e61 Research Note | 4 June 2025

WHO STAYS, WHO GOES?
A NEW LOOK AT TEACHER ATTRITION USING ADMINISTRATIVE DATA

Jack Buckley and Silvia Griselda

Executive Summary

Teacher attrition — the rate at which teachers leave the profession — is often seen as a major contributor to Australia's teacher shortages (Convery, 2022). Using linked administrative tax data, we provide a comprehensive picture of who leaves teaching, when, and what happens next. We find that:

- **Overall attrition is relatively low and not increasing.** Early career teacher attrition rates have almost halved since 2009, and the annual attrition rate for teachers is now lower than turnover in all other occupation groups.
- **However, attrition is concentrated in specific settings.** Attrition rates are much higher for teachers working in very remote areas, especially in the Northern Territory, and among special education teachers, potentially requiring further targeted policy interventions.
  - **Attrition is also higher among teachers with very high ATARs.**
- **Financial factors appear to play a limited role in explaining teacher attrition.** Most teachers who leave the profession earn less than those who remain over the long term — after 10 years, former teachers earn on average $21,000 less than those remaining in the profession.
  - The exceptions to this are **high-ATAR teachers and those who were only marginally attached to the workforce, who often receive short-term pay increases after leaving.**

  Attrition rates within the public sector are similar across jurisdictions, despite differences in pay — and are higher in the private sector even though private school teachers tend to earn more.
- **Not all attrition is harmful.** Over one-third of teachers who change occupations take up education-related roles, such as teachers' aides, early childhood educators and education advisers and reviewers. A growing number are moving into the care economy, particularly primary school teachers. Many who leave were only marginally attached to the workforce and may be better matched in their new roles.
- **Teacher supply is constrained further up the pipeline.** Attrition isn't rising, but other issues are affecting supply.
  - A growing share of teaching graduates never go on to work as teachers.
  - Completion rates in teaching degrees are falling — a trend mirrored across most other fields of education.
  - New university enrolments in teaching have fallen far behind other fields with the number of new students enrolling in a teaching degree having barely changed in the past 15 years.

Our findings suggest that overall teacher attrition rates are not at concerning levels, but policymakers should:

- Focus on high-turnover settings such as very remote areas and special education;
- Recognise that not all attrition is a policy failure—some exits reflect healthy labour market mobility;
- Prioritise attracting more high-school graduates into teaching degrees, especially given slow growth in enrolments.

Ensuring a strong and sustainable teaching workforce is a central challenge for Australia's education system (Department of Education, 2022a). Like many OECD countries, Australia faces growing concerns about teacher shortages, with implications for student learning, school operations, and broader workforce planning.

One important aspect of this challenge is teacher attrition—teachers leaving the profession altogether. High attrition can undermine efforts to build a stable and experienced workforce (Jackson et al., 2014; Kini & Podolsky, 2016), increase recruitment and training costs, and leave vacancies in hard-to-staff schools (ABC News, 2023; Department of Education, 2022b). For these reason, reducing attrition has become a key policy priority (Convery, 2022).

Yet, research on teacher attrition in Australia has been hampered by data limitations. Until recently, researchers had struggled to accurately measure the rate of attrition, with estimates ranging from roughly 1% per year, to 10% per year (Weldon, 2018a).[1] Other fundamental questions remain unanswered, such as how attrition rates have changed overtime, where teachers go when they leave, and what their long run outcomes are (see Appendix B.1.2).

Moreover, we know little about the drivers of attrition, which are diverse and complex. While some teachers may leave due to poor pay or working conditions, others may exit the profession for reasons that reflect personal choice or better job fit—such as pursuing a more suitable career path or stepping away from work to care for a loved one. Trying to prevent these moves may not only be difficult, but may risk making these individuals worse off. Reducing teacher attrition also involves trade-offs for the economy as a whole, as roles formerly filled by ex-teachers will need to be filled by other workers who may be less suited to them.

In this note we aim to help fill this knowledge gap using detailed administrative data made available by the Australia Bureau of Statistics. We first **quantify the rate of teacher attrition** and compare it to turnover in other occupations. We then examine how rates differ across jurisdictions, sectors and school types, as well as the **characteristics** of teachers who are more likely to leave. Next, we investigate the nature of teacher attrition by documenting **the occupations teachers move to** and their **labour market outcomes after leaving**. Finally, we examine the role of **other potential drivers of teacher shortages**, such as university attrition rates and enrolments. Further details on our empirical approach can be found in Box 1.

Box 1: Measuring School Teacher Attrition

We use occupation information recorded in administrative tax records to identify school teachers and measure attrition. We classify a school teacher as having left teaching if they are not employed as a school teacher in any of the next three years. We include in our definition of school teachers school principals (and vice principals etc.), but exclude early childhood education (pre-school) teachers.

Our measure of attrition has at least three key advantages over previous research. First, our dataset allows us to follow former teachers over time. This lets us identify the occupations they move to and their labour market outcomes after leaving teaching. Most existing research has not been able to track teachers accurately after they leave the profession.

Second, our dataset allows us to apply our measure of attrition to workers in other occupations. This allows us to provide important context regarding the level and drivers of attrition. Other existing estimates of attrition have focused solely on teachers and do not allow for direct comparisons with turnover in other occupations.

Third, our linked administrative dataset contains rich demographic data on teachers and their employers, including the sector and state they work in, their ATARs, earnings and other demographic variables. This allows us to examine how attrition differs along these important dimensions.

We provide more details on our approach in Appendix C.2. There we also show that our estimate for the number of teachers closely tracks other publicly available data sources and provide further tests for the reliability of our data. We also explain why previous criticisms of the use of administrative data to measure occupational switching are unlikely to affect our main results – if anything we believe they mean that we are likely to underestimate the rate of teacher attrition, both in absolute terms and relative to other occupations.

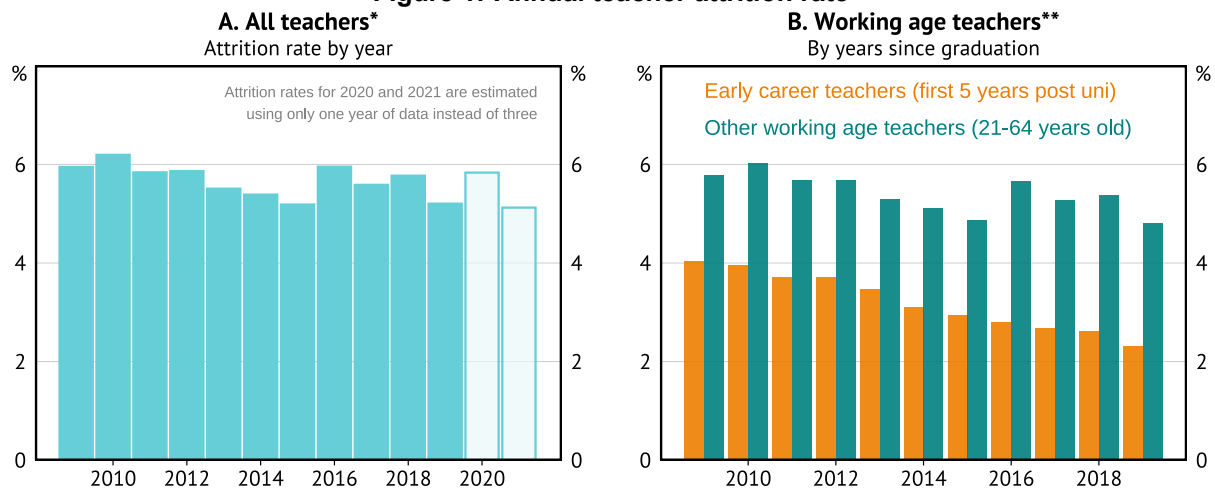
The Extent of Teacher Attrition in Australia

We find that between 5% and 6% of teachers leave the profession each year. Attrition rates decreased slightly between 2009 and 2015, but have remained relatively stable since, including during the COVID-19 pandemic (Figure 1.A).

1 Recent developments in this space have improved the accuracy of attrition estimates. These include the Australian Teacher Workforce Dataset produced by the Australian Institute for Teaching and School Leadership (AITSL) which has provided new insights on a range of topics, including the current level of teacher attrition in Australia (Australian Institute for Teaching and School Leadership, 2023).

Focusing on working age teachers (to minimise the effect of retirements), we find that attrition rates have fallen substantially over time, from 5.6% in 2009 to 4.5% in 2019 (Figure 1.B).[2] Much of this decline has been driven by early career teachers – those in their first 5-years post university – whose attrition rates have almost halved from 4% in 2009 to 2.3% in 2019.

Figure 1: Annual teacher attrition rate



* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Because the tax data we use to estimate attrition is only available up to 2022, attrition rates for 2020 and 2021 are estimated by looking ahead only one year instead of three (as in other years). They are then scaled to the equivalent three year rate based on past data.
** Early career teachers are defined as those who are in their first five years after graduating from their initial school teacher education course.
Sources: ABS; e61

How Does Teacher Attrition Compare to Turnover in Other Occupations?

To better contextualise our estimates of the level of teacher attrition we compare it to the rate of attrition in other occupations.[3] We find that school teachers have the lowest attrition rate among all 97 occupation minor groups (Figure 2). This is true for both male and female workers, and when we look within age groups and across time periods (Figure A.1, A.2). The fact that teacher attrition is lower than turnover in all other occupations suggests it may be difficult for policy makers to reduce it much further.

Of course, it is also important to note that teaching is unique in many ways as an occupation. For one thing it is a job with relatively secure employment, predictable wage increases, and a high union presence. Given these attributes we may expect that people who choose to become teachers in general have a preference for secure employment and are therefore less likely to change jobs. This may exaggerate the size of differences in turnover between occupations, particularly some of those towards the top of Figure 2.

However, school teachers also have slightly lower rates of attrition than workers in occupations with similar characteristics, such as nurses, fire fighters and police, and medical professionals.

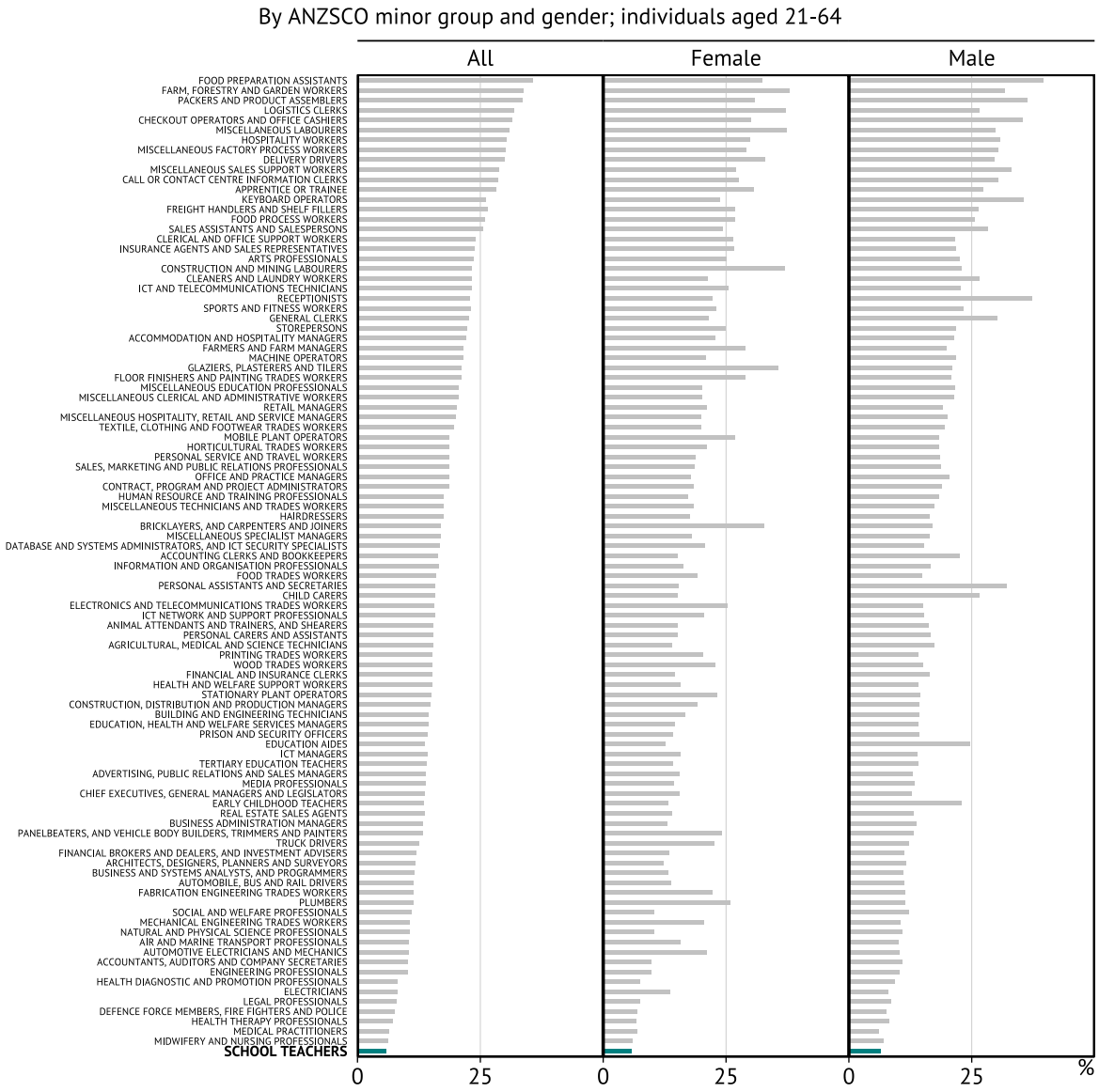
While the overall rate of teacher attrition is relatively low, elevated attrition rates for certain groups of teachers could still be problematic both for the teachers involved and the areas of the education system where they are employed. This makes understanding the drivers of attrition important to help clarify the level of harm caused by teacher turnover and the potential effectiveness of policies designed to address it. This includes understanding which teachers are leaving, where they are moving to, and the extent to which factors like pay influence their decisions. The following sections explore these questions in greater detail.

