at level 6. A bachelor degree is considered undergraduate level and is where the majority of secondary-school completers entering higher education start. Level 8 and beyond contains the postgraduate degrees and usually requires the completion of an undergraduate degree.

Table 1: Australian Qualifications Framework levels

	Level	Qualification
Vocational Education and Training (VET)	1	Certificate I
	2	Certificate II
	3	Certificate II
	4	Certificate IV
	5	Diploma
VET / Undergraduate higher education	6	Advanced Diploma; Associate Degree
Undergraduate higher education	7	Bachelor Degree
Postgraduate higher education	8	Bachelor Honours Degree; Graduate Certificate; Graduate Diploma
	9	Master's Degree
	10	Doctoral Degree

1.3.2 Accessing higher education

Domestic applicants for higher education in Australia commonly apply to universities or other higher education providers through individual states' tertiary admissions centres (TAC) and in 2021 more than 250,000 domestic applicants used a TAC to apply for study. An increasing number of domestic applicants (more than 160,000 in 2021) also choose to bypass the TAC and apply directly to the institution. According to Norton (2023), this may be due to applicants wanting to access early offers, as the direct applications receive offers before the TAC rounds. Of the over 340,000 applications (which came predominantly from secondary-school completers, but also from mature-age, VET and other pathways) in 2021, 82% received an offer.

Of those receiving an offer, just under half (43%) of university students starting a bachelor degree were secondary-school completers. The remaining students were from the VET sector, work, or other higher education study. In 2021, 70% of secondary-school completers used a national rank based on final year secondary school achievement, known as the Australian Tertiary Admissions Rank (ATAR)[12], for university admission (Norton, 2023).

[12] 'The ATAR is a common metric for Year 12 students in Australian schools. Each year the ATAR ranks secondary-school students in their state and age cohort between 0 and 99.95. An ATAR of 80 means the student did better than 80 per cent of their state age cohort, including people who did not finish school' (Norton, 2023, p. 28).

1.3.3 The higher education student body

There were around 600,000 commencing students in Australian higher education according to 2021 data, contributing to the 1.6 million total student population. Of the commencing students, 48% were domestic undergraduate students (290,911).

Domestic students made up 73% of the total higher education population in 2021 (i.e. undergraduate and postgraduate students). The graph below shows a steady increase in commencing domestic undergraduate students since 2013. As we show in Figure 1, there was a slight dip in 2017 and 2018, however these numbers recovered quickly.

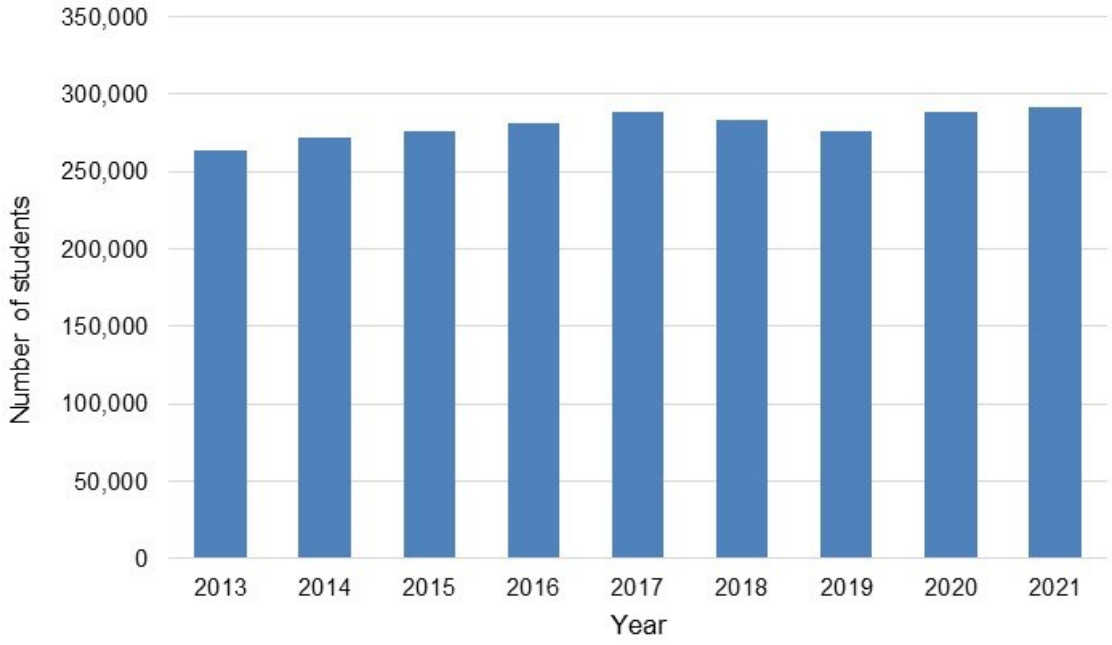

Figure 1: Commencing domestic undergraduate students, full year 2013 to 2021

1.3.4 Student experience in higher education

The Student Experience Survey, conducted annually across all higher education providers by the Australian Department of Education, collects responses from students studying higher education and is used to measure universities on their teaching quality, student support, and other factors. The survey targets commencing and later-year students.

In Figure 2, we include student ratings for each of the five focus areas, and how they responded to the item about the quality of their entire educational experience. The focus areas are based on the average scores of multiple questions in the survey and are represented as percentages of positive ratings. Overall, commencing students rated their experience more positively than later-year students across all focus areas except for Skills Development. This is potentially due to commencing students being more likely to engage with support services than later-year students, and later-year students having more opportunity to develop skills throughout their studies. While not explored in detail through this study, higher levels of persistence in education are linked to positive experiences (Edwards & McMillan, 2015).

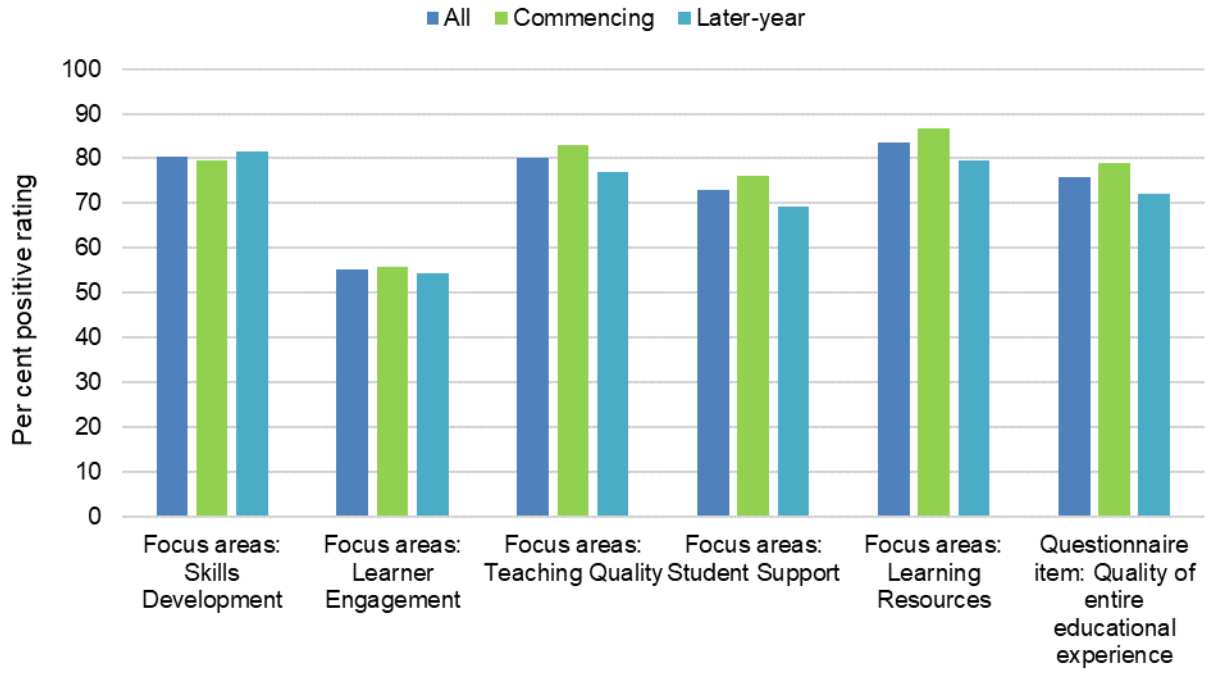

Figure 2: Student experience among all course levels from all provider types by level and stage of study

1.4 This study

ACER researchers have used data that the Australian Department of Education supplied for this study. The data is drawn from two broad collections collated by the Department:

- Higher education applications and offers data: an annual dataset containing data supplied by tertiary admissions centres (TAC) and universities across Australia, detailing the applications made for study at university (and the characteristics of applicants), and whether these applications resulted in a university offer.[13]
- Higher education cohort-tracking data: a dataset that uses a unique student identifier to track the progress of individual students through the higher education system, offering detailed understanding of persistence and completion over a long period of time.[14]

For this research, the ACER research team developed a specification for the data in this study. The Department then provided a set of aggregated, de-identified tables for analysis.

Data from these sources is valuable as it is 'full population' information and as such provides a powerful insight into real trends and outcomes across a whole cohort. However, given the sensitive nature of the data, it is not provided to researchers on a unit-record basis[15]. The Department's protocols require researchers submitting detail relating to the data required, at which point the Department reviews and then provides the requested data in aggregated tables. Cells within the tables which have a count between 1 and 4 are supressed to ensure confidentiality. This data

[13] https://www.education.gov.au/higher-education-statistics/undergraduate-applications-offers-and-acceptances-publications

[14] https://www.education.gov.au/higher-education-statistics/completion-rates-cohort-analyses

[15] The term 'unit-record' refers to the structure of the dataset provided. A unit-record dataset would provide a distinct entry (or row of data) to detail the characteristics of each individual captured in the dataset, thus enabling very nuanced insight into each individual in the population.

provision protocol allows for the big picture to still be explored, but limits the extent to which very specific analyses, for example regression and multi-level modelling, can be carried out.

Overall, the data provided for this study offers a new, rich insight into progress into and through university in Australia for the cohort of focus. Relevant detail relating to the different aspects of the data are explained below.

1.4.1 The cohort-tracking datasets, 'checking in' on progress through higher education

The status of students in each commencement cohort (i.e., those who entered higher education in 2013, 2014, etc.) is 'checked' using the cohort-tracking dataset after four, six and nine years. At each of these checkpoints, students are classified as having continued into the second year of course (i.e. persistence into second year) or having left at some point before beginning their second year.

Those who continued into their second year of course can be further classified as having completed their studies (at some time up to the checkpoint year), still at university at the checkpoint time, or having discontinued their studies at some point between their second year and the checkpoint. The three checkpoint times and the different classifications of student status are shown in Figure 3, using the 2013 cohort as an example. The four-year check, conducted at the beginning of 2017, provides an update on progress after four academic years (as the Australian academic year runs from February through to November), with the six-year check conducted at the beginning of 2019 and the nine-year check conducted at the beginning of 2022.

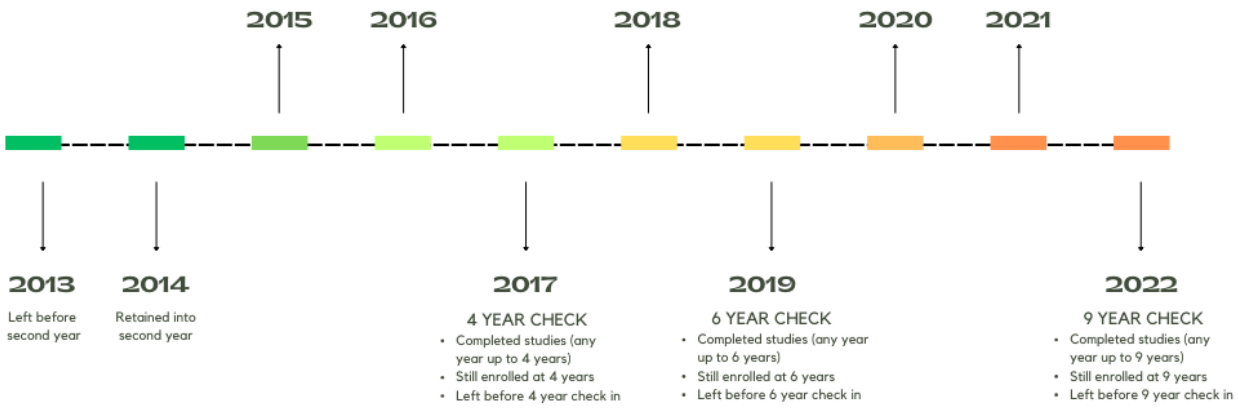

Figure 3: 2013 Commencement cohort – Check-in points using the cohort-tracking dataset

The majority of the analysis in the report is based on the tracking of the 2013 commencement cohort for a period of nine years up to 2022. In the Australian context, this nine-year checkpoint is considered the most accurate for use in gaining a true indication of the relative completion of a bachelor degree as it allows time for study breaks, changing from full- to part-time and in some cases changing course. This nine-year completion figure is consistently used by the Australian Department of Education in reporting on outcomes across multiple populations.[16]

[16] See here for further information on the Department reporting: https://www.education.gov.au/higher-education-statistics/completion-rates-cohort-analyses

Further analysis is also undertaken based on this and subsequent cohorts of commencers over a shorter period of time in order to assess whether there are notable differences in the progress of IBDP students in different cohorts and to establish whether the 2013 cohort results are able to be generalised across other commencement cohorts.