Attrition Rates Across Sectors, States and School type

In this section we explore differences in attrition along three key dimensions: the sector a teacher works in (public vs private), the jurisdiction in which they are employed (e.g. NSW vs Vic.), and school and teacher type (primary vs secondary, principal

2 The number of teachers aged over 64 has increased over time, and given these older teachers are much more likely to leave through retirement this has partially offset the decline in attrition rates for working age teachers.
3 In this comparison and later sections we focus on workers aged between 21 and 64 to minimise the effect of retirements on our attrition estimates.

Figure 2: Annual attrition rate across occupations



* Individuals are defined as having left their occupation if they are not employed in that occupation for any of the next three years.
Sources: ABS; e61

or special education).[4] These institutional settings are important because they are the level at which many key decisions are made regarding teachers' pay and working conditions, which are both commonly cited as key drivers of attrition (Weldon, 2018a).[5] We find that:

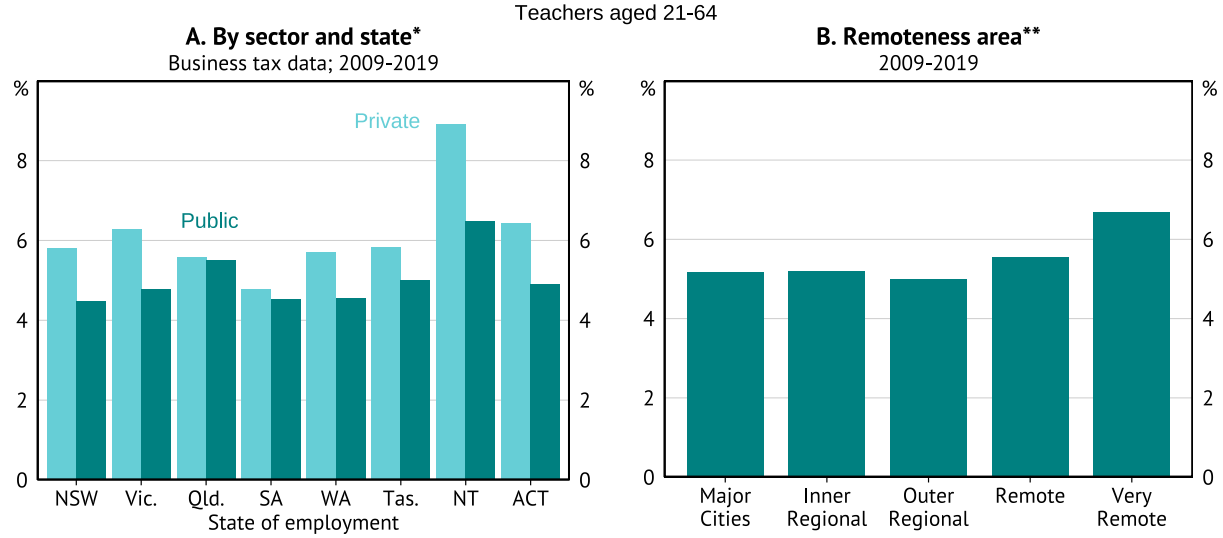
1. **Private school teachers are about 20% more likely to leave teaching than public school teachers.** Roughly 6% of teachers working in the private sector leave teaching each year, compared to 4.9% of teachers working in the public sector (Figure 3.A). Notably, the difference between public and private school teachers seems to be driven by teachers working in high socioeconomic-status (SES) areas having higher levels of attrition (Figure A.3).
2. **Attrition rates within the public sector, on the other hand, are remarkably similar across jurisdictions and SES despite differences in pay and working conditions.**

4 We use information from pay as you go (PAYG) tax payment summaries data to link teachers to their employers and determine their sector of employment (public vs private). Our measure of sector does not distinguish between teachers working in the catholic and independent school systems.
5 In Australia, many of the key decisions regarding teachers' pay and working conditions are made by state and territory governments. These differences in pay and working conditions can be substantial. For instance, a graduate teacher in the Victorian public school system now earns roughly 10% less than a graduate teacher in the NSW public school system (NSW Department of Education, 2025; State Government of Victoria, 2025). Australia also has a large private sector, which educates over a third of all students (ABS, 2023), and makes many of its own decisions regarding teacher pay and conditions.

3. **Teachers living in very remote areas are much more likely to leave the profession each year** — 7%, compared to just 5.2% for those in major cities (Figure 3.B). This pattern likely contributes to the higher attrition observed in the Northern Territory, where around 7.4% of teachers leave the profession each year—40% higher than the average across other jurisdictions (5.3%; Figure 3).
4. **Special education teachers are almost twice as likely to leave teaching.**[6] Each year, over 8% of special education teachers leave the teaching profession (Figure 4). This is almost double the rate of attrition for primary (4.5%) and secondary school teachers (4.3%).

Figure 3: Attrition by state, sector and region

Teachers aged 21-64



* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Information on the sector a teacher works in is drawn from business register data for their main employer. information on the state they work in is based on their place of residence.
** Information on the remoteness area they work in is based on their place of residence.
Sources: ABS; e61

These results provide two key insights into the potential drivers of attrition. First, they highlight that there are some settings, such as special education teachers and schools in the NT and very remote areas, which are strongly associated with higher rates of teacher attrition. These may be areas where policy makers can focus efforts to reduce attrition further.

Second, this analysis provides some suggestive evidence that **teachers pay and working conditions do not have a large effect on attrition** outside of these settings. For instance, outside of the NT, there is relatively little difference in public sector attrition rates across jurisdictions and the SES of the school, despite the fact that most decisions regarding pay and working conditions are determined at this level.[7] The apparently limited impact of pay as a driver of attrition is supported by the fact that private school teachers have higher attrition rates despite earning slightly more than public school teachers. Of course, it could also be the case that private school teachers have access to more attractive outside employment options. The extent to which these factors contribute to attrition is explored further in later sections.

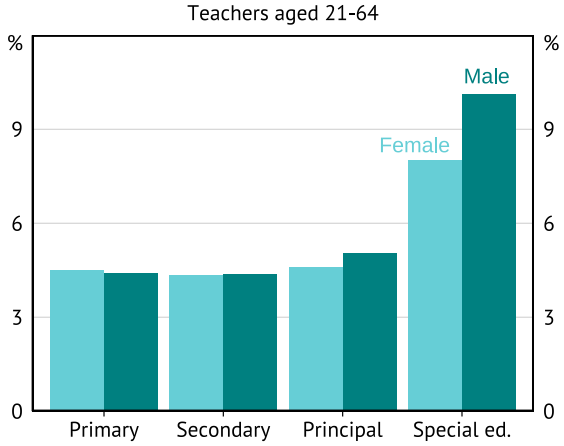
Who is Leaving the Teaching Profession?

In this section, we examine which teachers are more likely to leave teaching. We focus on three characteristics: prior academic performance as measured by ATAR, attachment to the teaching workforce, which we estimate based on earnings, and gender. We find that:

1. **Very high ATAR teachers are the most likely to leave the profession, and those who enter university without an ATAR also have elevated levels of attrition.** Teachers who were ranked in the top 10% of high school graduates (ATARs above 90) are

6 Special education teachers teach primary and secondary school students with learning difficulties, hearing impairment and sight impairment, and promote students' social, emotional, intellectual and physical development.
7 While public sector teacher pay does vary between jurisdictions, it is important to note that these variations are relatively small, typically within 10% for teachers with similar experience. For instance, Goss and Sonnemann (2019) show that in 2019 the top salary for class room teachers in the ACT was roughly 8% higher than the salary in SA and Tasmania, with other jurisdictions falling somewhere in between. For lead teachers, the gap was somewhat wider with a 11.5% pay difference between Queensland and NSW.

Figure 4: Annual attrition rate by school level and teacher's gender



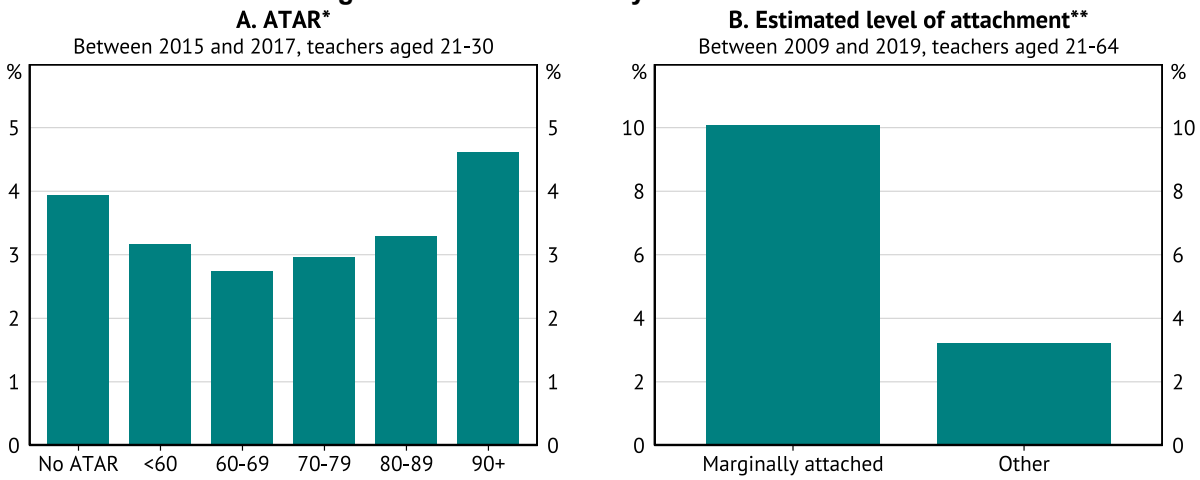
* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teacher type refers to the last occupation that teachers reported working in before leaving the profession. Teachers who change type (e.g. move from reporting being a primary school teacher to a principal are not classified as having left the profession.
Sources: ABS; e61

about 23% more likely to leave the profession each year compared to teachers of a similar age (Figure 5.A). At the other end of the spectrum, teachers who entered university through a non-ATAR pathways are about 15% more likely to leave.[8]

2. **Teachers who are only marginally attached to the workforce are more than three times as likely to leave.**[9] Roughly 10% of teachers who are marginally attached to the workforce leave the profession each year, compared to only 3% of non-marginally attached teachers (Figure 5.B). Just over half of all teachers who exit the profession were marginally attached in the year before leaving (i.e. their second last year as a teacher).

3. **Male and female teachers have very similar rates of attrition.** Female primary school teachers have slightly higher rates of attrition than males (4.5% compared to 4.4%), while male secondary school teachers have slightly higher rates than females (4.4% compared to 4.3%; Figure 4).

Figure 5: Academic ability and attrition rates



* Mean attrition rates between 2015 and 2017. An individual's Australian Tertiary Admission Rank (ATAR), is a percentile ranking system used to measure a high-school student's academic performance relative to their peers in the same graduating year, with a score ranging from 0 to 99.95. ATAR scores are only available for teachers who started university after 2004. Teachers are defined as having left the profession if they are not employed as a teacher for the next three years.
** Teachers are defined as being marginally attached if they are identified as likely working less than full-time in the previous year. This is estimated by comparing their wage income to the total wage income reported by teachers working full-time in Census data.
Sources: ABS; e61

8 Non-ATAR students include those who entered university on the basis of a bridging course, a VET course, another higher education course, work and life experience or their recent secondary education but based on criteria other than their ATAR. As a group these non-ATAR students appear to be most similar to students with very low ATARs, both in terms of their performance at university and their labour market outcomes post university (Dwyer & Griselda, 2023).
9 We define teachers as being marginally attached if they earn less than 1.65 times the adult full time minimum wage. This threshold is based on the estimated difference between the minimum wage and the lower bound of wages earned by teachers who reported working full-time in the 2011, 2016 and 2021 Censuses.

These findings reveal two policy-relevant patterns. First, attrition is higher among individuals who are only marginally attached and are working fewer days per week, and individuals with a poor prior academic record (as measured by entering university through a non-ATAR pathway).

Second, attrition is highest among teachers who potentially have the most lucrative outside options. We find that teachers with very high ATARs are the most likely to leave teaching. We also know from previous e61 research that students with very high ATARs tend to earn much more, on average (Dwyer & Griselda, 2023). In later sections we show that very high-ATAR teachers are among a select group of teachers who seem to seek out more lucrative job offers when leaving teaching.

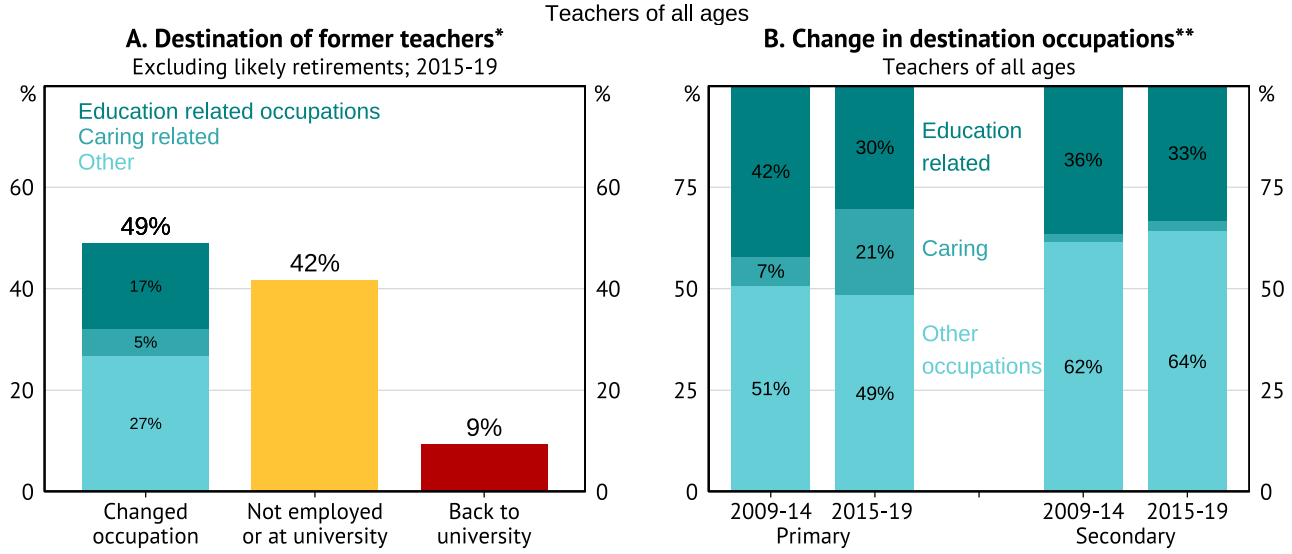
These patterns suggest that academic ability can affect attrition rates in opposite directions, highlighting an important trade-off. Setting a minimum ATAR requirement may reduce attrition by screening out candidates who are less well prepared to deal with the academic demands of teaching. However, attracting very high-ATAR candidates could increase attrition because those teachers have stronger outside options and are more likely to leave for higher-paying careers.

Where Do Teachers Go When They Leave?

The data used in this analysis provides the first comprehensive picture of the career paths of teachers who leave the profession. We can identify the occupations teachers move to, as well as their long-term labour market outcomes using details from their individual tax returns. Understanding these transitions is crucial for evaluating the drivers of teacher attrition. We identify five facts regarding where teachers go when they leave the profession.

Figure 6: Destination of school teachers leaving teaching

Teachers of all ages



* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers aged over 60 who leave teaching, exit the labour force and are not at university for the next three years are excluded from this chart as likely retirements. Teachers are defined as going 'back to university' if they enrol at an Australian university (in a CSP or HELP supported) within 3 years of leaving. Teachers are defined as changing occupation if they enter a new job within three years of leaving teaching. Education related roles include education professionals and managers, as well as education aides. Caring related roles include all other carers and aides.
Sources: ABS; e61

1. **Over 40% of teachers who leave exit the workforce entirely.** Roughly 42% of teachers who leave teaching remain out of paid employment and education for at least the next 3 years when doing so (Figure 6.A). This figure excludes teachers aged over 60 who exited the labour force to minimise the effect of capturing likely retirements. The remainder of teachers who leave either change occupations (49%) or return to university (9%).[10]
2. **More than a third of teachers who change occupations move into another education related role.** Almost 35% of school teachers who change occupation move into another education related role (Figure 6.A), including 6% who become pre-primary teachers, 7% who become teachers' aides, and 5% who become education advisers and reviewers.
3. **Almost a quarter of teachers who leave eventually return to teaching.** Rates of return are especially high for teachers who exit the workforce (40% return within 10 years), those who go back to university (25% return) and those who move into another education related role (20% return) (Figure A.5).

10 Note, most teachers who return to university also work in another occupation while doing so.

4. **Teachers are increasingly moving to work in caring roles instead of education related roles.** Since the introduction of the NDIS in 2014, the share of teachers moving into a caring-related role has more than doubled from 4% to 10%,[11] while the share moving into an education related role has fallen by a similar amount from 41% to 35%. This shift has been driven by primary school teachers where the share moving to education related roles has decreased by 12 ppt from 42% to 30%, while the share moving to caring roles has increased by 14 ppt from 7% to 21% (Figure 6.B).
5. **Career transitions differ markedly between primary and secondary teachers.** About 45% of primary school teachers who change occupations move into roles as pre-primary teachers, education aides, or positions in the care economy (Figure A.6.A). In contrast, fewer than 10% of secondary school teachers transition into these roles, and are instead spread across a much wider range of occupations (Figure A.6.B).

How Much do Teachers Earn When They Change Occupations?

The data used in this analysis allows us to track the labour market earnings of former teachers over time. This enables us to examine the extent to which both short- and long-term income gains appear to be drivers of attrition. We find that:

1. **Almost half of all teachers who change occupations receive an immediate pay rise.** These initial gains are concentrated among teachers who were only marginally attached to the workforce before leaving and thus by definition earning relatively little (Figure 7.B). When we focus only on teachers who were likely working full-time we find that only 40% receive a pay rise after leaving teaching, and less than 14% see a pay rise of 20% or more.
2. **Higher ATAR teachers are more likely to receive a pay rise when leaving.** Almost half of teachers with ATARs above 90 (in the top 10% of high-school students) receive a pay rise of 20% or more when leaving teaching, compared to only 35% of teachers with ATARs of less than 80.[12] This suggests that higher ATAR teachers either have stronger outside options, or are more likely to be motivated by pay as a reason for leaving teaching.
3. **Ten years after leaving teaching, former teachers earn significantly less than those who stayed.** After 10 years, teachers who switched occupations earn about $21,000 ($2023 AUD; or 36%) less than those who stayed in teaching.[13] There are only four occupations where former teachers earn more than those who remain in teaching (Figure 8).

Taken together, these results provide two key insights. First, earning more money does not appear to be the primary driver of attrition for most individuals who leave teaching. Of teachers who were not marginally attached, less than half receive a pay rise when leaving teaching and only a very small number earn at least 20% more. The opportunity for longer term wage growth also does not appear to be a primary driver as after 10 years most teachers who change occupations end up earning substantially less than those who remain. The one exception to this may be high-ATAR teachers, who are more likely to switch to a higher paid job when they leave teaching.

Second, teachers who are marginally attached are better off financially when they change occupations. Almost 60% receive an immediate pay rise, with over 40% earning at least 20% extra in their new roles. Crucially, though, these gains are driven more by the fact that these teachers were working and earning relatively little before leaving, rather than because their new job is very highly paid.

What Other Factors Could Be Affecting Teaching Supply?

Australia has a well-documented teacher shortage (Australian Government Department of Education, 2022). However, teacher attrition rates are declining and are lower than other occupations. So what else might be contributing to this shortage?

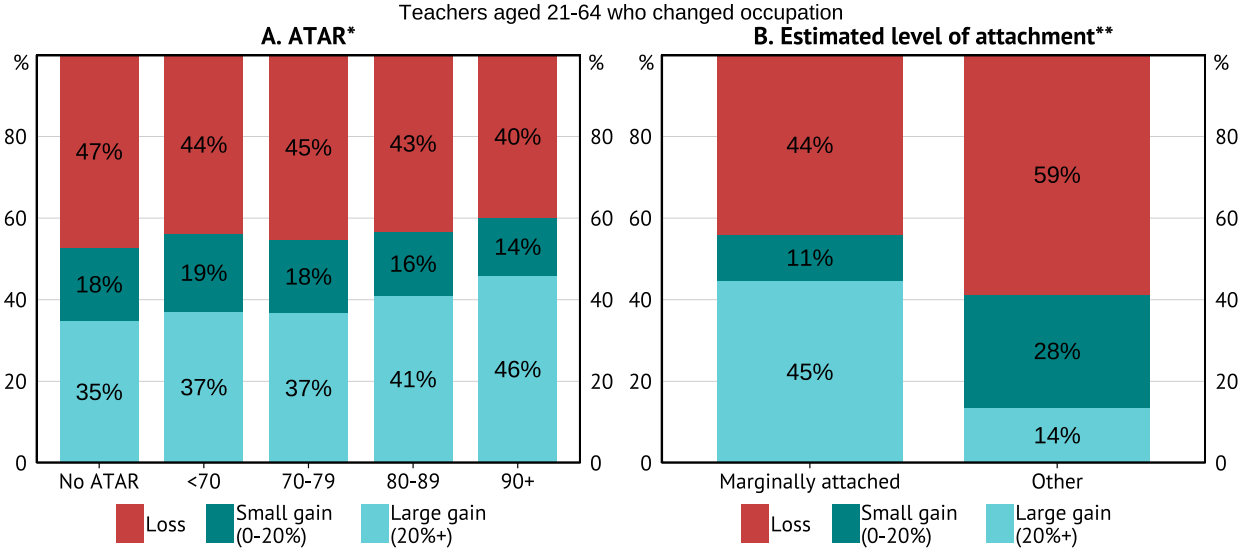
The Transition from University to Employment

Not all teachers who complete an school teacher education course go on to be employed as a teacher. We estimate that about 12% of students who complete a teaching degree are never employed as a teacher,[14] with rates even higher for individuals

11 Caring-related roles are defined as the ANZSCO sub-major group carers and aides, not including education aides.
12 Both figures include both marginally attached and non-marginally attached teachers.
13 In this analysis we focus on teachers aged between 21 and 54 to minimise the effect of retirements on future earnings. We are also restricted to looking at teachers who left between 2009 and 2011 to ensure we can see their earnings 10 years in the future.
14 Employment as a teacher is defined as reporting teaching as the main occupation in which they earnt wage and salary income.

Figure 7: Share of teachers receiving a pay rise when leaving teaching

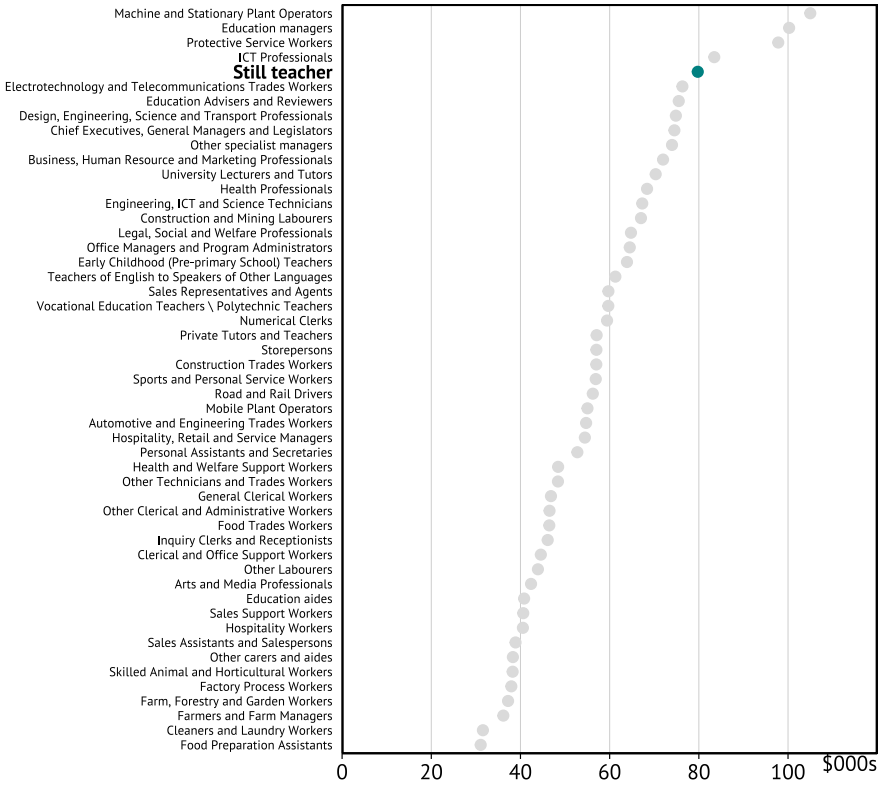
Teachers aged 21-64 who changed occupation



* The change in an individuals pay (annual wage income) is calculated by comparing the total wage income they earnt in the year before leaving teaching to the total wage income they earnt in the year after starting their new job. This calculation is conducted using only data from individuals who started working in another occupation within three years of leaving teaching. An individual's Australian Tertiary Admission Rank (ATAR), is a percentile ranking system used to measure a high-school student's academic performance relative to their peers in the same graduating year, with a score ranging from 0 to 99.95. ATAR data is only available for teachers who entered university from 2005.
** Teachers are defined as being marginally attached if they are identified as likely working less than full-time in the previous year. This is estimated by comparing their wage income to the total wage income reported by teachers working full-time in Census data.
Sources: ABS; e61

Figure 8: Mean wages of former teachers 10 years after leaving teaching ($2023)

Teachers aged 21 to 54 who left between 2009 and 2011



* Mean wage income of former teachers 10 years after they left teaching. Data for 21 to 54 year old school teachers who left teaching and changed occupations. Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers leaving the profession are classified as having changed occupation if they report working in another occupation within the next three years. Destination occupations are recorded at the ANZSCO sub-division (2-digit) level with the exception of education professionals, which are recorded at the 4-digit level.
Sources: ABS; e61

who completed a Graduate Diploma (Figure A.4). And unlike attrition rates for early career teachers who have found a job, the proportion of teaching graduates who never go on to be employed as a teacher has actually increased slightly over time, from 11.6% in 2009-2013, to 12.2% in 2014-2017.

Taking this into account, our estimates imply that the share of teaching graduates who are not employed as a teacher 5-years after graduating from university fell from about 29% in 2009 to about 22% in 2019 – a decline of 24%. This is much lower than the measured decline in early career attrition rates for graduates who find a job as a teacher, which declined by over 40%, from 4% per year in 2009 to 2.3% in 2019.