As such, commencers in 2013, 2014, 2015 and 2016 have been tracked over a six-year period. Commencers in 2013, 2014, 2015, 2016, 2017 and 2018 have also been tracked over a four-year period, which aligns with minimum completion times for most full-time bachelor degree students.[17]

In Table 2, we provide an overview of these cohorts.

Table 2: Cohorts used in this study – number of students and years of tracking

Cohort commencement year	Number of commencing students		Years tracked		
	IBDP students	Non-IBDP students	Nine-year	Six-year	Four-year
2013	1,041	106,156	2013-2022	2013-2019	2013-2017
2014	1,282	105,825	-	2014-2020	2014-2018
2015	1,319	101,424	-	2015-2021	2015-2019
2016	1,357	99,695	-	2016-2022	2016-2020
2017	1,522	105,108	-	-	2017-2021
2018	1,489	103,885	-	-	2018-2022

The numbers of IBDP and non-IBDP students for the 2013 cohort in each of the student and course characteristic groups are presented in Table 3. Where the number of students in a particular group is between 1 and 4, the actual value is suppressed in the aggregated data collection. This was the case for IBDP students who identified as having a First Nations background. Given the suppression of values for one category of this dichotomous variable, the researchers were unable to conduct specific analyses by First Nations background in this study.

[17] Many Australian bachelor degrees are the equivalent of three years full-time study, but some (including engineering) are at least four years, and others, such as the Bachelor of Medicine, Bachelor of Surgery (MBBS), can be up to six years.

Table 3: Student and course characteristics of the IBDP and non-IBDP students in the 2013 commencement cohort (n)

Student and Course Characteristics		IBDP students (n = 1,041)	Non-IBDP students (n = 106,156)
Sex	Female	630	59,924
	Male	411	46,232
ATAR band	90-100	745	21,557
	80-89	142	17,225
	70-79	56	10,787
	60-69	6	4,320
	50-59	0	1,824
	30-49	0	92
	ATAR not provided/not required	92	25,261
Language background	English-speaking	972	102,592
	LBOTE	69	3,564
Socioeconomic status[18]	High	63	37,898
	Medium	338	52,412
	Low	49	14,929
	Not available	24	917
Geographic location[19]	Metropolitan	948	84,327
	Regional	68	20,204
	Remote	NA	712
	Not available	23	913
Type of university	Group of 8[20]	801	34,353
	Other	240	71,803
Broad field of study	Natural and Physical Sciences	283	16,295
	Information Technology	14	3,262
	Engineering and Related Technologies	98	8,720
	Architecture and Building	17	2,758
	Agriculture, Environmental and Related Studies	28	1,737
	Health	128	17,078
	Education	10	9,164
	Management and Commerce	191	19,892
	Society and Culture	365	28,571
	Creative Arts	70	10,744
	Food, Hospitality and Personal Services	0	8
Narrow field of study	Law	104	4,191
	Medical studies	17	659

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank

[18] Based on measure of socioeconomic status (SES) attributed to home residence/postcode listed on application to university

[19] Based on home residence on application to university

[20] Australia's self-grouped 'research-intensive' universities (similar to Ivy League in the U.S. or Russell Group in the U.K.).

1.4.2 Differences between the IBDP students and non-IBDP students who commence university

Through many analyses in this report, there are comparisons between 'IBDP' and 'non-IBDP' students. As a context to interpreting the results of these comparisons, analyses of the relative differences of the IBDP and non-IBDP groups was undertaken. The results below show that in a number of ways, these groups of students are different – and as such interpretation of findings that follow in the report need to keep these differences in mind.

The non-IBDP group for comparison with the IBDP students in this study are those who did not complete an IBDP and were applying an Australian higher education provider directly following completion of secondary school (rather than including older students who may have applied for university courses based on work or life experience). The commencement cohorts (i.e. the groups of students who began a qualification) were further restricted to students who applied for a bachelor degree and who commenced full-time in this qualification.

The proportions in IBDP and non-IBDP groups with each characteristic, student or course-related, were compared statistically using two proportion z-tests, two-tailed (see Appendix for further methodological information). The two-tailed approach is better aligned to the guiding research questions, which asked whether IBDP students differed (in terms of representation or outcomes) from the general, non-IBDP student population.

In this study, ACER makes multiple group comparisons using population-level data without corrections. Although, researchers debate whether population-level data enable the suspension of some assumptions regarding significance testing with multiple group comparisons—including when and how to employ corrections—ACER's z-score approach is intended to distinguish between two types of differences. First, statistically significant comparisons highlight differences that can be considered 'real'. That means the percentage differences are large enough to account for imbalances of small numbers of students in IBDP groups and large numbers of students in the corresponding non-IBDP groups. Second, other comparisons in this study feature percentage differences that might appear large but involve extreme imbalances in student group sizes, so they generate misleading findings that only 'seem' real.

In Table 4, we provide a summary of the comparison of the 2013 commencement cohorts of IBDP students and non-IBDP students on a range of key demographic variables, with the last column including an asterisk (*) where a statistically significant difference was identified in favour of the IBDP student group.

Relative to the group of non-IBDP students commencing a bachelor degree and studying full-time in 2013, IBDP students were more commonly female, from a language background other than English, from high-SES backgrounds, living in a metropolitan area, and had a tertiary admission ranking in the top band (90 and over). Furthermore, compared to non-IBDP students, there was greater representation of IBDP students in universities that were members of the Group of 8,[21] in courses in the Natural and Physical Sciences and in the field of Law or Medical studies.

[21] Australia's self-grouped 'research-intensive' universities (similar to Ivy League in the U.S. or Russell Group in the U.K.)

For some characteristics, there was higher representation in the non-IBDP group of students than in the IBDP group of students. The non-IBDP commencement cohort of 2013 had a higher proportion of students who were male, from medium- or low-SES backgrounds, and living in regional or remote areas than was the case for the IBDP cohort. Non-IBDP students were also more commonly at universities that were not part of the Group of 8, and in courses in Information Technology, Agriculture, Environment and related studies, Health, Education and Creative Arts compared to IBDP students (further details in Appendix, Table A1).

Table 4: Comparing IBDP and non-IBDP cohorts – characteristics where IBDP student population has higher representation than non-IBDP population

Student characteristics		Proportion in non-IBDP cohort (2013 commencement cohort) %	Proportion in IDBP cohort (2013 commencement) %	Representation among IBDP students significantly higher than among non-IBDP students
Sex	Male	44	39	
	Female	56	61	*
Language background	English-speaking	97	93	
	LBOTE	3	7	*
Socioeconomic status	High	36	61	*
	Medium	49	32	
	Low	14	5	
ATAR[22]	90 and over (highest band)	24	72	*
	Lower than 90	52	19	
	Not provided	24	9	
Geographic location	Metropolitan	79	91	*
	Regional	19	7	
	Remote	1	NA	
University group	Group of 8	32	77	*
	Other universities	68	23	
Broad field of study	Natural and Physical Sciences	15	27	*
	Information Technology	3	1	
	Engineering and related Technologies	8	9	
	Architecture and Building	3	2	
	Agriculture, Environmental and related studies	2	3	
	Health	16	12	
	Education	9	1	
	Management and Commerce	19	18	
	Society and Culture	27	35	
	Creative Arts	10	7	
	Food, Hospitality and Personal Services	0	<1	
Narrow field of study	Law	4	10	*
	Medical studies	1	2	*

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank

[22] Note that from this point onwards in the report, the reporting of ATAR has been aggregated into fewer groups due to the small numbers of students in some individual bands (as seen in Table 3).

When comparing the outcomes for these groups of students, it is important to keep in the mind that the group of IBDP students who entered university in 2013 differed from the group of non-IBDP students who began their studies at the same time on a number of characteristics that previous research has suggested may be associated with better outcomes such as higher rates of admission to university, persistence into the second year of course or completion of course (see for example, Edwards & McMillan, 2015; Marks, 2007).

The datasets used in the current study are aggregated datasets rather than individual-level datasets, which precludes the construction of statistical models that allow us to "hold constant" the influence of a student characteristic, such as being female, while investigating the influence of being an IBDP student on outcomes.

Instead, a stepwise approach to the analysis was employed – the first step, establishing that there are pre-existing differences in the IBDP commencement group compared to the non-IBDP commencement group (as demonstrated in the analysis above). The second step was to examine the outcome in question (admission in Chapter 2, persistence in Chapter 3, completion in Chapter 4) for the entire group of students and record differences for various student and course characteristics, and Step 3 to then compare the outcomes for IBDP student and non-IBDP students.[23] The final step, in Chapter 5, is to bring these results together and consider where being an IBDP student may be influencing outcomes considering the results in each of the previous steps.

[23] Note that in all persistence and completion calculations, the 'denominator' used is students who commenced university following an offer to study (not the total number of each cohort that applied to study at university).

2. Admissions for IBDP and non-IBDP secondary-school completers in Australia

IBDP students have consistent and very high success in applying for university overall and compared to non-IBDP students.

- Across the cohorts from 2013 to 2018, almost all IBDP students who applied for university gained an offer to study.
- These outcomes were statistically about 10 percentage points higher than those of non-IBDP students.
- Analyses of outcomes by SES show IBDP students from a low-SES background have a similar success rate to those from a high-SES background – a pattern not observed in the non-IBDP population, where success rates differ by SES.

Information about applications to Australian universities by domestic students is collated by the Australian Department of Education each year. This information compiles Australian state-based data from TACs and applications made direct to universities to develop a national-level picture of demand for university in Australia. The Department of Education also compiles information about offers made to applicants for a place at university. Combining the application and the offer data enables insight into the 'success' of applicants in gaining an offer to university.

For this project, specific data from the Department of Education was compiled to identify secondary-school completer applicants to university who had completed the IBDP and a comparison group of secondary-school completers who were not IBDP students. Data from cohorts of applicants for university from 2013 to 2018 were examined – matching the cohorts used for analysis in the other chapters of this report.

Overall, for people completing schooling in Australia and applying to university, rates of offers are relatively high. Broadly, there was an 87-89% offer rate achieved by secondary-school completers across the years of focus in this report. However, while this overall rate is high, the success rate for IBDP completers is very high, with almost all applicants receiving an offer. As shown in Figure 4, IBDP students have consistently had very high success in applying for university in Australia, a rate about ten percentage points higher than other secondary-school completers across the years of analysis here.