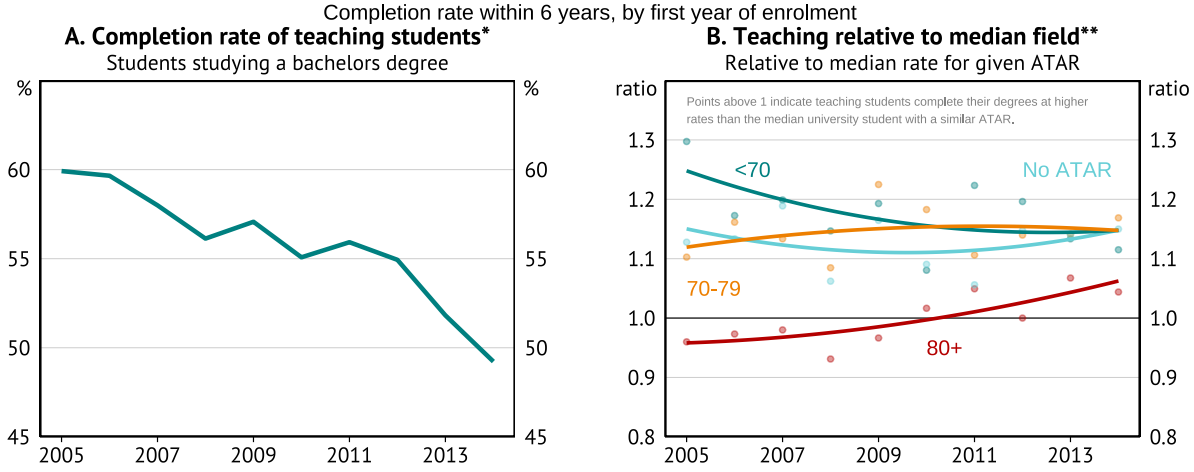
Teaching Degree Completion Rates

A second potential driver of supply challenges is the decline in degree completion rates for students enrolled in school teacher education courses (ABC News, 2024). Completion rates for undergraduate students have declined steadily from approximately 60% for students who first enrolled in 2005, to below 50% for students who first enrolled in 2014 (Figure 9.A).[15]

But while declining completion rates are undoubtedly affecting the supply of new teachers, they do not appear to be a teacher education-specific problem. Looking across university courses, school teacher education course completion rates have declined roughly in line with completion rates in other fields of education for students with similar ATARs. Figure 9 panel B compares the share of undergraduate teaching students completing their degrees within 6 years to the share of students in the median narrow field of education (median based on completion rates). It shows that teaching degree completion rates, despite falling, have remained comfortably above the median rate for students with similar ATARs.

Figure 9: Share of undergraduate teaching students completing their degrees

Completion rate within 6 years, by first year of enrolment



* Sample includes CSP and HELP eligible undergaduate students who started their courses between 2005 and 2014.An individual's Australian Tertiary Admission Rank (ATAR), is a percentile ranking system used to measure a high-school student's academic performance relative to their peers in the same graduating year, with a score ranging from 0 to 99.95.
** Ratio of teaching completion rate relative to median narrow field completion rate for students of a given ATAR. Points above (below) 1 indicate first year teaching students complete their degrees at higher (lower) rates than the median rate for students with a similar ATAR.
Sources: ABS; e61

This finding suggests that declining undergraduate course completion rates largely reflect broader trends affecting all university courses. This suggests that it may not be an easy problem for teacher education specific policies to address.

But if attrition isn't to blame, and declining university completion rates appear to be driven by broader trends affecting all fields, where should education policy makers focus their efforts to increase the supply of teachers?

Enrolments in Teaching Degrees

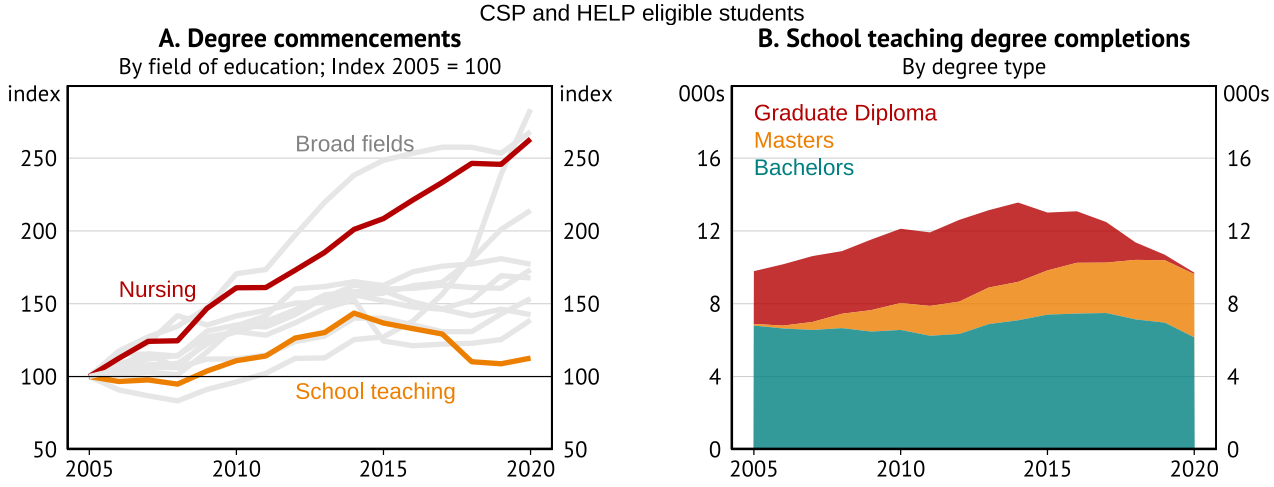
There is one area where teaching does stand out: the number of new students commencing a degree at university. Over the past two decades school teaching course commencements have fallen behind the rest of the pack.[16] We estimate that

15 In line with previous estimates we measure course completion rates based on the share of students who graduate from a teaching degree within 6 years of first enrolling in a teaching degree. Very few students who do not graduate within the first 6 years go on to later complete a teaching degree.
16 We define school teaching courses as students studying either primary teacher education (ASCED 070103) or secondary teacher education (ASCED 070105) courses. When we include other courses that sit within the teacher education narrow field of education we find similar trends, although there has been slightly more growth overtime (see Appendix C.2.4). We further narrow our focus to students enrolled in or completing a Bachelors, Masters (non-research) or Graduate Diploma course.

number of new first-year domestic students commencing a degree in primary or secondary teaching increased by only 12.6% between 2005 and 2020 (Figure 10.A).[17] In comparison, the number of students enrolling in nursing degrees increased by 163% over the same period. In fact, every broad field of education saw faster growth in new commencements compared to school teaching.[18]

Figure 10: Number of new undergraduate students

CSP and HELP eligible students



* The Higher Education Information Management System (HEIMS) data we use includes students who are enroled in a Commonwealth Supported Place (CSP) or apply for Higher Education Loan Program (HELP) loan. We define teaching students as those enrolled in primary teacher education (070103) or secondary teacher education (070105) courses. We further narrow the focus of our analysis to students enroled in or completing a Bachelors, Masters (non-research), or Graduate Diploma course. For degree commencements, we use the date the student first enrolled in a unit (consumed student load) in that course. There are several important limitations of this data which we discuss in Appendix C.2.4.
Sources: ABS; Department of Education; e61

In this regard, our findings are broadly consistent with research conducted by the Australian Institute for Teaching and School Leadership (2024), which finds that commencements in all initial teacher education courses (including early childhood) grew by less than 20% between 2005 and 2020.

The research by Australian Institute for Teaching and School Leadership (2024) also shows that since 2020 commencements in initial teacher education courses have begun to increase, growing by 7% in 2021. However, despite these encouraging signs, school teaching still has a very long way to go to catch up with nursing and other fields of educations.

Policy Implications and Conclusion

Our findings have several important implications for policymakers. First, they show that early career attrition rates have almost halved over the last 10 to 15 years. At the same time, our analysis reveals that teacher attrition rates are now lower than turnover in all other occupations. Combined with the fact that attrition rates are very similar across jurisdictions, which have somewhat different approaches to pay and working conditions, this suggests that it may be challenging for policy makers to reduce attrition much further.

Second, we show that there are a few select areas where teacher attrition is particularly elevated. These include teachers working in very remote areas of Australia, especially in the Northern Territory, and teachers working in special education schools or classes. Reducing attrition in these areas may require further targeted policy interventions.

17 Our data is drawn from the Higher Education Information Management System (HEIMS) dataset. In the version of the dataset we had access to for this work we are only able to view students who are enrolled in a Commonwealth Supported Place (CSP) or apply for a Higher Education Loan Program (HELP) loan. Given the eligibility requirements for these programs, this means our analysis will capture most domestic students, but will miss most international students and some postgraduate students who do not apply for a HELP loan. The version of the HEIMS data we use also comes with several important limitations including entangled records and missing links to the PLIDA spine that mean we will underestimate the number of students, but as this affects all fields it should not affect the main findings of our analysis.

18 One factor that may have contributed to teaching falling behind is the phasing out of 1-year Graduate Diplomas (Dip Ed). Teaching degree completions reached their peak in 2014, just as Dip Eds began to be phased out (Figure 10.B). Although 2-year Masters courses still provide a post graduate pathway into teaching, the number of individuals who completed a Masters in 2020 was about half the number who completed either a Dip Ed or a Masters in 2014.

Third, we show that in many cases attrition may not be inherently harmful for either the individual teacher or the education system as a whole. For individual teachers, those with very high ATARs, and those who were only marginally attached to the workforce, on average, transition into higher-paying roles, which may be a better fit.

From the perspective of the education system as a whole attrition also does not always represent a loss. A large share of school teachers who leave teaching move into other education-related roles, such as pre-primary education and education support aides, where their skills and experience continue to benefit the sector. Policies aimed at reducing attrition should take into account that it may have a negative impact on other areas of the education workforce.

Fourth, our analysis highlights an important structural dynamic: how the expansion of one sector can influence workforce trends in others. In the case of teaching, the rapid growth of the care economy following the introduction of NDIS appears to have created an alternative career pathway for primary school teachers. While such expansions may be necessary, understanding their impact on other occupations is crucial for workforce planning.

Finally, we highlight that there is one area where teaching is a clear outlier when it comes to factors affecting supply: the number of new university students enrolling in teaching degrees has grown much more slowly than enrolments in other fields. Combined with the general decline in completion rates across university courses, this has significantly reduced the pipeline of new teachers entering the profession relative to the number of graduates entering other professions, such as nursing. The fact that teaching stands out in this area also suggests that the causes of this decline may be more addressable through education specific policies.

Ultimately, our work points out that some level of attrition is likely inevitable and could even be beneficial for some workers. Like other sectors, education also benefits from workforce mobility that helps individuals find the occupation which is the best fit for them while ensuring that those who remain are engaged and productive.

References

ABC News. (2023). *Pandemic exposed australia's teacher shortage, students and schools are feeling it* [Accessed: 30-Jan-2023]. https://www.abc.net.au/news/2023-01-30/pandemic-exposed-australia-teacher-shortage-students-schools/101886452

ABC News. (2024, January). *Interview with jason clare - abc news breakfast* [Accessed: 2025-02-04]. https://ministers.education.gov.au/clare/interview-abc-news-breakfast-3

ATO. (2022). I can't find my occupation on the tax return form. https://community.ato.gov.au/s/question/a0J9s000000NanI/p00193236

Australia Bureau of Statistics. (2024). Job mobility. https://www.abs.gov.au/statistics/labour/jobs/job-mobility/latest-release

Australian Government Department of Education. (2022). *National teacher workforce action plan* [Accessed: 30-Jan-2025]. https://www.education.gov.au/national-teacher-workforce-action-plan

Australian Institute for Teaching and School Leadership. (2023). Atwd national trends: Teacher workforce. https://www.aitsl.edu.au/research/australian-teacher-workforce-data/atwd-reports/national-trends-teacher-workforce

Australian Institute for Teaching and School Leadership. (2024). National trends initial teacher education pipeline. https://www.aitsl.edu.au/research/australian-teacher-workforce-data/atwd-reports/national-trends-ite-pipeline-feb2024

Business Longitudinal Analysis Data Environment (BLADE). (2001 - 2024). *BLADE, ABS DataLab. Findings based on use of BLADE data.*

Convery, S. (2022, August). *'we need to fix this': Australian education ministers to address nationwide teacher shortages* [Accessed: 2025-03-31]. https://www.theguardian.com/australia-news/2022/aug/08/we-need-to-fix-this-australian-education-ministers-to-address-nationwide-teacher-shortages?utm_source=chatgpt.com

Department of Education. (2022a). National teacher workforce action plan. https://www.education.gov.au/national-teacher-workforce-action-plan

Department of Education. (2022b). *Teacher workforce shortages – issues paper* (tech. rep.) (Accessed: 2025-02-04). Australian Government Department of Education. https://ministers.education.gov.au/sites/default/files/documents/Teacher%20Workforce%20Shortages%20-%20Issues%20paper.pdf

Dwyer, E., & Griselda, S. (2023). *What's in an ATAR? How University Admission Scores Predict Future Incomes*.

Gallant, A., & Riley, P. (2014). Early career teacher attrition: New thoughts on an intractable problem. *Teacher Development*, *18*(4), 562–580. https://doi.org/10.1080/13664530.2014.945129

Goss, P., & Sonnemann, J. (2019). Attracting high achievers to teaching. https://grattan.edu.au/wp-content/uploads/2019/08/921-Attracting-high-achievers-to-teaching.pdf

Hathorne, C., & Breunig, R. (2022). Occupational mobility in the alife data: How reliable are occupational patterns from administrative australian tax records? *Economic Papers: A journal of applied economics and policy*, *41*(4), 297–324.

Jackson, C. K., Rockoff, J. E., & Staiger, D. O. (2014). Teacher effects and teacher-related policies. *Annu. Rev. Econ.*, *6*(1), 801–825.

Kini, T., & Podolsky, A. (2016). Does teaching experience increase teacher effectiveness? a review of the research. *Learning Policy Institute*.

NSW Department of Education. (2025). *Salary of a teacher* [Accessed: 2025-04-02]. https://education.nsw.gov.au/teach-nsw/explore-teaching/salary-of-a-teacher

Person Level Integrated Data Asset (PLIDA). (2001 - 2024). *PLIDA Modular Product, ABS DataLab. Findings based on use of PLIDA data.*

Queensland College of Teachers. (2013). Attrition of recent queensland graduate teachers. https://cdn.qct.edu.au/pdf/Retention_Research_Report_RP01.pdf

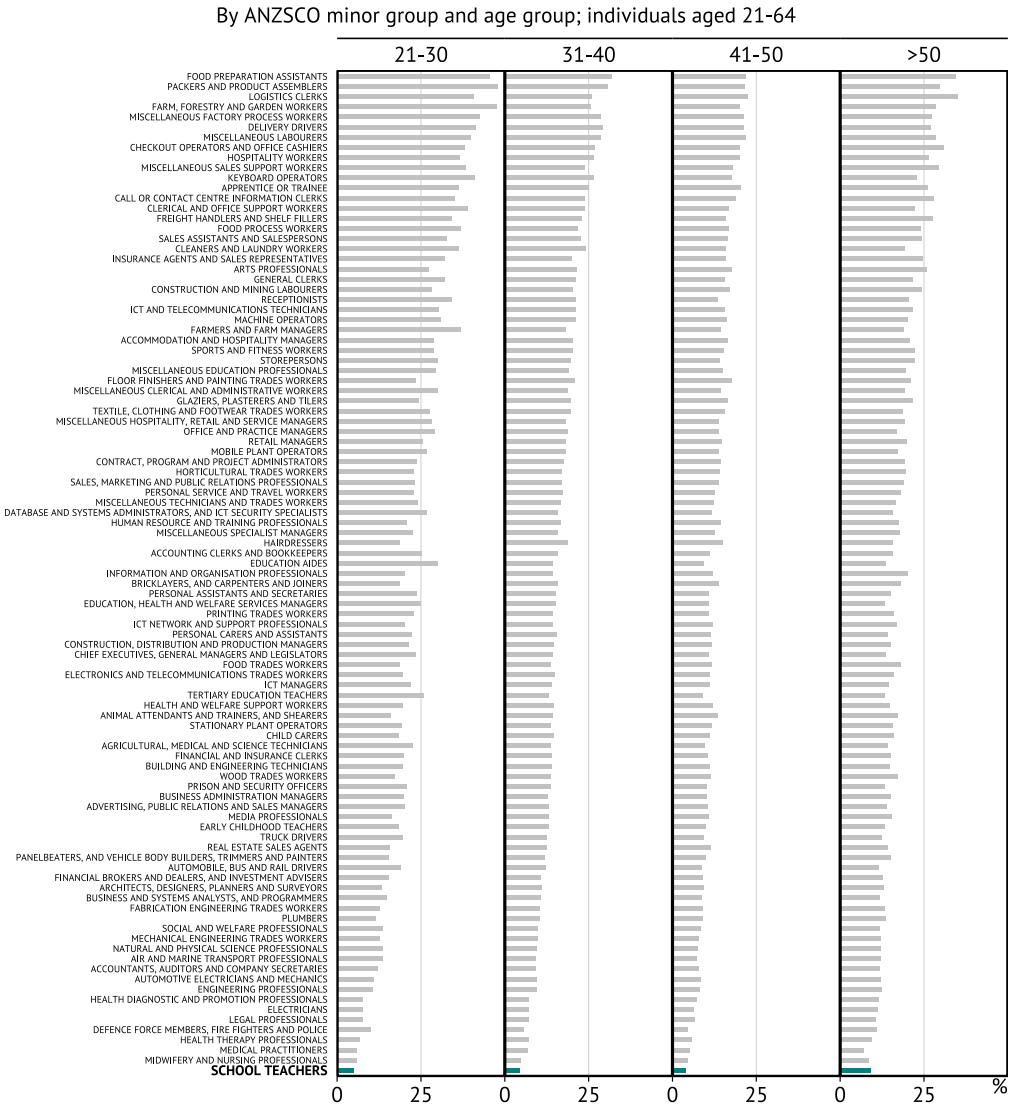
State Government of Victoria. (2025). *What is teaching like as a career?* [Accessed: 2025-04-02]. https://www.vic.gov.au/what-teachings-like

Weldon, P. (2018a). Early career teacher attrition in australia: Evidence, definition, classification and measurement. *Australian Journal of Education*, *62*(1), 61–78.

Weldon, P. (2018b). Early career teacher attrition in Australia: evidence, definition, classification and measurement. *Australian Journal of Education*, *62*(1), 61–78. https://doi.org/10.1177/0004944117752478

A.1. Additional results

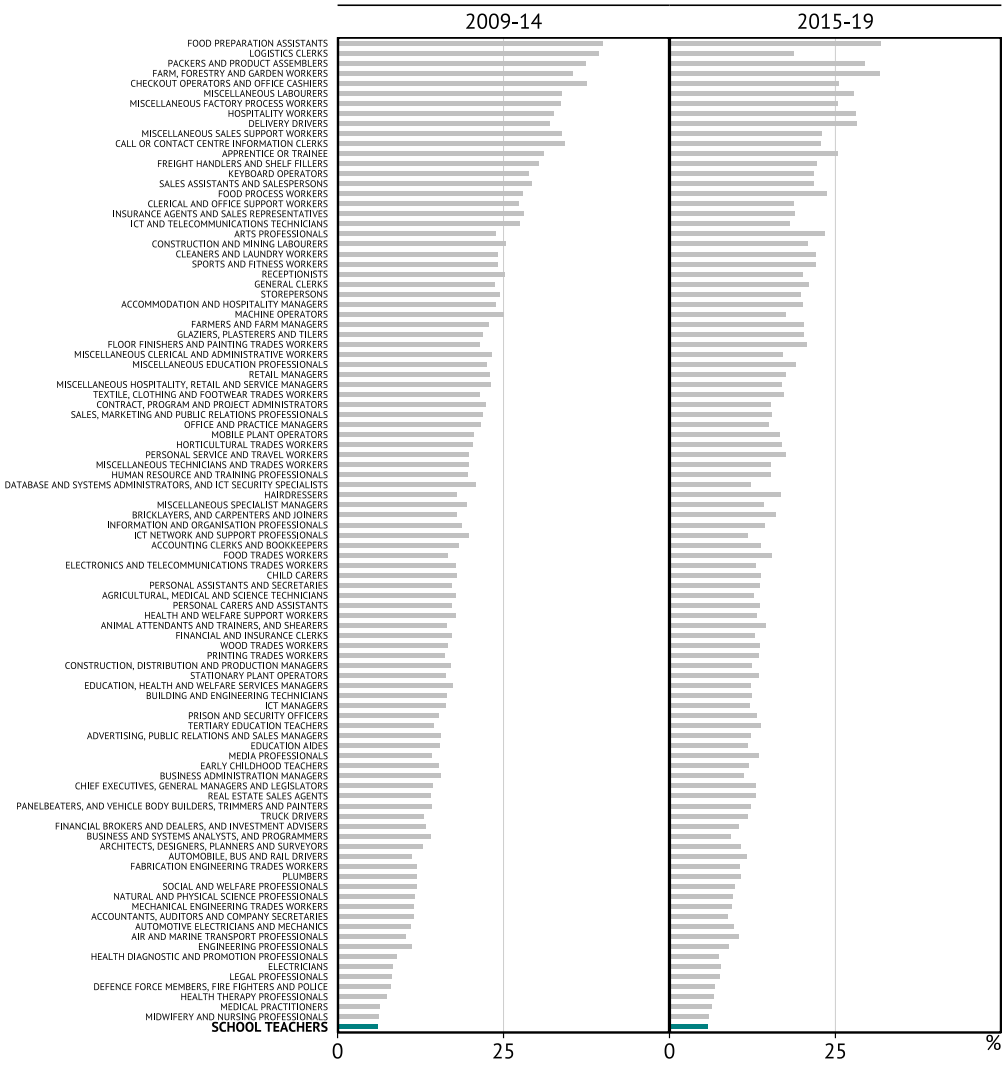
Figure A.1: Annual attrition rate across occupations, by age



* Individuals are defined as having left their occupation if they are not employed in that occupation for any of the next three years.
Sources: ABS; e61

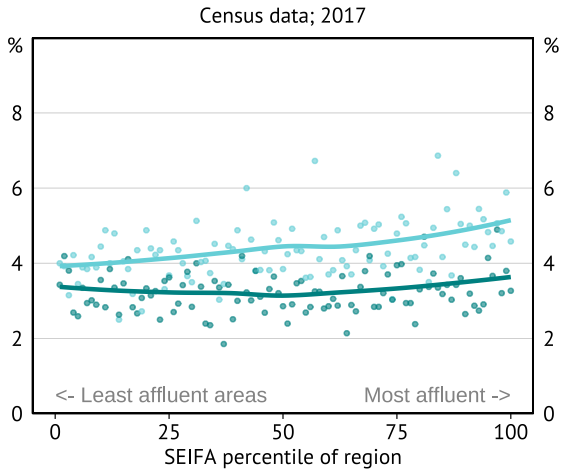
Figure A.2: Annual attrition rate across occupations, by time period

By ANZSCO minor group and gender; individuals aged 21-64



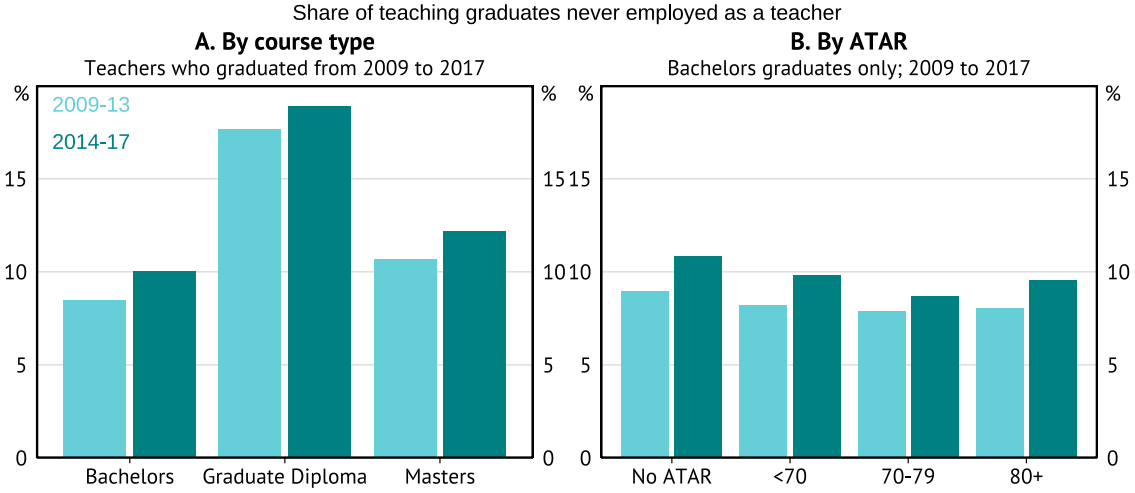
* Individuals are defined as having left their occupation if they are not employed in that occupation for any of the next three years.
Sources: ABS; e61

Figure A.3: Annual attrition rate by socioeconomic status (SEIFA)



* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Mean attrition rates during the 2016-2017 financial year for teachers who reported the location of their place of work through the 2016 Census. Attrition rates are slightly lower because all teachers in this sample reported being employed several months into the new financial year when the Census was conducted.
Sources: ABS; e61

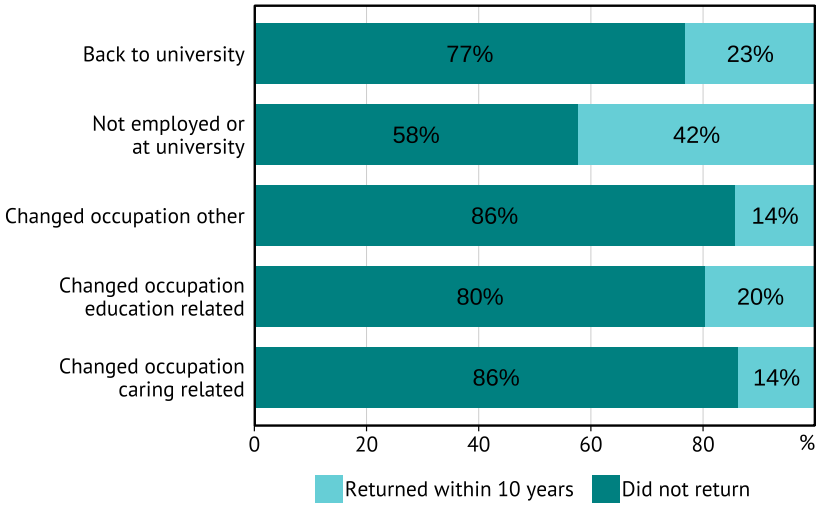
Figure A.4: Share of teaching graduates never employed as a teacher



* Employment as a teacher is based on whether a graduate ever reports being a school teacher as the main occupation in which they earnt wage and salary income on their personal income tax return. Individual who study school teaching but never report it as their main occupation will be counted as never being employed as a teacher.
Sources: ABS; e61

Figure A.5: Share of former teachers who return to teaching

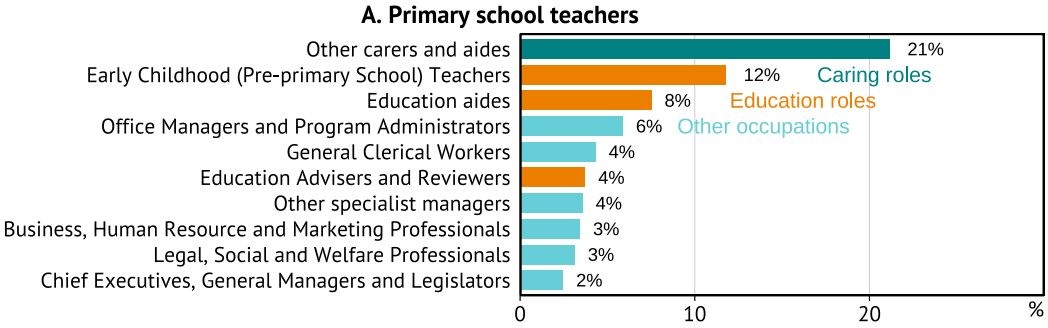
Teachers leaving between 2009 and 2011; all ages