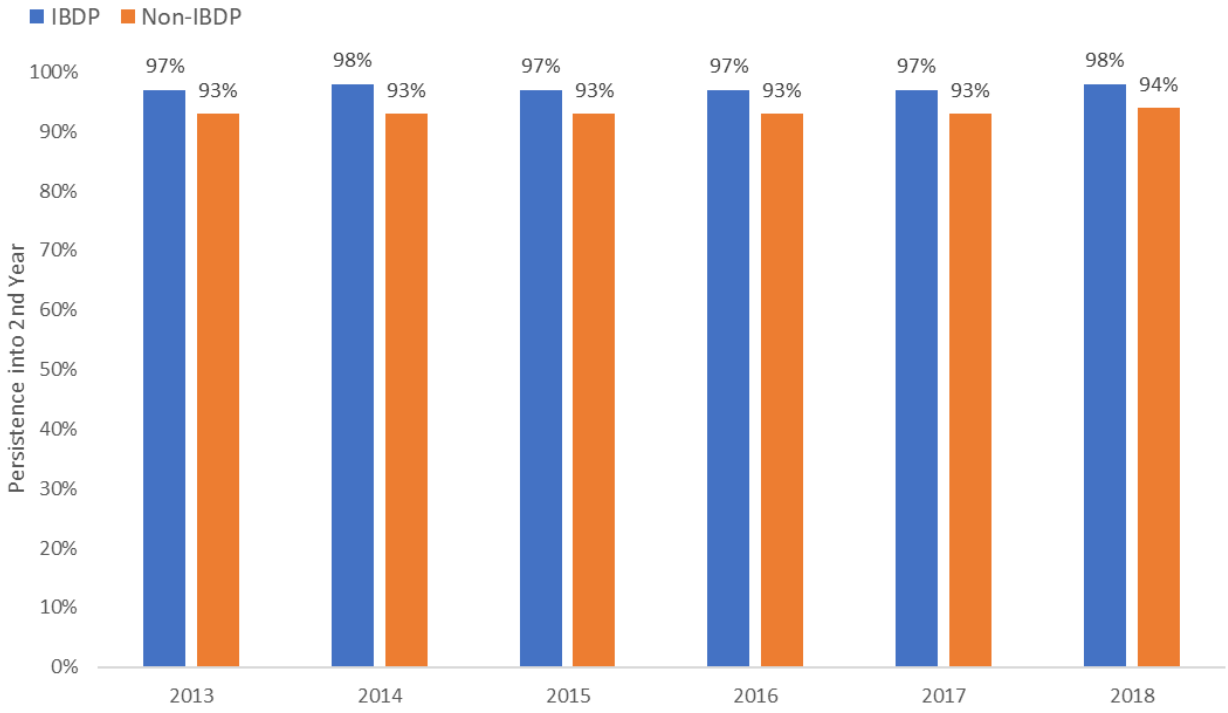

Figure 4: Success rate of secondary-school completers who applied and received an offer for university, by IBDP/non-IBDP pathway, 2013-2018

In exploring these outcomes in more detail, analysis of applications and offers by SES was undertaken, again looking at IBDP and non-IBDP groups and their relative success in gaining an offer to university. The overall trend across Australia has seen a larger proportion of secondary-school completers from high-SES backgrounds receive an offer (more than 90% success rate across the years studied), compared to those from medium-SES backgrounds (on average about 87% success) and those from low-SES background (about 84%). This is a pattern explored and discussed in other studies of this kind (Edwards & McMillan, 2015; McMillan, 2002; Nelson et al., 2017), and is typical of education access and outcomes seen more broadly (Gale et al., 2010; Marginson, 2002).

However, when exploring the relative offer rates of IBDP students by SES, the data shows that there are smaller (and in some years no) differences apparent in the application to offer rates of these students. In Figure 5, we provide detail into the application and offer rates of IBDP and non-IBDP students by SES on a year-by-year basis. The figure helps to highlight the 'smoothing out' of the rates of offer to university by SES, showing that IBDP students from low-SES backgrounds tended to have a similar rate of offer than those from medium or high-SES backgrounds.

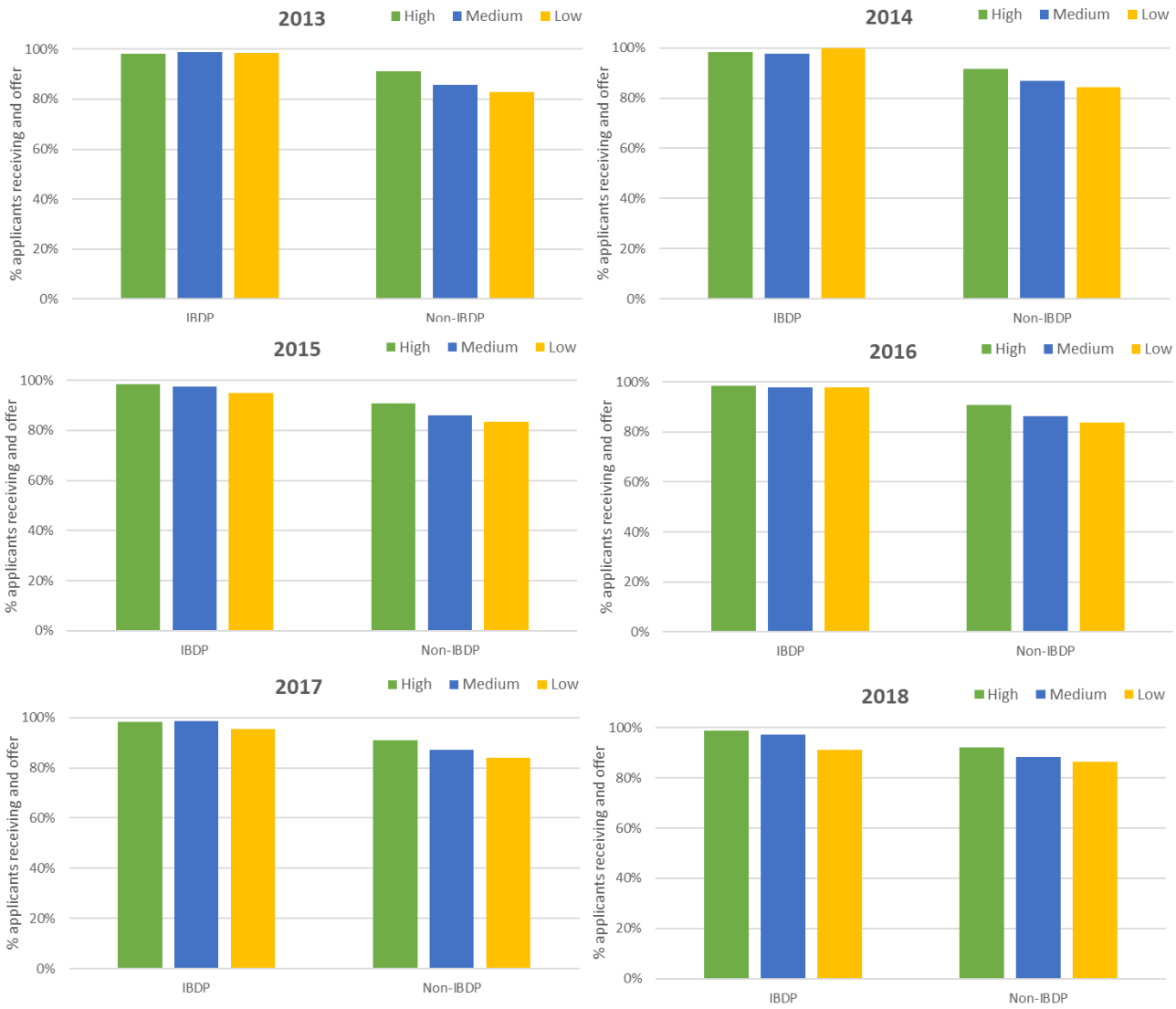

Figure 5: Success rate of secondary-school completers who applied and received an offer for university, by socioeconomic status and IBDP/non-IBDP pathway, 2013-2018

3. Persistence into second year of course for IBDP and non-IBDP students

Persistence rates into the second year of course are significantly higher for IBDP students than non-IBDP students.

- For university commencers between 2013 and 2018, almost all IBDP students continued into their second year of course, a rate that is consistently higher (by about 4 percentage points) than seen for non-IBDP students.
- This outcome was considerably more favourable for IBDP students in comparison to their non-IBDP peers for both males and females, students with an ATAR lower than 90, students from medium-SES backgrounds, those in non-research-intensive universities and those in the humanities and social sciences.
- When explored in more depth, the outcomes for male IBDP students of medium-SES backgrounds are also significantly higher than for non-IBDP students with the same characteristics.

Successful completion of the first year of university is important in the context of higher education in Australia (Baik et al., 2015). National cohort-tracking data, examining commencement cohorts from 2013 to 2018 show that persistence rates into the second year of course in Australian universities are very high among the secondary-school completer cohorts of focus in the study. The data shown in Figure 6 also demonstrate that these rates were higher for young people who had undertaken an IBDP than for non-IBDP students. Differences for each cohort are in the range of 4 to 5 percentage points, and are all statistically significant (see Appendix, Table A3).

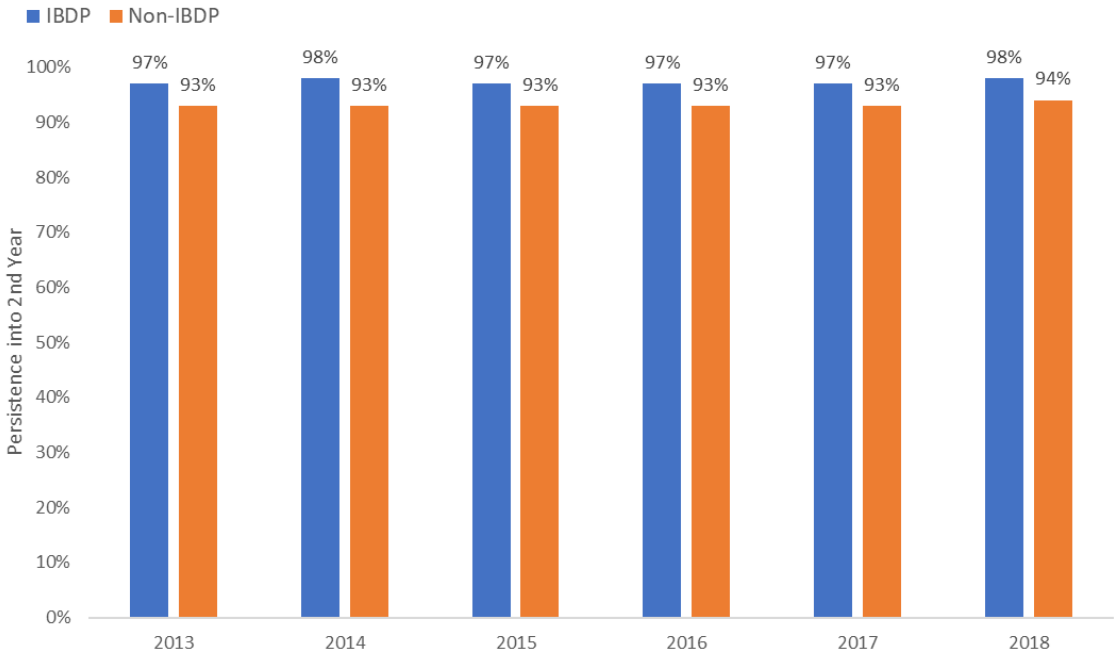

Figure 6: Persistence into second year of course for IBDP and non-IBDP students, higher education commencers 2013-2018

3.1 Persistence into second year of course by student and course characteristics

Research in the Australian context has identified a number of student and course characteristics that are associated with higher rates of persistence in the second year of course (see for example Baik et al., 2015; Devlin, 2013; Edwards & McMillan, 2015; Hagel et al., 2012; McMillan, 2011; Nelson et al., 2017). Some of these, such as study load (highlight full-time students are more likely to persist with their studies) and application pathway (mature-age entrants are less likely to persist with their studies than secondary-school completer entrants) are held constant in the current study by limiting students included in the commencement cohorts to secondary-school completers (either those who completed an IBDP or those who completed Australian secondary school qualifications) who commenced full-time in a bachelor degree.

Differences in persistence for various student and course characteristics were also identified in each of the commencement cohorts for which data was collected in this study. The focus below and in subsequent chapters has been on the 2013 commencement cohort, outcomes for this group can be taken as indicative of outcomes in the other cohorts (see Appendix tables for cohort comparisons).

In accordance with previous research in Australian universities, rates of persistence into the second year of course for the **whole cohort** (i.e. not comparing IBDP and non-IBDP groups) examined in this study were higher:

- Among female students compared to male students
- Among students from a non-English-speaking background compared to students from an English-speaking background
- Among students with higher ATAR scores – 90 to 100 – compared to students with lower ATAR scores
- Among students who provided an ATAR for application compared to students who did not provide or were not required to provide an ATAR for their course
- Among students from high-SES backgrounds compared to students from other SES backgrounds
- Among students in metropolitan locations compared to students in other areas
- Among students studying at one of the Group of 8 universities compared to students at other institutions
- Among students in Law compared to students in other studies
- Among students in Medical Studies compared to students in other studies.

These national-level outcomes are displayed in Figure 7 and Figure 8 (details in Appendix, Table A4). All comparisons were conducted using two proportion z-tests, two-tailed, with statistical significance indicated using an asterisk (*).