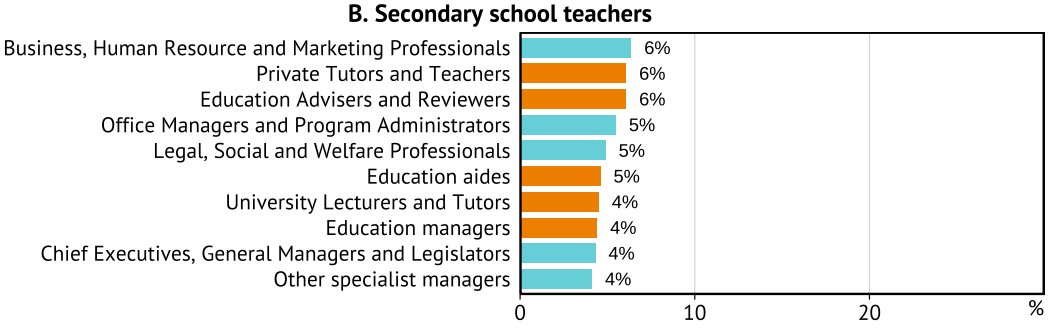


* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers are then classified as having returned if they are again employed as a teacher 10 years after leaving teaching. Teachers are defined as going 'back to university' if they enrol at an Australian university (in a CSP or HELP supported) within 3 years of leaving. Teachers are defined as changing occupation if they enter a new job within three years of leaving teaching. Education related roles include education professionals and managers, as well as education aides. Caring related roles include all other carers and aides.
Sources: ABS; e61

Figure A.6: Top occupations of former teachers

Teachers aged 21-64 who changed occupation; 2015 to 2019





* Destination occupations for 21 to 64 year old primary and secondary school teachers who left teaching and changed occupations. Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers leaving the profession are classified as having changed occupation if they report working in another occupation within the next three years. Occupations are reported at the ANZSCO sub-major group level with the exception of education professionals, which are reported at the unit group level.
Sources: ABS; e61

B.1. Previous Australian Research on Teacher Attrition

B.1.1 Existing Estimates of Teacher Attrition Vary Widely

Estimates of early career attrition rates – where most research has focused – range from as low as 5% to as high as 50% for the share of new teachers who leave within the first five years (1% to 10% yearly). These include:

- Australian Institute for Teaching and School Leadership (2023) estimates which suggest that only 1.28% of new teachers discontinue their teaching registration each year, or roughly 5-6% during the first five years of employment.
- Queensland College of Teachers (2013) analysis that finds that 13.5% of Queensland teachers discontinue their registration within the first five years of employment.
- NSW Government (2012) budget estimates which suggest that between 8% and 10% of permanent public-school teachers leave within the first five years of employment.
- NSW Department of Education (2003) anecdotal data that suggests up to 25% of teachers leave within the first five years.
- Estimates by Gallant and Riley (2014), that find that 40-50% of teaching graduates leave within the first five years, although this figure seems to largely be based on findings from international research and a very small sample of Australian teachers.

The wide range of existing estimates in large part reflects differences in the data used to study attrition. We discuss these limitations in the section below on data.

B.1.2 Existing Research Has Other Important Limitations

In addition to the wide range of attrition estimates, existing research has three other important limitations:

1. **Most research has focused on early career attrition.** While this is a group of teacher for whom we might expect attrition to be higher or more harmful, they are not the only group of teachers leaving the profession. A better understanding of the nature of attrition over the entire length of a teaching career will better inform retention policies.
2. **Little is known about how teacher attrition compares to attrition rates in other occupations.** Most existing research in this area has focused solely on teacher attrition and has not compared attrition rates to workers in other occupations. For the most part this is because existing data sources do not allow comparable estimates of attrition rates in other occupations.
3. **Information on why teachers leave and what they do after leaving teaching tends to be based on small surveys with low response rates.** Surveys allow researchers to collect detailed data on the reasons why teachers are leaving the profession and their experience before leaving. However, most of surveys used to analyse the reasons behind teacher attrition have low response rates and often very small samples. Low response rates and small samples are more likely to produce biased or imprecise estimates of the drivers of attrition and the experiences of teachers who leave the profession. Existing surveys have also largely not been able to track teachers outcomes after they leave teaching.

B.1.3 Many of These Limitations Are Related to the Quality of the Data Used to Study These Questions

There are three main types of data that have been used to study teacher attrition in Australia. While each dataset has strengths that make them useful for studying teacher attrition rates specifically, they also each have important limitations when it comes to contextualising the rate of teacher attrition and examining teachers outcomes after they leave the profession.

1. **Teacher registration data.** Registration data provides a clear measure of the number of qualified teachers in a state or territory. However, many teachers who leave keep their registration (Australian Institute for Teaching and School Leadership, 2023; Queensland College of Teachers, 2013). There is also no easy way to compare attrition rates between occupations, or identify why teachers are leaving, where they go, or what their long run outcomes are.

2. **Teacher workforce data.** Workforce data allows researchers to identify the number of permanent teachers leaving, but it runs into many of the same challenges as registration data. It also generally does not cover the private sector or include information on the 15-20% of teacher who are employed in temporary positions (Weldon, 2018b).
3. **Survey data.** Survey data provides perhaps the richest information on teacher attrition. However, even the best surveys of teacher attrition still tend to have very low response rates,[19] especially when they begin to look at longer run outcomes of teachers who leave the profession (Australian Institute for Teaching and School Leadership, 2023). They also rarely include information on attrition in other occupations, which means that it is difficult to place levels of teacher attrition in a broader context.

These limitations have made it difficult for policymakers to assess the true scale of teacher attrition and design appropriate policy responses.

19 Even the large, high quality ATWD Survey conducted by the Australian Institute of School Leadership has a response rate of only 7%, although it's large size still means that it captures almost 38,000 respondents (Australian Institute for Teaching and School Leadership, 2023)

C.1. Data

C.1.1 Longitudinal Linked Employee-Employer Dataset

The core dataset used in our analysis is drawn from de identified personal income tax (PIT) returns. We use the PIT data to identify each worker's occupation in a given financial year. The Australia Taxation Office (ATO) collects information on individuals' occupations as part of their screening of deductions made by individuals earning wage or salary income (ATO, 2022). All workers who report earning wage or salary income are required to report the occupation for the main role in which they earned wage and salary income that year. In our dataset, over 99% of individuals who report earning salary and wage income report an occupation code (see Figure C.4).

Using this data we identify workers ANZSCO occupation codes. This process is relatively straightforward as the ATO occupation codes have largely aligned with the ABS ANZSCO 2006 coding structure since 2009.[20]

We next link the PIT occupation and earnings data to pay as you go (PAYG) payment summary data. This allows us to construct a Longitudinal Linked Employee-Employer Dataset (L-LEED) of all job-holders in Australia. By linking employees to their employer we are able to determine the sector each worker is employed in (public vs private) and the type of employer using data from business income tax files and business register information (BLADE data) (Business Longitudinal Analysis Data Environment (BLADE), 2001 - 2024).

We also use information on salary and wage income from the PAYG and PIT data to track workers labour earnings over time and determine whether they were employed in a given year.

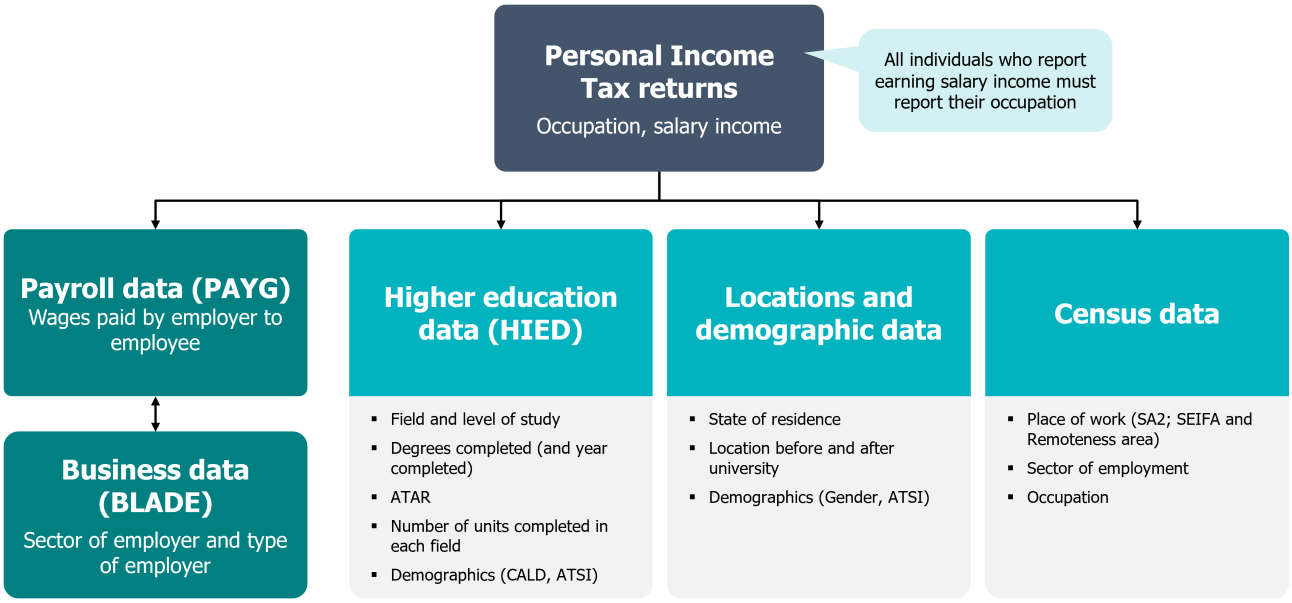
We supplement this core L-LEED by adding further demographic data from the ABS Personal Level Integrated Data Asset (PLIDA) (Person Level Integrated Data Asset (PLIDA), 2001 - 2024). This data includes:

- **Higher education data (HIED/HEIMS).** We use the HIED/HEIMS data to determine the field and level of study of individuals who attended university after 2005, when they first enrolled in a degree and in when they graduated from that degree. We can also observe their Australian Tertiary Admission Rank (ATAR), which is a number between 0.00 and 99.95 that indicates a student's position relative to all the students in their age. Finally, the HIED provides a number of other demographic data, including whether the student was born overseas, speaks a language other than english at home, their parents education level and whether they have Aboriginal or Torres Strait Islander heritage.
- **Locations and demographic data.** The combined PLIDA demographic and locations data files allow us to determine an individuals state of residence and additional demographic data, including their age, gender and ATSI status.
- **Census data.** We use Census data to obtain more precise information on individuals place of work. This allows us to determine the socio-economic status and regional location of the school in which they are employed. We also use data from the Census to cross check out estimates of worker's occupation codes and their sector of occupation.

The various components of this L-LEED, and how they relate to one another, are summarised in Figure C.1 below.

20 The one exception to this is individuals working as apprentices, trainees or self-employed consultants who receive their own special code for the purposes of the ATO expense screening process.

Figure C.1: Longitudinal linked employee-employer dataset (L-LEED)



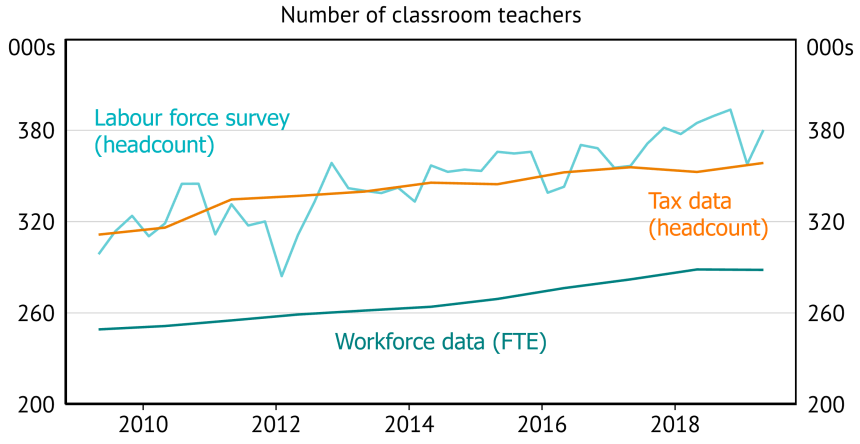
C.1.2 Comparison with other publicly available measures of the teaching workforce

To gauge the reliability of our estimates of the number of teachers we compare our figures from the tax data with estimates from two other publicly available data sources: survey estimates from the ABS Labour Force Survey (LFS) and publicly available workforce data from the Australian Curriculum, Assessment and Reporting Authority (ACARA).

We find that the number of school teachers in the tax data closely tracks the numbers reported in these two other publicly available data sources (Figure C.2). Because the ACARA estimates are measured in full-time equivalent (FTE) worker terms they are slightly lower than the headcount estimates from the tax data and the LFS. However, they imply an FTE to headcount ratio of roughly 1.25, which seems plausible given the large share of teachers working on a part-time or casual basis.

Our findings from this comparison mirror those from similar work by Hathorne and Breunig (2022), who conclude that the administrative tax data provides a good estimate for the number of workers employed in each occupation throughout the economy. We discuss in the next section Hathorne and Breunig (2022) findings regarding the use of administrative tax data to capture occupational switching.