Student characteristics		All students	Group in which persistence is statistically higher
Sex	Females	94%	*
	Males	93%	
Language background	English-speaking	93%	
	LBOTE	96%	*
ATAR scores	90-100	98%	*
	Lower than 90	88%	
	Not provided	90%	
Socioeconomic status	High	95%	*
	Other	92%	

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank

Figure 7: Persistence into second year of course for the whole 2013 commencement cohort by student characteristics

Course characteristic		All students	Group in which persistence is statistically higher
Type of university	Group of 8	97%	*
	Other	91%	
Broad field of study	Natural and Physical Sciences	96%	
	Information Technology	91%	
	Engineering and related Technologies	96%	
	Architecture and Building	94%	
	Agriculture, Environmental and related studies	93%	
	Health	94%	
	Education	91%	
	Management and Commerce	93%	
	Society and Culture	93%	
	Creative Arts	91%	
Narrow field of study	Law	98%	*
	Other courses (i.e. not Law)	93%	
	Medical studies	97%	*
	Other courses (i.e. not Medical Studies)	93%	

Figure 8: Persistence into second year of course for the whole 2013 commencement cohort by course characteristics

When comparing IBDP students with non-IBDP students, there are significant differences between the persistence of these groups on a number of student and course characteristics.[24] These are listed below and displayed in Figure 9 and Figure 10 (detailed in Appendix, Table A5):

- Female IBDP students had higher persistence rates than non-IBDP female students
- Male IBDP students also had higher persistence rates than non-IBDP male students
- IBDP students from English-speaking backgrounds had higher persistence than non-IBDP students from English-speaking backgrounds
- IBDP students with ATAR scores lower than 90 had higher persistence than non-IBDP students with ATAR scores lower than 90
- IBDP students who did not provide an ATAR on application had higher persistence than non-IBDP students who did not gain an offer to their course based on their ATAR
- IBDP students from a medium-SES background had higher persistence than non-IBDP students from a medium-SES background
- IBDP students from metropolitan locations had higher persistence than non-IBDP students from metropolitan locations
- IBDP students from regional areas had higher persistence than non-IBDP students from regional areas
- IBDP students who were studying at universities that were not part of the Group of 8 had higher persistence than non-IBDP students at these universities
- IBDP students in the broad field of study Society and Culture had higher persistence rates compared to non-IBDP students in this field of study.

[24] Persistence rates for IBDP and non-IBDP students with various characteristics were compared using two proportion z-tests (two-tailed).

Student characteristics		IBDP students	Non-IBDP students	IBDP persistence is statistically higher
Sex	Females	97%	94%	*
	Males	96%	93%	*
Language background	English-speaking	97%	93%	*
	LBOTE	93%	96%	
ATAR scores	90-100	97%	98%	
	Lower than 90	97%	92%	*
	Not provided	99%	90%	*
Socioeconomic status	High	97%	95%	
	Medium	97%	93%	*
	Low	96%	91%	
Geographic location	Metropolitan area	97%	94%	*
	Regional area	100%	91%	*

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank

Figure 9: Persistence into second year of course for IBDP and non-IBDP students by student characteristics (2013 commencement cohort)

Course characteristic		IBDP students	Non-IBDP students	IBDP persistence is statistically higher
Type of university	Group of 8	97%	97%	
	Other	98%	91%	*
Broad field of study	Natural and Physical Sciences	98%	96%	
	Information Technology	93%	91%	
	Engineering and related Technologies	97%	96%	
	Architecture and Building	94%	94%	
	Agriculture, Environmental and related studies	100%	93%	
	Health	98%	94%	
	Education	90%	91%	
	Management and Commerce	96%	93%	
	Society and Culture	96%	93%	*
	Creative Arts	97%	91%	
Narrow field of study	Law	96%	98%	
	Medical studies	100%	97%	

Figure 10: Persistence into second year of course for IBDP and non-IBDP students by course characteristics (2013 commencement cohort)

IBDP students who had not provided an ATAR when applying for their course had higher persistence into the second year of course compared to non-IBDP students who had not provided an ATAR, although it should be noted that this group of students could be quite varied in their background and their course of study. Further investigation of this particular group of students – those who apply to tertiary studies without providing an ATAR – would require more detailed information, such as student-level data, which were not available for the current study.

3.2 Diving deeper to explore outcomes by student and course characteristics together

In order to further explore the differences between groups of students and their persistence into second year, specifications we made to collate data from the cohort-tracking dataset that would allow for analyses of multiple characteristics and their influence on outcomes. IBDP students and non-IBDP students were cross-classified by sex and SES, sex and broad field of study, and SES and broad field of study to investigate any potential differences in those group's persistence into second year of course. This additional layer of analyses helped to dive deeper and better understand differences in outcomes at university (details in Appendix, Table A6).

Across the range of comparisons undertaken in these analyses, persistence into the second year of course was significantly higher:

- For male IBDP students from a medium-SES background compared to non-IBDP male students of a similar socioeconomic background, 97% compared to 92%.
- For female IBDP students studying Society and Culture courses compared to non-IBDP female students studying similar courses, 97% compared to 94%.

4. Course completion for IBDP and non-IBDP students

Course completion rates are significantly higher for IBDP students than for non-IBDP students. This outcome was consistent across a range of years following commencement of university (i.e. four years, six years and nine years following commencement) and for all cohorts from 2013 to 2018.

- Four years after university commencement, completion rates for IBDP students were generally around 50% compared to 45% for non-IBDP students. Six years after starting university, completion rates for IBDP students were around 80% compared to 70% for non-IBDP students. By nine-years post-commencement, 91% of IBDP students had completed their qualification compared to 79% of non-IBDP students.
- Through more detailed analysis of outcomes data, the researchers also identified that completion rates are statistically higher for IBDP students across a range of student and course characteristics.

As noted earlier, the data collated for this study allows for monitoring the completion 'status' of students at a number of checkpoints in the years following the commencement of a degree. This data is used below with students commencing their studies over six different cohorts – from 2013 to 2018. The 2013 cohort offers the most comprehensive data, because it charts the persistence and completion rates of this cohort over nine years following commencement of their studies – as noted earlier, this is considered the most appropriate timeframe for gaining a true picture of course completion in the Australian context. For the 2014, 2015 and 2016 cohorts, the data enables progress to be monitored for six years following commencement. For the 2017 and 2018 cohorts, this study has data to check on status four years after the student had commenced university.

4.1 Course completion rates for IBDP students compared to non-IBDP students

In Figure 11, we show completion rates for each cohort, by IBDP and non-IBDP students, at each of the check-in years available (details in Appendix, Table A6).

Although it is possible to complete a bachelor degree in three to four years,[25] the reality is that many students, both IBDP and non-IBDP students, were still in their studies at the four-year checkpoint, and completion rates were generally around 50% for IBDP students and 45% for non-IBDP students at this time. Four-year completion rates for IBDP students in each commencement cohort (2013 to 2018) were significantly higher than for non-IBDP students in their cohort.

At the six-year checkpoint, completion rates had increased substantially, with most students having completed their studies by this time. Completion rates for IBDP students remained significantly higher than for non-IBDP students in their commencement cohort (2013 to 2016), by a margin of around 10 percentage points.

[25] As mentioned in an earlier footnote, many Australian bachelor degrees are the equivalent of three years full-time study, but some (including engineering) are at least four years, and others, such as the Bachelor of Medicine, Bachelor of Surgery (MBBS) can be up to six years.

At the nine-year checkpoint for the 2013 commencement cohort, the completion rate for IBDP students remained significantly higher than for non-IBDP students – 91% compared to 79%.

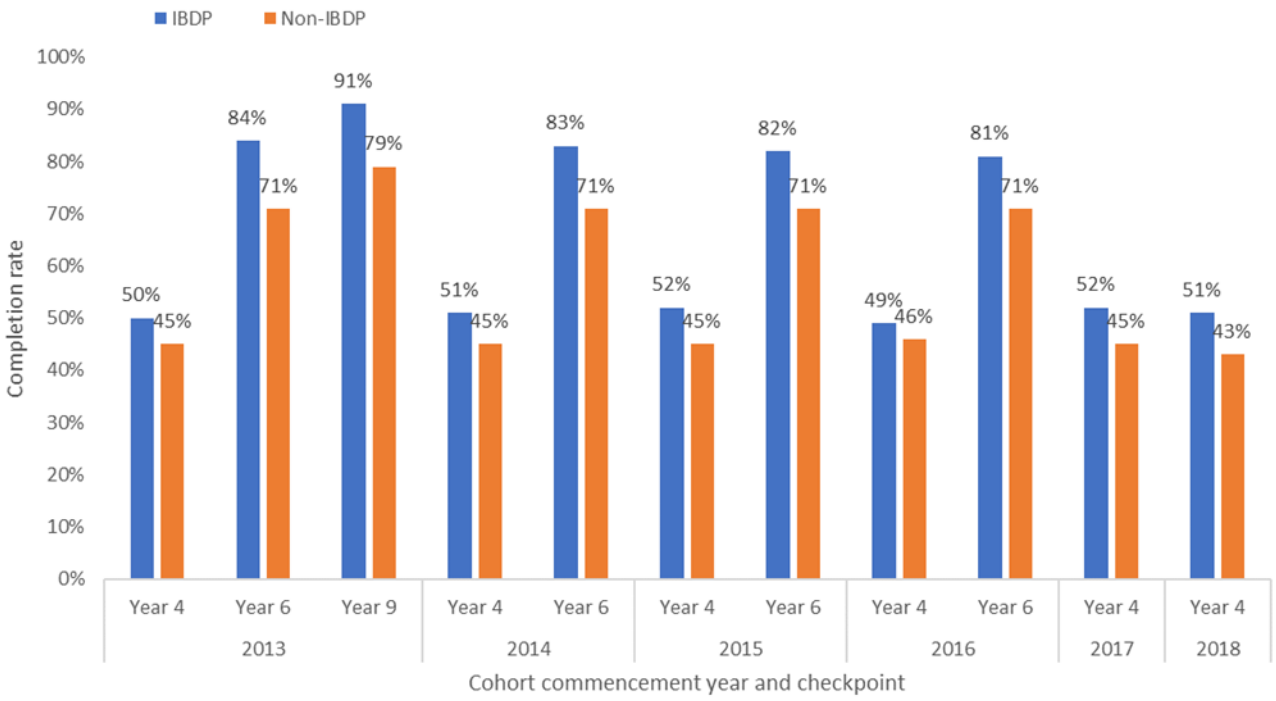

Figure 11: Completion rates - year of university commencement by check-in year after commencement for IBDP and non-IBDP students

4.2 Course completion by student and course characteristics

The rates of course completion among students with different background characteristics and in different courses in the 2013 commencement cohort (including IBDP and non-IBDP students) were calculated using the nine-year checkpoint data. All comparisons were conducted using two proportion z-tests, two-tailed, with statistical significance indicated using an asterisk (*). These rates are provided as background to the later comparison of completion rates between IBDP and non-IBDP students.

As shown in Figure 12 and Figure 13, completion rates for the 2013 **whole commencement cohort** were higher:

- Among female students compared to male students
- Among students from a non-English speaking background compared to students from an English-speaking background
- Among students with higher ATAR scores – 90 to 100 – compared to students with lower ATAR scores
- Among students who provided an ATAR to enter their studies compared to those who did not provide an ATAR
- Among students from high-SES backgrounds compared to students from other socioeconomic backgrounds
- Among students in metropolitan locations compared to students from other locations

- Among students studying at one of the Group of 8 universities compared to students at other institutions
- Among students studying Law compared to students in other fields of study
- Among students in Medical Studies compared to students in other fields of study.