Figure C.2: Comparing tax data estimates with other sources



* Workforce data comes from the Australian Curriculum, Assessment and Reporting Authority (ACARA).
Sources: ABS; e61

C.2. Empirical Approach

C.2.1 How we measure teacher attrition

To classify attrition we focus on teachers who are currently earning wage or salary income and report their main occupation as being a school teacher. This definition includes primary, secondary and special education school teachers, as well as individuals working in school leadership positions (school principals, vice principals etc). We exclude from this definition school teachers working in early childhood education (pre-primary) schools. When we compare teacher attrition rates with workers in other ANZSCO minor group occupations we take a slightly simpler definition of school teachers and use the ANZSCO minor group definition (still excluding early childhood) to ensure consistency between occupational groups. This means that in these comparisons we classify a teacher becoming a principal as a teacher leaving the profession.

To measure attrition we classify teachers from this group into one of the following categories based on the below criteria:

1. **Still teacher.** If the individual reported working as a school teacher in any of the next three years we classify them as still being a school teacher.
2. **Returned to university.** If the individual did not report working as a school teacher in any of the next three years, but did enrol at an Australian university (in either a Commonwealth Supported Place or applied for a HELP loan) we classify them as having returned to university.
3. **Changed occupation.** If the individual did not report working as a school teacher in any of the next three years, but did report working in another occupation we classify them as having changed occupation.[21] In our analysis of where teachers go when they leave the profession we use the first occupation code they report after they stop reporting that they are a school teacher.
4. **Not employed or at university.** If the individual did not earn wage or salary income over the next three years or enrol at an Australian university we classify them as being not employed or at university.

Our estimate of attrition rates is calculated by taking the number of teachers who are classified as having returned to university, changed occupation or leaving employment and dividing it by the total number of teachers employed in that year.

C.2.2 Measurement issues

Because the occupation data we use to measure attrition is largely self-reported and often pre-filled based on an individual's last tax return, it is highly likely that there will be some degree of under reporting of occupational switching in our data. Individuals do receive some guidance to update their occupation if they change roles and are claiming new deductions that are not in line with claims typically submitted by individuals employed in their old occupation (see ATO (2022)). In our case this means that a former teacher might be prompted to update their occupation code if they submit an unusual deduction claim after changing jobs.

Despite these prompts by the ATO, Hathorne and Breunig (2022) show that the rate of occupational switching (changes in reported occupation from one year to the next) is much lower in the administrative tax data we use than in the Household, Income and Labour Dynamics in Australia (HILDA) Survey. They argue that this under reporting is largely driven by the pre-filling of occupation codes for individuals who use electronic filing methods, which means that many of these individuals do not update their occupation as regularly as they should.

This under reporting of occupational switching could present a number of potential challenges for our analysis. We focus on what we think are the two main risks. First, will any potential under reporting affect our estimate of teacher attrition, or will it instead largely miss more superficial, temporary changes in occupation that what we are less interested in (e.g. where a worker changes role within a firm before later changing back, such as a teacher being promoted to a school leadership position, or changing from primary to secondary school teaching). Second, will any potential under reporting lead to a biased comparison of turnover between occupations in a way that could explain our findings that school teachers have relatively low rates of attrition.

21 This group includes individuals who moved to an occupation who code could not be convert to ANZSCO.

C.2.2.1 Is this potential under reporting likely to affect our teacher attrition estimates significantly?

We believe the potential under reporting of occupational switching in the PLIDA data is unlikely to significantly affect our measurement of teacher attrition for two reasons.

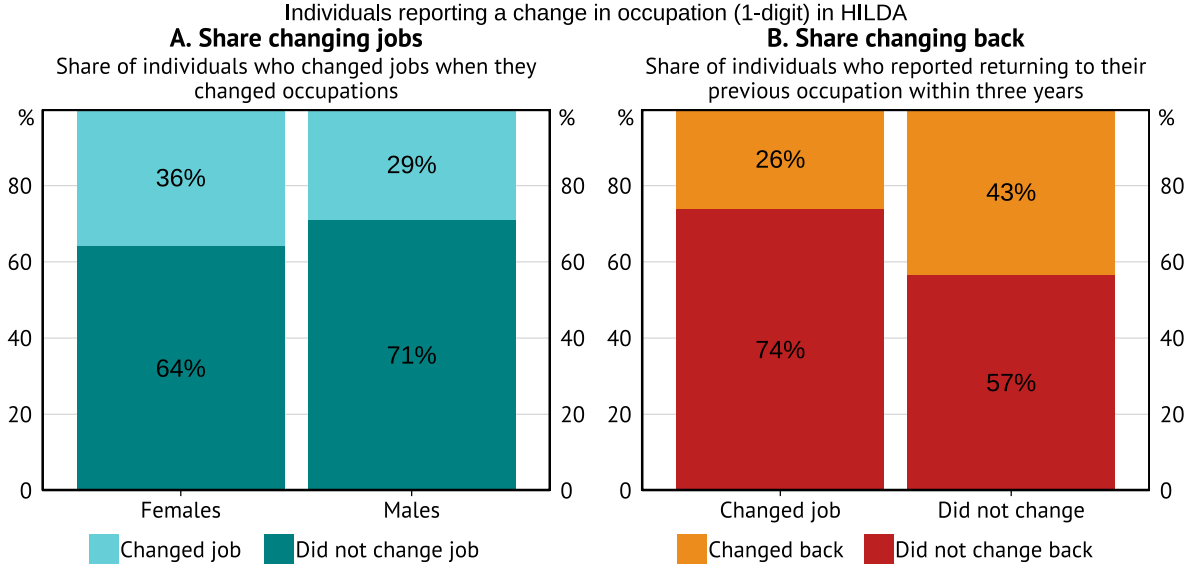
First, the HILDA data appears to capture a large number of temporary or superficial role changes within firms.[22] Looking at 1-digit occupation changes, we find that more than half of all occupation switches recorded in HILDA occur without the worker in question changing jobs (Figure C.3.A). This also helps explain why the rate of occupational switching in HILDA is more than double the rate of job switching reported in ABS estimates of job mobility (Australia Bureau of Statistics, 2024).

These occupation switches within firms may indeed be examples of legitimate occupational role changes (e.g. a promotion to manager, or a move to a different team). However, many appear to be simply short term reported role changes and a large number of workers soon report moving back to their previous occupation. Of workers switching occupations in HILDA but remaining at the same firm, roughly 43% report moving back to their previous occupation within three years (Figure C.3.B).

Compared to HILDA, the vast majority of occupation switches we observe for teachers in the tax data coincide with a change in job (see Figure C.5). If most of the difference between HILDA and the tax data is driven by small, often temporary occupation changes within firms this should not affect our measure of teacher attrition. This is because we do not consider a switch between primary and secondary school teaching or a promotion to a school leadership position as attrition. This means that missing these moves within a firm (or within a school or school system) will not affect our estimate of attrition.

Figure C.3: Occupational switching in HILDA

Individuals reporting a change in occupation (1-digit) in HILDA



* The figure plots data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey waves 1-22. Individuals are defined as changing occupations if their reported 1-digit ANZSCO occupation changes from one year to the next. Individuals are classified as having changed jobs if they report changing jobs in the last year when asked about major life events.
Sources: e61; HILDA

Second, we believe there are other reasons that any under reporting of occupational switching in the tax data is likely to be much less extreme when looking at more permanent changes in occupation (as we try to do), than all changes from year to year. As Hathorne and Breunig (2022) note, the tax data provides a good cross-sectional estimate of the number of workers in each occupation major group, and we show above that it provides a good estimate for the number of school teachers. If a large number of individuals were systematically under reporting large and permanent changes in their occupation (e.g. not reporting that they had moved from their hospitality job in high school/university to their job as a professional), we would expect to see many more workers employed in entry level occupations (e.g. hospitality) and fewer workers employed in more senior professional and managerial positions. The fact we do not see this suggests that most large, permanent changes in occupation are captured by the tax data.

22 Note that we cannot use HILDA to calculate comparable teacher attrition rates as the occupation data is not granular enough, and even if it were the sample size would likely be too small.

Finally, it is worth noting that our estimate for teacher attrition of 5-6% a year is if anything higher than many of the better-quality estimates in the existing literature (see Appendix B.1.2). This further suggests that our estimates of teacher attrition are not significantly affected by under reporting as this should push our results towards zero.

C.2.2.2 Could under reporting of occupational switching lead to a biased comparison of attrition rates between occupations?

Another risk is that the under-reporting issue affects different occupations differently (e.g. former teachers are more likely to update their occupation when they change occupations than former plumbers). This would limit our ability to compare attrition rates for teachers with other occupations as we do in (Figure 2).

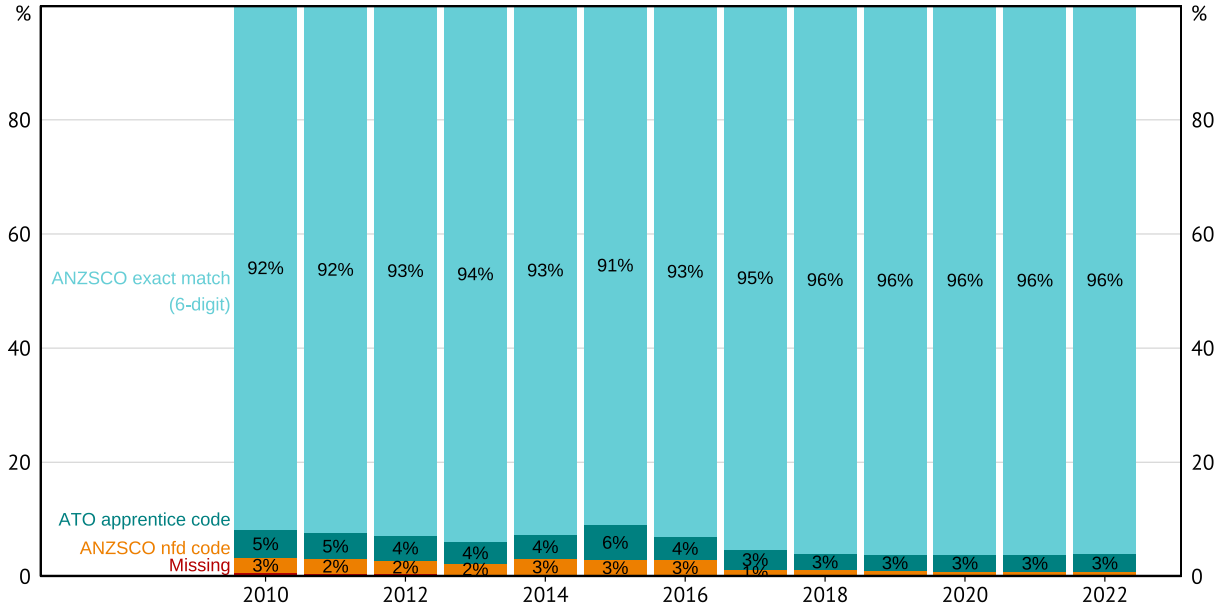
While we cannot rule out the possibility that any under reporting affects different occupations differently, we do not think it should bias our comparisons. This is because it looks like most of the switches we miss are temporary role changes within firms. For the reasons discussed above, we believe this should have a relatively limited affect on teacher attrition rates compared to turnover in other occupations because individuals leaving teaching are mostly making larger, more permanent changes in their occupation. This should make it *less* likely that we would find that teacher attrition rates are lower than attrition rates in other occupations.

C.2.3 Further data quality checks

In this section we perform several additional checks of the quality of the occupation data derived from personal income tax (PIT) records. The first check we perform is a test of the coverage of the PIT occupation data for individuals earning wage or salary income. This is the group of individuals who are required by the ATO to report the main occupation in which they earned wage or salary income during that financial year. Figure C.4 shows that between 2010 and 2022, over 99% of individuals who report earning wage or salary income in the PIT data report a valid occupation code. Most report a detailed (6-digit) ANZSCO occupation or a detailed ATO apprentice, trainee or consultant occupation code.[23] A small number report a 6-digit code that matches ANZSCO not further defined codes.[24] Less than 1% of individuals do not report an valid occupation code.

Figure C.4: Coverage of ATO occupation data

All individuals reporting wage or salary income



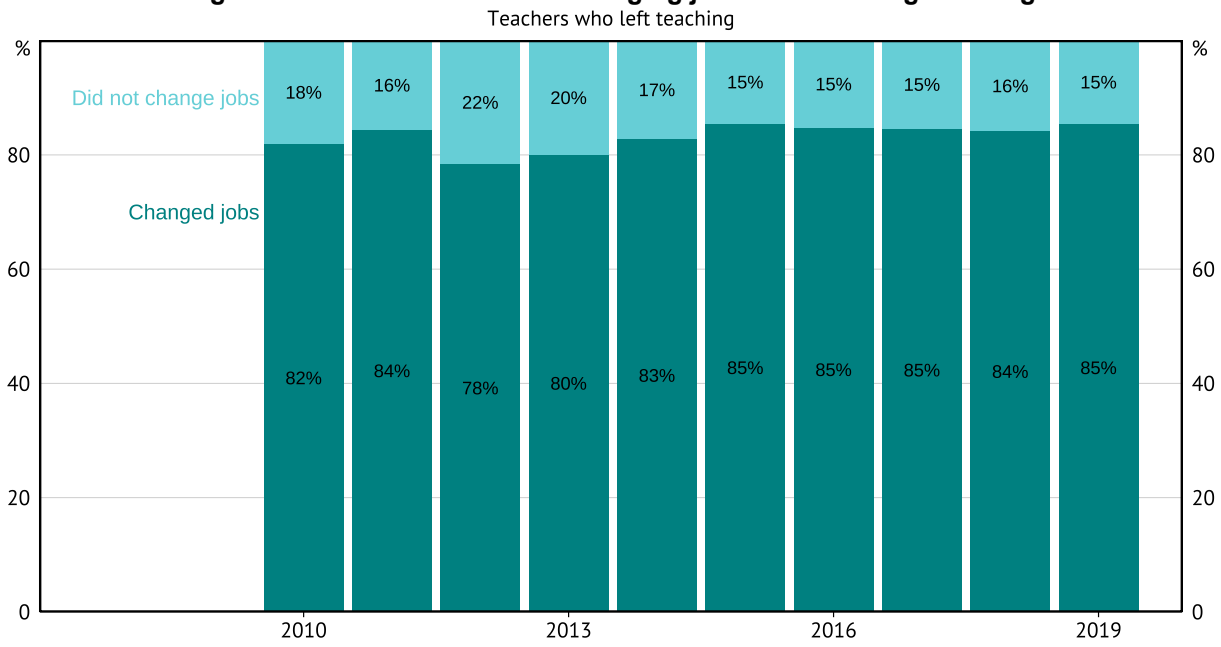
* The figure plots the occupation codes reported by individuals reporting non-zero wage and salary income on their personal income tax returns since 2010. ANZSCO matches (6-digit) represent codes that perfectly match 6-digit ANZSCO codes. ATO apprentice codes are special codes that the ATO uses to separately identify apprentices and trainees for compliance purposes. ANZSCO nfd codes are six digits codes that only partially match ANZSCO codes. These include codes such as 100000, which correspondes to Managers, nfd. and is likely the result of individuals not providing detailed enough information to identify their 6-digit occupation. Missing codes are individuals who did not enter a six-digit occupation code.
Sources: ABS; e61

23 The ATO uses special occupations codes for apprentices and trainees for compliance purposes. These do not directly match the ANZSCO occupation coding system used by the ABS.
24 For instance, a code of 100000 would correspond to Managers, nfd. and is likely the result of individuals not providing detailed enough information to identify their 6-digit occupation code.

The second check we perform is a test of the share of teachers who separate from their job in the year that we record them leaving teaching. We identify job separations using data from the L-LEED. We classify an individual as separating from their job if they do not continue working for at least one of their current employers in the next financial year.

Figure C.5 shows that between 2010 and 2019, almost all teachers who we flag as leaving teaching separated from a job during the same year. Due to the way the tax data is structured, many teachers who leave teaching but do not change employer (e.g. the NSW state government) will not be identified as having separated from a job. This will include teachers who leave teaching but continue working as an education aide with the same employer, or a public school teacher who leaves teaching but takes on another job with the state government say as an education adviser or reviewer.

Figure C.5: Share of teachers changing jobs when leaving teaching



* The figure plots the share of teachers who leave their job when leaving teaching. Teachers who stop teaching but remained employed with same employer will not be capture here. For instance, we may not capture those who stay on as education aides or take on another job as an education advisor or reviewer with the education department.
Sources: ABS; e61

The third check we perform is a comparison of the occupation individuals report on their tax return with the occupation they report in the Census. Figure C.6 compares the occupations individuals reported on the 2016 Census (collected in August 2016) with the occupations they reported on their personal income tax return for the 2016/2017 financial year (collected from Jul-Oct 2017 for the year from Jul 2016 to June 2017). We focus on individuals who reported their main occupation as being a school teacher (excluding early childhood teachers) in the 2016-2017 financial year.

We find that in 85-90% of cases either the occupation that teachers report on their tax records is a close match for the occupation they report in the Census, or it is not a match because the individual was either not employed at the time of the Census or was not captured by the Census for one reason or another.

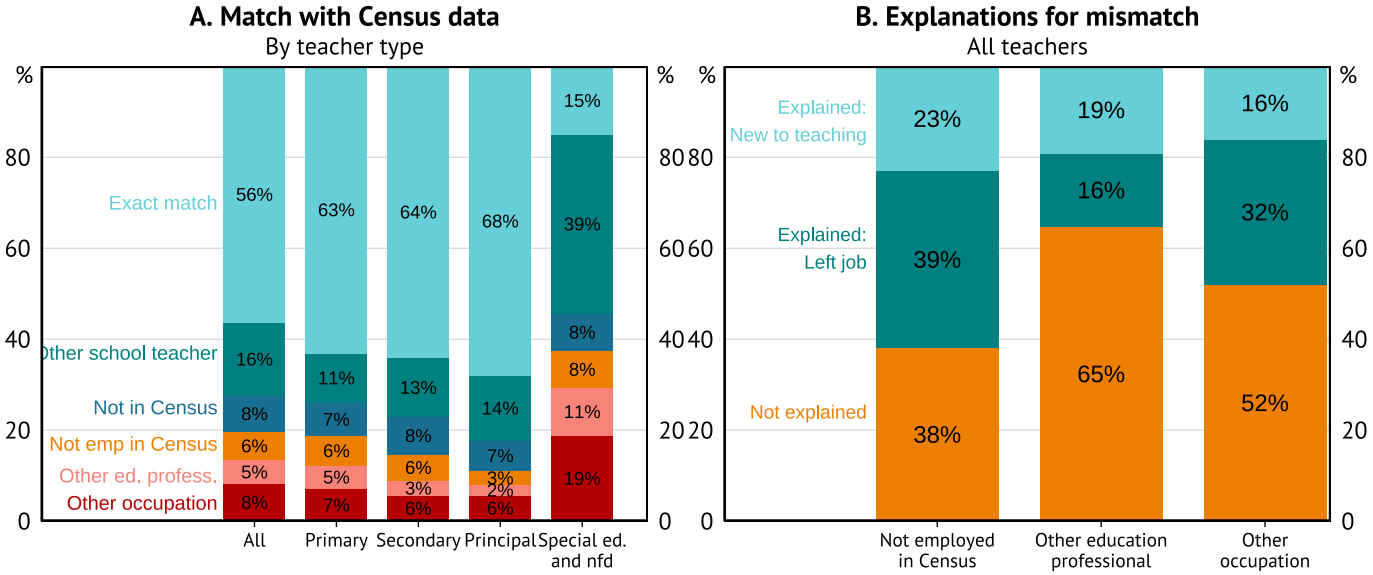
- In about two thirds of cases the occupations codes are an exact match. The exception to this are special education teachers, who appear to more commonly classify themselves as either a primary school or secondary school teacher on the Census.
- In another 10-15% of cases, individuals report working as a different type of school teacher (e.g. primary rather than secondary).
- In a further 10-15% of cases the individual is not captured by the Census occupation data, either because they were not employed in the week of the Census, or because they did not appear in the de-identified Census data. This could occur either because they were not in the country at the time of the Census, or because their Census records could not be linked to their tax records by the ABS.

In the remaining 10-15% of cases the occupation that teachers report on their tax returns do not match the occupations that they report on the Census. Examining potential explanations for the mismatch, we find that a large share of teachers who report inconsistent records either started teaching during the financial year, so may not have yet been employed as teacher

at the time of the Census, or they left their job in that year, so may have had a period out of employment around the time of the Census (Figure C.6).

Figure C.6: Comparison between the tax and Census data

Teachers who reported being employed in the 2016/2017 financial year



* The figure examines the occupations reported by individuals on their Census 2016 responses (collected in August 2016) with the occupations reported by individuals on their personal income tax return for the 2016/2017 financial year (collected from Jul-Oct 2017). We focus on individuals who reported their main occupation as being a school teacher in the 2016-2017 financial year. We then examine potential explanations for the mismatch between the records. These include whether the individual either started teaching that year, so may not have yet been employed as teacher at the time of the Census, and whether the individual left their job in that year, so may have had a period out of employment around the time of the Census. Note the 'Not in Census' group will include both individuals who filed a tax return but were not captured by the Census, and individuals whose Census and tax records could not be matched by the ABS.
Sources: ABS; e61

C.2.4 Measuring Teaching Course Enrolments and Completions

The administrative data we use to measure commencements and completions comes with some important limitations. These include

- We are only able to view students who are enrolled in a Commonwealth Supported Place (CSP) or apply for a Higher Education Load Program (HELP) loan. Given the eligibility requirements for these programs, this means our analysis will capture almost all undergraduate domestic students, but will miss some postgraduate students and almost all international students.

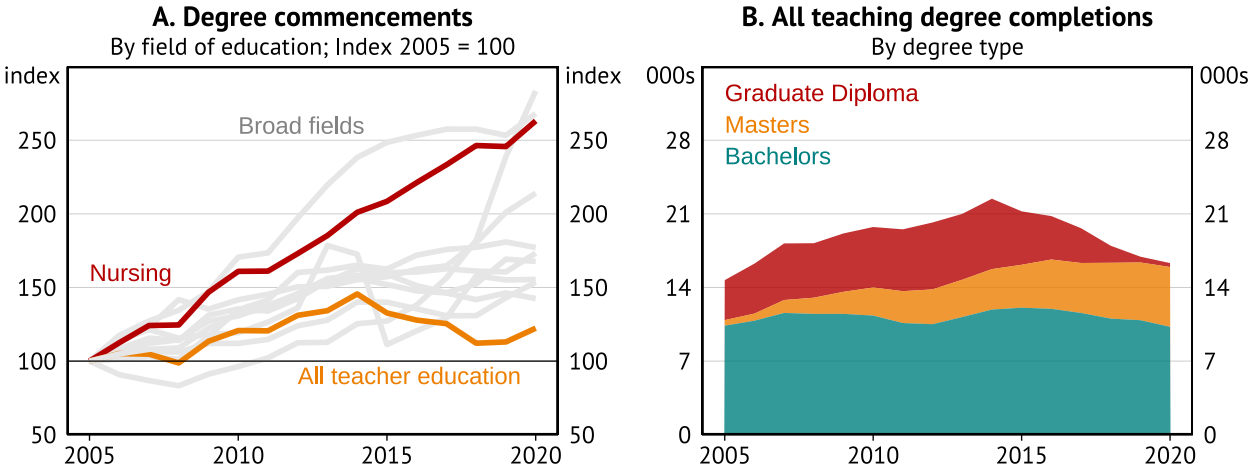
- The administrative data also has some entangled records and missing links to the PLIDA spine that mean we will underestimate the number of students studying these courses. However, we have no reason to believe these missing records should affect teaching compared to other fields of education in a way that could bias our results.

- We are not able to precisely identify initial teacher education courses. We instead rely on field and level of education information provided by universities for the courses they provide. To try best capture initial teacher education courses we focus to students enrolled in or completing a Bachelors, Masters (non-research) or Graduate Diploma course. We then define school teaching courses as students studying either primary teacher education (ASCED 070103) or secondary teacher education (ASCED 070105) courses. When we expand this definition to include all individuals studying a teaching degree (ASCED 0701) we find similar trends. The growth of new teaching course commencements between 2005 and 2020 is higher (22.4% vs 12.4%), but teaching still lags behind other broad fields of education (Figure C.7).

These limitations mean that some caution should be taken when interpreting the exact level of commencements and completions. However, we do not believe that they should impact the main takeaway from our analysis: that teaching is falling behind when it comes to the number of students studying to become school teachers. In this regard, our findings are consistent with research conducted by the Australian Institute for Teaching and School Leadership (2024), which found that commencements in all initial teacher education courses (including early childhood) grew by only 19.1% between 2005 and 2020.

Figure C.7: Number of new undergraduate students

CSP and HELP eligible students



* The Higher Education Information Management System (HEIMS) data we use includes students who are enroled in a Commonwealth Supported Place (CSP) or apply for Higher Education Loan Program (HELP) loan. We define teaching students as those enrolled in teacher education (0701) courses. We further narrow the focus of our analysis to students enroled in or completing a Bachelors, Masters (non-research), or Graduate Diploma course. For degree commencements, we use the date the student first enrolled in a unit (consumed student load) in that course. There are several important limitations of this data which we discuss in Appendix C.2.4.
Sources: ABS; Department of Education; e61

Disclaimers

Business Longitudinal Analysis Data Environment (BLADE)

This paper uses unit record data held in the BLADE data environment which is hosted by the Australian Bureau of Statistics. The results are based, in part, on Australian Business Register (ABR) data supplied by the Registrar to the Australian Bureau of Statistics (ABS) under A New Tax System (Australian Business Number) Act 1999 and tax data supplied by the Australian Taxation Office (ATO) to the ABS under the Taxation Administration Act 1953. These require that such data are only used for the purpose of carrying out functions of the ABS. No individual information collected under the Census and Statistics Act 1905 is provided back to the Registrar or ATO for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes, and is not related to the ability of the data to support the ABR or ATO's core operational requirements. Legislative requirements to ensure privacy and secrecy of this data have been followed. Only people authorised under the Australian Bureau of Statistics Act 1975 have been allowed to view data about any particular firm in conducting these analyses. In accordance with the Census and Statistics Act 1905, results have been confidentialised to ensure that they are not likely to enable identification of a particular person or organisation.

Person Level Integrated Data Asset (PLIDA)

The results of these studies are based, in part, on data supplied to the ABS under the Taxation Administration Act 1953, A New Tax System (Australian Business Number) Act 1999, Australian Border Force Act 2015, Social Security (Administration) Act 1999, A New Tax System (Family Assistance) (Administration) Act 1999, Paid Parental Leave Act 2010 and/or the Student Assistance Act 1973. Such data may only used for the purpose of administering the Census and Statistics Act 1905 or performance of functions of the ABS as set out in section 6 of the Australian Bureau of Statistics Act 1975. No individual information collected under the Census and Statistics Act 1905 is provided back to custodians for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the Australian Taxation Office, Australian Business Register, Department of Social Services and/or Department of Home Affairs' core operational requirements.

Legislative requirements to ensure privacy and secrecy of these data have been followed. For access to PLIDA and/or BLADE data under Section 16A of the ABS Act 1975 or enabled by section 15 of the Census and Statistics (Information Release and Access) Determination 2018, source data are de-identified and so data about specific individuals has not been viewed in conducting this analysis. In accordance with the Census and Statistics Act 1905, results have been treated where necessary to ensure that they are not likely to enable identification of a particular person or organisation.