Student characteristics		All students	Group in which completion is statistically higher
Overall		79%	
Sex	Females	82%	*
	Males	75%	
Language background	English-speaking	79%	
	LBOTE	81%	*
ATAR scores	90-100	93%	*
	Lower than 90	75%	
	Not provided	72%	
Socioeconomic status	High	83%	*
	Other	76%	
Geographic location	Metropolitan area	79%	*
	Regional area	75%	

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank

Figure 12: Completion of course for the whole 2013 commencement cohort by student characteristics

Course characteristic		All students	Group in which completion is statistically higher
Type of university	Group of 8	88%	*
	Other	74%	
Broad field of study	Natural and Physical Sciences	83%	
	Information Technology	68%	
	Engineering and related Technologies	80%	
	Architecture and Building	79%	
	Agriculture, Environmental and related studies	80%	
	Health	83%	
	Education	74%	
	Management and Commerce	80%	
	Society and Culture	78%	
	Creative Arts	76%	
Narrow field of study	Law	90%	*
	Other courses (i.e. not Law)	78%	
	Medical studies	89%	*
	Other courses (i.e. not Medical studies)	79%	

Figure 13: Completion of course for the whole 2013 commencement cohort by course characteristics

In Figure 14 and Figure 15, we present the results for the **comparisons of the completion rates for IBDP and non-IBDP** students nine years after university commencement, with various student and course characteristics for the 2013 cohort (details in Appendix, Table A9). Detail relating to course commencement by student characteristics at six years after commencement of university can be found in Appendix Tables A11 to A14).

When comparing IBDP students with non-IBDP students:

- Female IBDP students had higher completion rates than non-IBDP female students
- Male IBDP students had higher completion rates than non-IBDP male students

- IBDP students from an English-speaking background had higher completion rates compared to non-IBDP students from English-speaking backgrounds
- IBDP students with ATAR scores lower than 90 had higher completion rates than non-IBDP students with ATAR scores lower than 90
- IBDP students who had not or were not required to provide an ATAR on application to their courses had higher completion rates than non-IBDP students who had not entered their courses using an ATAR
- IBDP students from all SES levels (high, medium, low) had higher completion rates than non-IBDP students with corresponding socioeconomic backgrounds
- IBDP students from metropolitan locations had higher completion rates than non-IBDP students from metropolitan locations
- IBDP students from regional areas had higher completion rates than non-IBDP students from regional areas.

IBDP students at Group of 8 universities had higher completion rates compared to non-IBDP students at these universities. Completion rates for IBDP students at other universities were also higher than those of non-IBDP students at these universities.

IBDP students in the following broad fields of study had higher completion rates compared to non-IBDP students in the same fields of study:

- Natural and Physical Sciences
- Health
- Management and Commerce
- Society and Culture
- Creative Arts

In terms of the specific fields of study of students, there were no significant differences in completion rates of Law, or Medical Studies for IBDP students compared to non-IBDP students, although the completion rates of IBDP students who were in courses other than Law or other than Medical studies were higher than the completion rates of non-IBDP students in similar courses.

Student characteristics		IBDP students	Non-IBDP students	IBDP completion is statistically higher
Overall		91%	79%	*
Sex	Females	95%	81%	*
	Males	87%	75%	*
Language background	English-speaking	92%	78%	*
	LBOTE	86%	80%	
ATAR scores	90-100	94%	93%	
	Lower than 90	82%	75%	*
	Not provided	93%	72%	*
Socioeconomic status	High	92%	83%	*
	Medium	90%	77%	*
	Low	92%	72%	*
Geographic location	Metropolitan area	91%	79%	*
	Regional area	94%	75%	*

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank

Figure 14: Completion of course for IBDP and non-IBDP students by student characteristics (2013 commencement cohort nine years after commencing)

Course characteristics		IBDP students	Non-IBDP students	IBDP completion is statistically higher
Type of university	Group of 8	92%	88%	*
	Other	90%	74%	*
Broad field of study	Natural and Physical Sciences	94%	83%	*
	Information Technology	79%	68%	
	Engineering and related Technologies	82%	80%	
	Architecture and Building	82%	79%	
	Agriculture, Environmental and related studies	93%	80%	
	Health	94%	83%	*
	Education	90%	74%	
	Management and Commerce	92%	80%	*
	Society and Culture	91%	77%	*
	Creative Arts	89%	76%	*
Narrow field of study	Law	92%	88%	
	Medical studies	100%	89%	

Figure 15: Completion of course for IBDP and non-IBDP students by course characteristics (2013 commencement cohort nine years after commencing)

4.3 Diving deeper to explore outcomes by student and course characteristics together

IBDP students and non-IBDP students at Australian universities were cross-classified by sex and SES, sex and broad field of study, and SES and broad field of study to investigate any differences in completion of courses for these groups of students.

The course completion rates of students cross-classified by their sex and SES are presented in Figure 16 (details in Appendix, Table A10).

Course completion was significantly higher:

- For male IBDP students from a high-SES background compared to non-IBDP male students of a high-SES background, 88% compared to 79%.
- For male IBDP students from a medium-SES background compared to non-IBDP male students of a medium-SES background, 84% compared to 73%.
- For female IBDP students of high- (94% compared to 86%), medium- (95% compared to 81%) and low- (94% compared to 75%) SES compared to non-IBDP female students from a corresponding SES.

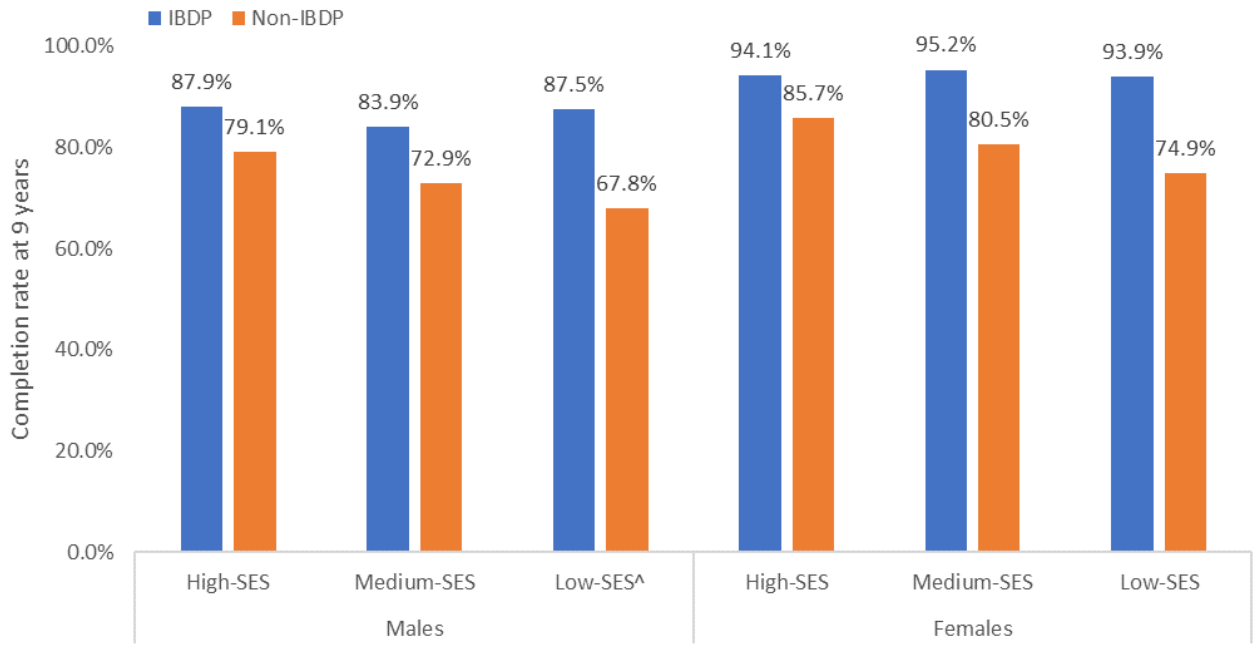

Figure 16: Completion rates nine years after commencement, by SES, sex for IBDP and non-IBDP students, 2013 commencement cohort (^ differences between groups for Low-SES males is not statistically significant)

For the sex and broad field of study cross-classifications, course completion was significantly higher compared to non-IBDP students:

- For male IBDP students studying:
  - Natural and Physical sciences (89% compared to 79%),
  - Management and Commerce (91% compared to 78%), and
  - Society and Culture (86% compared to 73%).
- For female IBDP students studying:
  - Natural and Physical sciences (97% compared to 87%),
  - Health (96% compared to 85%),
  - Management and Commerce (93% compared to 81%),
  - Society and Culture (94% compared to 80%) and
  - Creative Arts (92% compared to 80%).

Among students from high-SES backgrounds, completion was significantly higher for IBDP students compared to non-IBDP students in:

- Natural and Physical sciences (96% compared to 87%),
- Health (96% compared to 86%),
- Management and Commerce (91% compared to 84%) and
- Society and Culture (91% compared to 82%).

Among students from medium-SES backgrounds, completion was significantly higher for IBDP students compared to non-IBDP students in:

- Natural and Physical sciences (91% compared to 82%),
- Management and Commerce (94% compared to 77%),
- Society and Culture (91% compared to 76%) and
- Creative Arts (93% compared to 74%).

Given the lower number of IBDP students from low-SES backgrounds (n = 49), the number of students across courses was too small to allow for reporting (that is, exact numbers were suppressed in the original dataset).

5. Where is the value-add for IBDP students?

Overall, the data examined here suggest an 'added layer of benefit' of the IBDP to:

- student groups that already demonstrate relatively high success in the Australian higher education system. For example, persistence and completion are already higher among female than male students but are higher again when comparing female IBDP students to female non-IBDP students.
- other groups of students, that may not always be the obvious targets for IBDPs, and in some cases may not be strongly represented in the IBDP group. For example, completion rates for male IBDP students are relatively high compared to non-IBDP male students, and this is further accentuated when explored by SES.

As discussed in the introduction to this report, the groups of students who had completed an IBDP before beginning their university studies differed in some ways to the groups of non-IBDP students who started university at the same time. Among the 2013 commencement cohort, for example, females represented a greater proportion in the IBDP group than in the non-IBDP group, as did students from a higher-SES background, from metropolitan areas and who had a tertiary admission score in the top achievement band. The IBDP students also differed from non-IBDP students in terms of where and what they were studying at university – IBDP students more frequently at a university that is a member of the Group of 8 (Australia's older and more prestigious universities, generally speaking) and in areas under Natural and Physical Sciences or in the field of Law, compared to students who had not done an IBDP.

As some of these student and course characteristics are known to be associated with better outcomes (higher rates of admission into university, persistence with courses and eventually completion), it is important to keep these differences in mind when evaluating the outcomes for IBDP students and to recognise that untangling the pathways of influence is not always possible with the data that are available for study.

Despite the limitations of working with aggregated administrative datasets, the current study has identified groups of students for whom completing an IBDP before beginning university study appears to be associated with more positive outcomes.

For some groups, such as female students, the outcomes reported here could be viewed as suggesting layers of benefit – persistence and completion are already higher among female students compared to male students but are higher still among female IBDP students compared to female non-IBDP students.

There are also notable findings in other groups of students, which may not always be the obvious targets for IBDPs, and in some cases may not be strongly represented in the IBDP group, such as students from medium or lower SES backgrounds, or students with lower ATAR scores or who were not required to provide an ATAR in order to gain a place in their chosen course. However, the results of this research help to suggest that the IBDP has a value-added effect for these students and that perhaps these groups may be of interest to the IB in broadening its reach in Australia.

5.1 Male students

In most of the university commencement cohorts examined in this study, there were proportionally more females than males, and female students had higher persistence into second year of their courses and eventual completion. This is a pattern that has been documented in Australia over the past decade or so (Edwards et al., 2023).

Male students who had undertaken an IBDP, however, had significantly higher rates of persistence into the second year of course than male students without an IBDP – 96% of male IBDP students continued into their second year, compared to 93% of males without an IBDP. The course completion rate of male IBDP students was also significantly higher than for male non-IBDP students – 87% of male IBDP students had completed their courses by the nine-year checkpoint compared to 75% of male non-IBDP students.

Male IBDP students from a medium-SES background also showed some advantage compared to non-IBDP students with corresponding socioeconomic backgrounds - 97% of male IBDP students from a medium-SES background continued into their second year of course, compared to 92% of non-IBDP students who were male and from a medium-SES background. Course completion rates were also higher for this group of students – 84% of male IBDP students from a medium-SES background had completed their course at the nine-year checkpoint compared to 73% of male non-IBDP students from a medium-SES background.

5.2 Prior achievement and ATAR bands

When looking at the outcomes for the entire 2013 commencement cohort, including IBDP students and non-IBDP students, persistence into the second year of course and eventual completion of course was higher for students with an ATAR over 90 compared to students with a lower ATAR.

Not surprisingly, given the emphasis on academic development in the IBDP, the proportion of IBDP students who entered university with an ATAR in the highest band (90 to 100) was higher than the proportion of non-IBDP students who entered with an ATAR score in the same band. In the 2013 commencement cohort, 72% of IBDP students entered university with an ATAR over 90, while only 24% of non-IBDP students had a score that high.

For the entire 2013 commencement cohort, persistence into the second year of course was higher among students with an ATAR in the highest band – 98% of these students continued with their studies compared to 88% of students with an ATAR less than 90 – and completion of courses was also higher among students with an ATAR in the highest band (93% completed compared to 75% of students with lower scores).

There did not appear to be any additional benefit of this indicator of prior achievement when comparing outcomes for IBDP and non-IBDP students with ATAR scores in the same band, however, as there was no statistically significant difference in persistence rates or completion rates for IBDP students with high ATAR scores and non-IBDP students with high ATAR scores.

An interesting difference was revealed in the outcomes of students who did not provide an ATAR in order to enter their course. As presented in Table 3 - Chapter 1, this is a relatively small group of students – 92 IBDP students in the 2013 commencement cohort – and the courses that do not require an ATAR for acceptance can vary greatly (from dance to equine management). Outcomes for IBDP students who did not provide an ATAR were notable – 98% persisting into the second year of

course and 93% completing their courses – compared to non-IBDP students who did not enter university based on an ATAR (90% persisting into second year and 72% completing their courses).

It is possible that the 'grit' suggested by these outcomes for IBDP students who have entered university via different paths and based on different requirements was supported and developed through their IBDP studies and the level of autonomy and responsibility this demands of students. Further research would be required to explore this possibility further. It may be possible to involve the Australian schools that offer the IBDP to their students in further research exploring post-secondary school outcomes for IBDP students following alternative paths into higher education as they would have first-hand accounts of decisions and pathways taken by students.

For other groups, there was no evidence of additional benefit to IBDP students beyond their higher representation in the commencement cohort. Those studying Law and Medical studies are such an example – while proportionally more IBDP students were in these prestigious courses, and persistence and completion were generally higher for students in these courses than students in other courses, the persistence and completion rates of IBDP students in Law and Medical studies did not differ significantly from the persistence and completion rates of non-IBDP students in these courses. It is difficult to isolate any additional benefit when focusing on a relatively small and select group of students and when there is not a great deal of variance in the outcomes – most medical students complete their studies.

Overall, this ACER research shows that in the Australian context, students who completed an IBDP had a higher success rate in application to university and in persistence through university to completion. This research is the first to examine access, persistence and completion of university for the IBDP cohorts at a national-scale in Australia. From this study, the potential to develop further research into the transitions and pathways of IBDP students in Australia is apparent – particularly in terms of delving further into some of the groups discussed in the section above, such as students from low-SES areas and those who have not used an ATAR for application to university.

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Appendices

The statistics that resulted from the analyses undertaken to explore post-secondary school outcomes for IBDP and non-IBDP students at the various checkpoints available in the aggregated datasets are provided in this appendix.

The research team developed comparisons of all proportions (representation in the cohorts, persistence into the second year of course or completion of course) using two proportion z-tests (two-tailed). The purpose of the z-test for independent proportions is to compare two independent proportions. The standard test uses the common pooled proportion to estimate the variance of the difference between two proportions.

The test statistic is the standardised normal deviate (z), with a two-tailed test being more appropriate given the exploratory nature of the questions – are the proportions of IBDP students with a certain characteristics/who persist into second year/ who complete their studies different from the proportions of non-IBDP students with a certain characteristic/who persist into second year/who complete their studies or are they the same?

Given the interest in possible differences in the proportions (rates) for IBDP students and non-IBDP students and the size of any difference in the proportions, the research team determined that the z-test was most appropriate for the current study.

While the data are considered a census of university entrants, and the proportions can be considered population proportions or rates, there are some groups that are quite small – for example, 17 IBDP students in the 2013 cohort were in Medical studies; 49 IBDP students were from low-SES backgrounds (16 males, 33 females), there were no IBDP students in Food, Hospitality and Personal Services courses and only 8 non-IBDP students in these courses. The overall small size of the IBDP student population (and subpopulations aligning with student and course characteristics) and the difference in size between the IBDP student population and the non-IBDP population mean that some results should be interpreted with caution, and p values (rather than an indication of whether the test was significant at a predetermined level of alpha) are presented here. It should also be considered that some differences may be identified as being statistically significant, while not being necessarily substantive. For example, in Table A5 the proportion of non-IBDP students with an ATAR over 90 who persisted into the second year of course is identified as significantly higher than the proportion of IBDP students with an ATAR over 90 who persisted into the second year of course. The size of the difference is relatively small, however at 1%.

Table A1: Comparison of IBDP and non-IBDP 2013 commencement cohorts, rates by student and course characteristics (Chapter 1, Table 3)

Student/ Course characteristics		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
Sex	Female	0.61	0.56	0.56	2.636	0.0084
	Male	0.39	0.44	0.44	-2.636	0.0084
ATAR band	90-100	0.72	0.24	0.24	35.781	0.0000
	80-89	0.14	0.20	0.20	-5.327	0.0000
	70-79	0.05	0.16	0.16	-9.471	0.0000
	60-69	0.01	0.10	0.10	-10.227	0.0000
	50-59	NA	0.04			
	30-49	NA	0.02			
	not provided/ not required	0.09	0.24	0.24	-11.258	0.0000
Language background	English-speaking	0.93	0.97	0.97	-5.804	0.0000
	LBOTE	0.07	0.03	0.03	5.804	0.0000
Socioeconomic status	High	0.61	0.36	0.36	16.607	0.0000
	Medium	0.32	0.49	0.49	-10.856	0.0000
	Low	0.05	0.14	0.14	-8.665	0.0000
	Not available	0.02	0.01	0.01	4.962	0.0000
Geographic location	Metropolitan	0.91	0.79	0.80	9.258	0.0000
	Regional	0.07	0.19	0.19	-10.249	0.0000
	Remote		0.01			
	Not available	0.02	0.01	0.01	4.657	0.0000
Type of university	Group of 8	0.77	0.32	0.33	30.492	0.0000
	Other	0.23	0.68	0.67	-30.492	0.0000
Broad field of study	Natural and Physical Sciences	0.27	0.15	0.15	10.510	0.0000
	Information Technology	0.01	0.03	0.03	-3.223	0.0013
	Engineering and Related Technologies	0.09	0.08	0.08	1.402	0.1609
	Architecture and Building	0.02	0.03	0.03	-1.951	0.0510
	Agriculture, Environmental and Related Studies	0.03	0.02	0.02	2.658	0.0079
	Health	0.12	0.16	0.16	-3.317	0.0009
	Education	0.01	0.09	0.09	-8.805	0.0000
	Management and Commerce	0.18	0.19	0.19	-0.322	0.7478
	Society and Culture	0.35	0.27	0.27	5.893	0.0000
	Creative Arts	0.07	0.10	0.10	-3.621	0.0003
	Food, Hospitality and Personal Services	0.00	NA			
Narrow field of study	Law	0.10	0.04	0.04	9.893	0.0000
	Medical studies	0.02	0.01	0.01	4.106	0.0000

Note: Rate x 100 = proportion of students

Note: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; SES indicates socioeconomic status; NA indicates that the number of students is less than 5 (suppressed in the original dataset)

Table A2: IBDP and non-IBDP commencement cohorts 2014 to 2018, student and course characteristics % share within groups

Student/ Course characteristics		Proportion of students in IBDP and non-IDP commencement groups									
		2014		2015		2016		2017		2018	
		IBDP %	Non-IBDP %	IBDP %	Non-IBDP %	IBDP %	Non-IBDP %	IBDP %	Non-IBDP %	IBDP %	Non-IBDP %
Sex	Female	58	57	59	56	58	57	59	57	56	43
	Male	42	43	41	44	42	43	41	43	44	57
ATAR band	90-100	57	23	56	23	46	24	51	23	58	24
	80-89	17	20	15	19	13	20	14	20	16	20
	70-79	5	15	5	15	5	16	3	16	3	16
	60-69	0	10	0	11	0	10	0	11	0	10
	50-59	0	4	0	4	0	4	0	4	0	4
	30-49	0	2	0	2	0	3	0	2	0	3
	not provided/ not required	21	27	24	26	36	23	31	24	23	24
Language background	English-speaking	94	96	94	96	95	96	94	96	95	97
	LBOTE	6	4	6	4	5	4	6	4	5	3
Socioeconomic status	High	63	36	62	35	60	34	90	34	64	34
	Medium	29	50	31	50	31	50	0	50	29	50
	Low	4	14	3	14	5	15	6	15	3	15
	Not available	4	1	4	1	4	1	4	1	3	1
Geographic location	Metropolitan	88	79	89	79	90	79	90	79	88	80
	Regional	7	19	7	20	5	20	6	19	8	19
	Remote	NA	1	NA	1	NA	1	NA	1	NA	1
	Not available	4	1	4	1	5	1	4	1	3	1
Type of university	Group of 8	73	32	73	31	73	32	74	31	73	31
	Other	27	68	27	69	27	68	26	69	27	69
Broad field of study	Natural and Physical Sciences	27	15	24	15	29	16	27	16	27	17
	Information Technology	2	3	2	4	3	4	3	4	4	4
	Engineering and Related Technologies	10	8	10	8	9	8	10	8	10	8
	Architecture and Building	2	2	2	3	2	3	4	3	4	3
	Agriculture, Environmental and Related Studies	2	1	2	1	2	1	1	1	1	1
	Health	11	17	12	18	11	18	11	18	13	19
	Education	2	9	2	8	2	8	1	8	1	7
	Management and Commerce	20	19	21	19	20	20	23	20	21	19
	Society and Culture	34	27	34	26	32	26	32	26	30	25
	Creative Arts	7	10	7	10	8	10	8	9	5	9

Student/ Course characteristics		Proportion of students in IBDP and non-IDP commencement groups									
		2014		2015		2016		2017		2018	
		IBDP %	Non-IBDP %	IBDP %	Non-IBDP %	IBDP %	Non-IBDP %	IBDP %	Non-IBDP %	IBDP %	Non-IBDP %
	Food, Hospitality and Personal Services	0	0	0	0	0	0	0	0	0	0
Narrow field of study	Law	9	4	8	4	8	4	6	4	6	4
	Medical studies	1	1	1	0	1	0	2	0	2	0

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; SES indicates socioeconomic status; NA indicates that the number of students is less than 5 (suppressed in the original dataset)

Table A3: Persistence into second year of course, comparison of IBDP and non-IBDP students at four, six and nine years (Chapter 2, Figure 6)

Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
2013 cohort four-year	0.970	0.932	0.933	4.849	0.0000
2014 cohort four-year	0.980	0.931	0.932	6.970	0.0000
2015 cohort four-year	0.975	0.933	0.933	6.124	0.0000
2016 cohort four-year	0.974	0.935	0.935	5.856	0.0000
2017 cohort four-year	0.974	0.935	0.935	6.147	0.0000
2018 cohort four-year	0.979	0.940	0.940	6.270	0.0000
2013 cohort six-year	0.974	0.942	0.942	4.448	0.0000
2014 cohort six-year	0.984	0.941	0.941	6.631	0.0000
2015 cohort six-year	0.978	0.943	0.943	5.499	0.0000
2016 cohort six-year	0.980	0.944	0.945	5.744	0.0000
2013 cohort nine-year	0.978	0.948	0.949	4.295	0.0000

Note: Rate x 100 = proportion of students who persisted into second year of course.

Table A4: Persistence into second year of course, 2013 cohort at four years by student and course characteristics (Chapter 3, Figure 7 and Figure 8)

Group 1	Group 2	Group 1 rate	Group 2 rate	Pooled population rate	z statistic	p value
Females	Males	0.937	0.927	0.933	6.916	0.0000
English-speaking background	LBOTE	0.932	0.958	0.933	6.151	0.0000
ATAR 90 - 100	ATAR less than 90	0.984	0.879	0.912	22.946	0.0000
ATAR provided	ATAR not provided/not required	0.943	0.900	0.933	6.999	0.0000
High-SES	Other socioeconomic backgrounds	0.950	0.923	0.924	6.807	0.0000
Metropolitan location	Other location	0.938	0.914	0.746	7.343	0.0000
Group of 8 universities	Other universities	0.973	0.913	0.933	36.305	0.0000
Law	Other studies	0.977	0.931	0.933	11.801	0.0000
Medical studies	Other studies	0.975	0.933	0.933	4.383	0.0000

Note: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; SES indicates socioeconomic status; Rate x 100 = proportion of students who persisted into second year of course.

Table A5: Persistence into second year of course, comparison of IBDP and non-IBDP students in 2013 cohort at four years by student and course characteristics (Chapter 3, Figure 7 and Figure 8)

Groups	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
Females	0.975	0.937	0.937	3.874	0.0001
Males	0.964	0.926	0.927	2.873	0.0041
English-speaking background	0.973	0.931	0.932	5.143	0.0000
LBOTE	0.928	0.958	0.958	-1.267	0.2051
ATAR score of 90 - 100	0.969	0.984	0.984	-3.198	0.0014
ATAR score lower than 90	0.966	0.924	0.924	2.255	0.0241
ATAR not provided/required	0.989	0.900	0.900	2.856	0.0043
High-SES	0.967	0.950	0.950	1.901	0.0573
Medium-SES	0.976	0.927	0.928	3.473	0.0005
Low-SES	0.959	0.905	0.905	1.287	0.1979
Metropolitan location	0.967	0.937	0.938	3.790	0.0002
Regional location	1.000	0.912	0.913	2.557	0.0106
Remote location	NAR	0.904			
Group of 8 universities	0.966	0.973	0.973	-1.091	0.2753
Other universities	0.983	0.913	0.913	3.860	0.0001
Natural and Physical Sciences	0.979	0.961	0.961	1.562	0.1183
Information Technology	0.929	0.910	0.910	0.240	0.8101
Engineering and Related Technologies	0.969	0.961	0.961	0.411	0.6812
Architecture and Building	0.941	0.938	0.938	0.054	0.9568
Agriculture, Environmental and Related Studies	1.000	0.933	0.934	1.415	0.1572
Health	0.977	0.940	0.940	1.756	0.0792
Education	0.900	0.909	0.909	-0.099	0.9213
Management and Commerce	0.963	0.934	0.935	1.609	0.1075
Society and Culture	0.962	0.932	0.932	2.271	0.0231
Creative Arts	0.971	0.913	0.913	1.737	0.0824
Law	0.962	0.977	0.977	-1.060	0.2890
Other courses	0.971	0.931	0.931	4.882	0.0000
Medical studies	1.000	0.974	0.975	0.671	0.5024
Oher courses	0.970	0.932	0.933	4.771	0.0000

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; SES indicates socioeconomic status; NAR indicates a persistence rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset) which means that the number of students who persisted with their studies (total minus leavers) cannot be calculated. Rate x 100 = proportion of students who persisted into second year of course

Table A6: Persistence into second year, comparison of 2013 cohort of IBDP and non-IBDP students at four years by cross-classification – sex, socioeconomic status (SES) and broad field of study

Group (cross-classification)		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
Male	High-SES	0.962	0.944	0.944	1.244	0.2136
	Medium-SES	0.966	0.919	0.919	2.110	0.0341
	Low-SES	0.938	0.902	0.902	0.474	0.6357
Female	High-SES	0.969	0.956	0.956	1.307	0.1914
	Medium-SES	NAR	0.933	-		
	Low-SES	NAR	0.907	-		
Males	Natural and Physical Sciences	NAR	0.956	-		
	Information Technology	NAR	0.905	-		
	Engineering and Related Technologies	NAR	0.958	-		
	Architecture and Building	1.000	0.927	0.928	0.839	0.4014
	Agriculture, Environmental and Related Studies	1.000	0.941	0.942	0.870	0.3846
	Health	NAR	0.921	-		
	Education	NAR	0.885	-		
	Management and Commerce	NAR	0.937	-		
	Society and Culture	0.945	0.923	0.924	0.844	0.3988
	Creative Arts	1.000	0.883	0.884	1.498	0.1341
	Food, Hospitality and Personal Services		NAR			
Females	Natural and Physical Sciences	NAR	0.966	-		
	Information Technology	NAR	0.942	-		
	Engineering and Related Technologies	1.000	0.979	0.979	0.775	0.4382
	Architecture and Building	NAR	0.952	-		
	Agriculture, Environmental and Related Studies	1.000	0.926	0.928	1.126	0.2601
	Health	NAR	0.947	-		
	Education	NAR	0.917	-		
	Management and Commerce	0.948	0.932	0.932	0.627	0.5306
	Society and Culture	0.969	0.936	0.936	2.153	0.0313
	Creative Arts	NAR	0.931	-		
	Food, Hospitality and Personal Services		1.000	-		

Group (cross-classification)		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
High-SES	Natural and Physical Sciences	NAR	0.973	-		
	Information Technology	NAR	0.927	-		
	Engineering and Related Technologies	NAR	0.978	-		
	Architecture and Building	NAR	0.954	-		
	Agriculture, Environmental and Related Studies	1.000	0.956	0.958	0.880	0.3788
	Health	NAR	0.953	-		
	Education	NAR	0.932	-		
	Management and Commerce	0.953	0.954	0.954	-0.047	0.9623
	Society and Culture	0.962	0.950	0.950	0.860	0.3900
	Creative Arts	NAR	0.931	-		
	Food, Hospitality and Personal Services		NAR	-		
Medium-SES	Natural and Physical Sciences	NAR	0.957	-		
	Information Technology	NAR	0.906	-		
	Engineering and Related Technologies	NAR	0.957	-		
	Architecture and Building	NAR	0.933	-		
	Agriculture, Environmental and Related Studies	1.000	0.927	0.928	0.740	0.4592
	Health	1.000	0.936	0.937	1.824	0.0682
	Education	NAR	0.914	-		
	Management and Commerce	NAR	0.925	-		
	Society and Culture	0.953	0.923	0.924	1.157	0.2472
	Creative Arts	1.000	0.904	0.904	1.697	0.0897
	Food, Hospitality and Personal Services		NAR			
Low-SES	Natural and Physical Sciences	NAR	0.943	-		
	Information Technology	NAR	0.887	-		
	Engineering and Related Technologies	NAR	0.937	-		
	Architecture and Building	NAR	0.898	-		

Group (cross-classification)		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Agriculture Environmental and Related Studies	NAR	0.897	-		
	Health	NAR	0.926	-		
	Education		0.868			
	Management and Commerce	1.000	0.902	0.903	0.805	0.4208
	Society and Culture	1.000	0.902	0.903	1.187	0.2353
	Creative Arts	NAR	0.886	-		
	Food, Hospitality and Personal Services		NAR			

Notes: NAR indicates a persistence rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset) which means that the number of students who persisted with their studies (total minus leavers) cannot be calculated. Rate x 100 = proportion of students who persisted into second year of course

Table A7: Completion of course, 2013 to 2018 cohorts at four, six and nine years (Chapter 4, Figure 11)

Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
2013 cohort four-year	0.500	0.453	0.454	2.996	0.0027
2014 cohort four-year	0.512	0.447	0.448	4.682	0.0000
2015 cohort four-year	0.516	0.450	0.451	4.762	0.0000
2016 cohort four-year	0.492	0.456	0.456	2.669	0.0076
2017 cohort four-year	0.518	0.447	0.448	5.595	0.0000
2018 cohort four-year	0.506	0.434	0.435	5.574	0.0000
2013 cohort six-year	0.836	0.708	0.710	9.014	0.0000
2014 cohort six-year	0.828	0.707	0.708	8.673	0.0000
2015 cohort six-year	0.815	0.708	0.709	8.539	0.0000
2016 cohort six-year	0.809	0.708	0.710	8.130	0.0000
2013 cohort nine-year	0.915	0.785	0.786	10.135	0.0000

Table A8: Completion of course for the whole 2013 cohort at nine years by student and course characteristics (Chapter 4, Figure 12 and Figure 13)

Group 1	Group 2	Group 1 rate	Group 2 rate	Pooled population rate	z statistic	p value
Females	Males	0.816	0.748	0.786	27.143	0.0000
English-speaking background	LBOTE	0.786	0.806	0.786	2.884	0.0039
ATAR 90 - 100	ATAR less than 90	0.928	0.750	0.806	60.084	0.0000
ATAR provided	ATAR not provided/not required	0.806	0.721	0.786	28.858	0.0000
High-SES	Other socioeconomic backgrounds	0.828	0.762	0.786	25.156	0.0000
Metropolitan location	Other location	0.795	0.749	0.786	14.619	0.0000
Group of 8 universities	Other universities	0.877	0.742	0.786	50.671	0.0000
Law	Other studies	0.902	0.782	0.786	18.682	0.0000
Medical studies	Other studies	0.895	0.786	0.786	6.910	0.0000

Note: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; SES indicates socioeconomic status; Rate x 100 = proportion of students who had completed their course at the nine-year checkpoint.

Table A9: Completion of course, comparison of 2013 cohort of IBDP and non-IBDP students at nine years by student and course characteristics (Chapter 4, Figure 14 and Figure 15)

Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
Females	0.946	0.815	0.816	8.457	0.0000
Males	0.866	0.747	0.748	5.556	0.0000
English-speaking background	0.919	0.784	0.786	10.154	0.0000
LBOTE	0.855	0.805	0.806	1.047	0.2951
ATAR score of 90 - 100	0.936	0.928	0.928	0.805	0.4205
ATAR score lower than 90	0.828	0.750	0.750	2.594	0.0095
ATAR not provided/required	0.935	0.721	0.721	4.575	0.0000
High-SES	0.917	0.826	0.828	6.008	0.0000
Medium-SES	0.902	0.773	0.774	5.673	0.0000
Low-SES	0.918	0.720	0.721	3.086	0.0020
Metropolitan location	0.910	0.794	0.795	8.843	0.0000
Regional location	0.941	0.749	0.750	3.650	0.0003
Remote location	NAR	0.722			
Group of 8 universities	0.919	0.876	0.877	3.634	0.0003
Other universities	0.900	0.742	0.742	5.601	0.0000
Natural and Physical Sciences	0.936	0.830	0.831	4.756	0.0000
Information Technology	0.786	0.676	0.677	0.874	0.3823
Engineering and Related Technologies	0.816	0.801	0.801	0.375	0.7080
Architecture and Building	0.824	0.792	0.792	0.321	0.7485
Agriculture, Environmental and Related Studies	0.929	0.802	0.804	1.674	0.0941
Health	0.938	0.829	0.830	3.243	0.0012
Education	0.900	0.740	0.740	1.153	0.2488
Management and Commerce	0.916	0.795	0.796	4.135	0.0000
Society and Culture	0.915	0.774	0.776	6.406	0.0000
Creative Arts	0.886	0.756	0.757	2.521	0.0117
Law	0.923	0.883	0.884	0.122	0.9029
Other courses	0.914	0.781	0.782	9.779	0.0000
Medical studies	1.000	0.892	0.895	1.431	0.1526
Other courses	0.913	0.784	0.786	9.982	0.0000

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; SES indicates socioeconomic status; NAR indicates a rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset). Rate x 100 = proportion of students who had completed their course at the nine-year checkpoint.

Table A10: Completion of course, comparison of 2013 cohort of IBDP and non-IBDP students at nine years by cross-classification – sex, socioeconomic status (SES) and broad field of study (Chapter 4, Figure 16)

Cross-classification Group		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
Males	High-SES	0.879	0.791	0.792	3.311	0.0009
	Medium-SES	0.839	0.729	0.729	3.019	0.0025
	Low-SES	0.875	0.678	0.679	1.683	0.0923
Females	High-SES	0.941	0.857	0.859	4.722	0.0000
	Medium-SES	0.952	0.805	0.806	5.095	0.0000
	Low-SES	0.939	0.749	0.749	2.522	0.0117
Males	Natural and Physical Sciences	0.892	0.795	0.796	2.735	0.0062
	Information Technology	0.769	0.656	0.657	0.854	0.3930
	Engineering and Related Technologies	0.800	0.789	0.789	0.219	0.8265
	Architecture and Building	0.778	0.761	0.761	0.119	0.9049
	Agriculture, Environmental and Related Studies	0.917	0.787	0.789	1.091	0.2752
	Health	0.879	0.770	0.771	1.482	0.1384
	Education	NA	0.633			
	Management and Commerce	0.905	0.781	0.782	2.924	0.0035
	Society and Culture	0.862	0.732	0.734	3.047	0.0023
	Creative Arts	0.765	0.686	0.686	0.699	0.4847
	Food, Hospitality and Personal Services		NA			
Females	Natural and Physical Sciences	0.974	0.867	0.869	3.885	0.0001
	Information Technology	NA	0.800			
	Engineering and Related Technologies	0.857	0.867	0.867	-0.154	0.8780
	Architecture and Building	0.875	0.834	0.834	0.311	0.7556
	Agriculture, Environmental and Related Studies	0.938	0.816	0.818	1.250	0.2114
	Health	0.958	0.852	0.853	2.892	0.0038
	Education	0.875	0.776	0.776	0.671	0.5019
	Management and Commerce	0.927	0.811	0.812	2.893	0.0038
	Society and Culture	0.938	0.796	0.797	5.602	0.0000
	Creative Arts	0.925	0.798	0.799	2.283	0.0224
	Food, Hospitality and Personal Services	zero	0.670			

Cross-classification Group		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
High-SES	Natural and Physical Sciences	0.955	0.868	0.870	3.203	0.0014
	Information Technology	0.750	0.711	0.711	0.244	0.8076
	Engineering and Related Technologies	0.833	0.852	0.852	-0.358	0.7204
	Architecture and Building	0.833	0.825	0.825	0.075	0.9402
	Agriculture, Environmental and Related Studies	0.941	0.846	0.848	1.080	0.2801
	Health	0.957	0.865	0.866	2.224	0.0261
	Education	0.857	0.776	0.776	0.517	0.6055
	Management and Commerce	0.906	0.839	0.840	2.048	0.0406
	Society and Culture	0.911	0.816	0.818	3.741	0.0002
	Creative Arts	0.846	0.796	0.797	0.773	0.4397
	Food, Hospitality and Personal Services		NAR			
Medium-SES	Natural and Physical Sciences	0.913	0.816	0.817	2.552	0.0107
	Information Technology	NAR	0.674			
	Engineering and Related Technologies	0.783	0.784	0.784	-0.018	0.9858
	Architecture and Building	NAR	0.779			
	Agriculture, Environmental and Related Studies	0.857	0.801	0.802	0.369	0.7119
	Health	0.918	0.824	0.824	1.732	0.0833
	Education	NAR	0.744			
	Management and Commerce	0.941	0.773	0.774	2.858	0.0043
	Society and Culture	0.907	0.757	0.758	3.596	0.0003
	Creative Arts	0.926	0.738	0.739	2.220	0.0264
	Food, Hospitality and Personal Services		NAR			
Low-SES	Natural and Physical Sciences	0.900	0.771	0.772	1.369	0.1711
	Information Technology	NAR	0.615			
	Engineering and Related Technologies	NAR	0.741			
	Architecture and Building	NAR	0.712			
	Agriculture, Environmental and Related Studies	NAR	0.705			

Cross-classification Group		IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Health	0.875	0.784	0.784	0.627	0.5304
	Education	NAR	0.689			
	Management and Commerce	0.833	0.726	0.726	0.590	0.5552
	Society and Culture	1.000	0.700	0.701	2.359	0.0183
	Creative Arts	NAR	0.690			
	Food, Hospitality and Personal Services		NAR			

Notes: NAR indicates a rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset). Rate x 100 = proportion of students who had completed their course at the nine-year checkpoint.

Table A11: Completion of course, comparison of 2013 cohort of IBDP and non-IBDP students at six years by cross-classification – sex, socioeconomic status and broad field of study

Characteristic	Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Overall	0.84	0.71	0.71	9.014	0.0000
Sex	Males	0.76	0.66	0.66	4.407	0.0000
	Females	0.88	0.75	0.75	7.889	0.0000
Language background	English-speaking	0.84	0.71	0.71	8.866	0.0000
	LBOTE	0.81	0.73	0.73	1.570	0.1164
ATAR band	90 - 100	0.86	0.86	0.86	-0.056	0.9553
	80-89	0.72	0.76	0.76	-1.180	0.2378
	70-79	0.82	0.66	0.66	2.568	0.0102
	not provided/required	0.88	0.66	0.66	4.532	0.0000
Socioeconomic status	High	0.84	0.75	0.75	5.534	0.0000
	Medium	0.81	0.70	0.70	4.706	0.0000
	Low	0.84	0.65	0.65	2.765	0.0057
Geographic location	Metropolitan	0.83	0.72	0.72	7.886	0.0000
	Regional	0.87	0.68	0.68	3.331	0.0009
	Remote	NAR	0.65			
Type of university	Group of 8	0.84	0.80	0.80	2.654	0.0080
	Other	0.83	0.66	0.66	5.278	0.0000
Field of study	Natural and Physical Sciences	0.86	0.75	0.75	4.100	0.0000
	Information Technology	0.79	0.59	0.59	1.459	0.1445
	Engineering and Related Technologies	0.71	0.66	0.67	1.039	0.2986
	Architecture and Building	0.82	0.72	0.72	0.980	0.3271
	Agriculture, Environmental and Related Studies	0.82	0.75	0.75	0.872	0.3832
	Health	0.84	0.77	0.77	2.082	0.0373
	Education	0.70	0.67	0.67	0.178	0.8588
	Management and Commerce	0.84	0.72	0.72	3.712	0.0002
	Society and Culture	0.82	0.68	0.69	5.727	0.0000
	Creative Arts	0.79	0.69	0.69	1.666	0.0958

Characteristic	Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Food, Hospitality and Personal Services	–	NAR			
Narrow field of study	Law	0.73	0.76	0.76	-0.752	0.4518
	Medical studies	0.88	0.82	0.82	0.654	0.5129

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; NAR indicates a rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset).

Table A12: Completion of course, comparison of 2014 cohort of IBDP and non-IBDP students at six years by cross-classification – sex, socioeconomic status and broad field of study

Characteristic	Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Overall	0.83	0.71	0.71	9.536	0.0000
Sex	Males	0.79	0.66	0.66	6.230	0.0000
	Females	0.86	0.74	0.75	7.187	0.0000
Language background	English-speaking	0.83	0.71	0.71	9.300	0.0000
	LBOTE	0.84	0.73	0.74	1.942	0.0521
ATAR band	90 - 100	0.87	0.86	0.86	0.968	0.3331
	80-89	0.72	0.76	0.76	-1.261	0.2072
	70-79	0.63	0.66	0.66	-0.482	0.6301
	not provided/required	0.84	0.66	0.66	6.272	0.0000
Socioeconomic status	High	0.83	0.75	0.75	5.262	0.0000
	Medium	0.82	0.70	0.70	5.070	0.0000
	Low	0.84	0.64	0.64	3.033	0.0024
Geographic location	Metropolitan	0.83	0.71	0.71	8.397	0.0000
	Regional	0.81	0.68	0.68	2.627	0.0086
	Remote		0.64			
Type of university	Group of 8	0.86	0.80	0.81	3.997	0.0001
	Other	0.75	0.66	0.66	3.570	0.0004
Field of study	Natural and Physical Sciences	0.83	0.75	0.75	3.154	0.0016
	Information Technology	0.72	0.60	0.61	1.309	0.1906
	Engineering and Related Technologies	0.78	0.66	0.66	2.752	0.0059
	Architecture and Building	0.87	0.73	0.73	1.808	0.0707
	Agriculture, Environmental and Related Studies	0.90	0.71	0.72	2.320	0.0203
	Health	0.90	0.76	0.76	3.711	0.0002
	Education	0.77	0.66	0.66	1.133	0.2573
	Management and Commerce	0.87	0.72	0.72	5.056	0.0000
	Society and Culture	0.80	0.69	0.69	4.977	0.0000
	Creative Arts	0.84	0.70	0.70	2.766	0.0057
	Food, Hospitality and Personal Services	–	NAR			
Narrow field of study	Law	0.82	0.76	0.76	1.500	0.1337
	Medical studies	0.89	0.83	0.83	0.702	0.4824

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; NAR indicates a rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset).

Table A13: Completion of course, comparison of 2015 cohort of IBDP and non-IBDP students at six years by cross-classification – sex, socioeconomic status and broad field of study

Characteristic	Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Overall	0.82	0.71	0.71	8.539	0.0000
Sex	Males	0.76	0.66	0.66	4.993	0.0000
	Females	0.85	0.75	0.75	6.888	0.0000
Language background	English-speaking	0.81	0.71	0.71	8.211	0.0000
	LBOTE	0.84	0.72	0.73	2.250	0.0244
ATAR band	90 - 100	0.87	0.86	0.86	1.197	0.2312
	80-89	0.74	0.77	0.77	-0.999	0.3179
	70-79	0.56	0.67	0.67	-1.952	0.0510
	not provided/required	0.79	0.65	0.65	5.001	0.0000
Socioeconomic status	High	0.83	0.75	0.75	5.135	0.0000
	Medium	0.80	0.69	0.69	4.470	0.0000
	Low	0.72	0.64	0.64	1.102	0.2703
Geographic location	Metropolitan	0.82	0.72	0.72	8.125	0.0000
	Regional	0.74	0.68	0.68	1.275	0.2022
	Remote	NA	0.63			
Type of university	Group of 8	0.84	0.81	0.81	2.034	0.0419
	Other	0.75	0.66	0.66	3.735	0.0002
Field of study	Natural and Physical Sciences	0.84	0.75	0.75	3.786	0.0002
	Information Technology	0.72	0.62	0.62	1.026	0.3051
	Engineering and Related Technologies	0.75	0.65	0.65	2.502	0.0123
	Architecture and Building	0.81	0.72	0.72	1.082	0.2792
	Agriculture, Environmental and Related Studies	0.81	0.75	0.75	0.779	0.4358
	Health	0.88	0.75	0.75	3.759	0.0002
	Education	0.76	0.65	0.65	1.114	0.2651
	Management and Commerce	0.82	0.73	0.73	3.272	0.0011
	Society and Culture	0.80	0.68	0.69	5.373	0.0000
	Creative Arts	0.73	0.71	0.71	0.456	0.6483
	Food, Hospitality and Personal Services	–	–			
Narrow field of study	Law	0.80	0.76	0.76	1.060	0.2892
	Medical studies	0.94	0.95	0.95	-0.152	0.8794

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; NAR indicates a rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset).

Table A14: Completion of course, comparison of 2016 cohort of IBDP and non-IBDP students at six years by cross-classification – sex, socioeconomic status and broad field of study

Characteristic	Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
	Overall	0.81	0.71	0.71	8.130	0.0000
Sex	Males	0.78	0.66	0.66	5.987	0.0000
	Females	0.83	0.75	0.75	5.471	0.0000
Language background	English-speaking	0.81	0.71	0.71	8.207	0.0000
	LBOTE	0.77	0.75	0.75	0.343	0.7315
ATAR band	90 - 100	0.85	0.85	0.85	0.014	0.9890
	80-89	0.73	0.76	0.76	-1.185	0.2359
	70-79	0.70	0.67	0.67	0.523	0.6013
	not provided/required	0.80	0.65	0.65	6.948	0.0000
Socioeconomic status	High	0.83	0.75	0.76	5.196	0.0000
	Medium	0.77	0.70	0.70	3.081	0.0021
	Low	0.70	0.64	0.64	1.000	0.3174
Geographic location	Metropolitan	0.81	0.72	0.72	7.144	0.0000
	Regional	0.75	0.68	0.68	1.401	0.1612
	Remote	NA	0.63			
Type of university	Group of 8	0.82	0.80	0.80	1.676	0.0938
	Other	0.77	0.66	0.67	4.377	0.0000
Field of study	Natural and Physical Sciences	0.84	0.74	0.75	4.501	0.0000
	Information Technology	0.68	0.63	0.63	0.564	0.5731
	Engineering and Related Technologies	0.75	0.64	0.64	2.543	0.0110
	Architecture and Building	0.80	0.76	0.76	0.503	0.6148
	Agriculture, Environmental and Related Studies	0.75	0.76	0.76	-0.133	0.8946
	Health	0.80	0.75	0.75	1.473	0.1408
	Education	0.52	0.65	0.65	-1.251	0.2108
	Management and Commerce	0.80	0.74	0.74	2.378	0.0174
	Society and Culture	0.78	0.68	0.68	4.518	0.0000
	Creative Arts	0.85	0.71	0.71	3.181	0.0015
	Food, Hospitality and Personal Services	–	NAR			
	Law	0.69	0.75	0.75	-1.483	0.1382

Characteristic	Group	IBDP students	Non-IBDP students	Pooled population rate	z statistic	p value
Narrow field of study	Medical studies	0.95	0.91	0.92	0.507	0.6121

Notes: LBOTE indicates language background other than English; ATAR indicates Australian Tertiary Admissions Rank; NAR indicates a rate that cannot be calculated because the number of students who left their studies is less than 5 (suppressed in the original dataset).