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Initial teacher education information scoping study

A report prepared for the

Australian Institute for Teaching and School Leadership

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Contents

ABBREVIATIONS AND GLOSSARY

ACER	Australian Council for Educational Research
AITSL	Australian Institute for Teaching and School Leadership
AMC	Australian Medical Council
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ASCED	Australian Standard Classification of Education
ATAR	Australian Tertiary Admissions Rank, formerly Tertiary Entrance Rank (TER)
BGS	Beyond Graduation Survey, administered by Graduate Careers Australia (GCA)
CEQ	Course Experience Questionnaire, part of the Graduate Destinations Survey (GDS) administered by Graduate Careers Australia (GCA)
DEEWR	Australian Government Department of Education, Employment and Workplace Relations, responsible for school education matters
DIISRTE	Australian Government Department of Industry Innovation Science Research and Tertiary Education, responsible for higher education matters
GCA	Graduate Careers Australia (formerly the Graduate Careers Council, GCC)
GDS	Graduate Destinations Survey (GDS) administered by Graduate Careers Australia (GCA)
LTEWS	Longitudinal Teacher Education Workforce Study, a study being undertaken by Deakin University for the Australian Government Department of Education, Employment and Workplace Relations (DEEWR)
nec	Not elsewhere classified. This includes particular categories such as 'Teacher Education – Vocational Education and Training' and 'Teacher Education – Higher Education' that are combined together in a table where a number of other particular categories such as 'Teacher Education – Primary' are individually specified. In some tables nec includes nfd.
nfd	Not further defined. This is where data is coded under a general category, such as 'Teacher Education' in a table where other data is coded to a more specific category such as 'Teacher Education – Primary'.
NSS	National Statistics Service
NTWD	National Teaching Workforce Dataset, an on-going project to collect and manage data relating to the teaching workforce, funded by the Australian Government through the Teacher Quality National Partnership.
SES	Socio-economic status
SiAS	Staff in Australian Schools, an Australia-wide survey carried out by ACER that collects information from school teachers and leaders about their background and qualifications, their work, their career intentions, and school staffing issues.
TACs	Tertiary Admissions Centres

1. INTRODUCTION AND BACKGROUND

1.1. Objectives of this report

This report provides a scoping of options for initial teacher education information collection and presentation. It is intended to inform a proposal that will be prepared by the Australian Institute for Teaching and School Leadership (AITSL) for Ministers on the reporting of initial teacher education information. Ministers have requested that information standards be included in Program Standards for Accreditation of Initial Teacher Education (see Box 1), and that AITSL provide advice on a mechanism to make public information on initial teacher education, including, as a minimum, entry standards, student and employer satisfaction, and employment rates in the teaching profession following graduation. The study is also to contribute to a broader data project on the collection and reporting of specific initial teacher education data that AITSL will undertake in 2013. (The full 'Objective and Services to be Delivered' is set out in Appendix 1.)

Box 1. AITSL *Accreditation of Initial Teacher Education Programs in Australia Standards and Procedures April 2011*, Standard 7: *Program information and evaluation*

7.1 Providers use a range of data, such as student assessment information, destination surveys, employer and other stakeholder feedback to drive program improvement and periodic formal evaluation.

7.2 Providers report annually to the Authority outlining challenges encountered or any changes in programs.

7.3 Providers supply data as required to support local and national teacher workforce supply reporting, to support program and provider benchmarking, and to build a cumulative database of evidence relating to the quality of teacher education in Australia. Data collected is held in a centrally managed database and, under agreed protocols, will be available to all jurisdictions and teacher education providers for research, evaluation and program improvement.

Source: Australian Institute for Teaching and School Leadership (2011)

1.2. Principles and issues for information collection and public presentation

The principles and issues for the collection and public presentation of information and other data concerned with initial teacher education include the need for clear purposes, cost-effectiveness in meeting those purposes, data quality (including the appropriateness of data classifications), and associated issues of interpretation and possible misinterpretation. These principles and issues will be outlined in turn in this section, and will be referred to when the particular areas of data and information are covered in subsequent sections.

The National Statistics Service (NSS), a group of government agencies concerned with statistics collection and presentation and led by the Australian Bureau of Statistics, has

developed a set of Key Principles (National Statistics Service, 2009), which inform the positions taken in this report (the principles are listed in Appendix 2 *Data standards and classifications for initial teacher education*).

The purposes for the public presentation of data and other information concerned with initial teacher education include those set out in the AITSL *Accreditation of Initial Teacher Education Programs in Australia Standards and Procedures April 2011* (Box 1): 'informing program improvement and periodic formal evaluation', and 'to support local and national teacher workforce supply reporting, to support program and provider benchmarking, and to build a cumulative database of evidence relating to the quality of teacher education in Australia ... available to all jurisdictions and teacher education providers for research, evaluation and program improvement'. There may be other purposes related to informing policies concerned with teacher education and teaching, and the provision of information to the public, especially informing current public debates and correcting common misunderstandings about the nature of teacher education and its students and graduates.

The cost-effectiveness in meeting purposes takes account of actual or potential financial costs, burdens on data custodians, risks to privacy, and risks of damaging mis-interpretation of information.

Data quality includes matters of relevance, validity, reliability and appropriate representativeness of data. While standard classifications are generally preferable to custom classifications, where the standard classification is inadequate the optimal choice may be to augment a standard classification (with sub-categories, for example) or develop an alternative custom classification. This matter is further discussed in Appendix 2.

1.3. The structure of this report

The sections of this report cover the three areas of information specified by the Ministers - *entry standards* (section 2), *student and employer satisfaction* (section 3) and *employment rates in the profession after graduation* (section 4). These are followed by a section on other information relevant to initial teacher education, in particular data on subject and other specialisations of final year students, enrolment data (commencements, enrolments and completions by some demographic features of students and types of courses), training rates (completions as a percentage of the total workforce), and ABS Census data on individuals with school teaching qualifications aged under 35.

The concluding section brings together in summary form six broad areas for suggested action by AITSL and others:

- The public presentation of straight forward data of public interest and policy relevance.
- The development of material to explain issues around entry standards
- Support for Graduate Careers Australia in differentiating accurately between initial and post-initial graduates

- Support for the development of a standard classification for teaching specialisations by the National Teacher Workforce Dataset project (or other appropriate process)
- Support for the on-going work of Staff in Australia's Schools, and the dissemination and use of its findings
- Support for the Longitudinal Teacher Education Workforce Study and the dissemination and application of its findings to inform policy and practice.

The report has five appendixes: the objectives of this project and services to be delivered; data standards and classifications for initial teacher education; the methodologies used by Graduate Careers Australia; data on the pre-registration education of selected health professions; and an appendix of fifteen statistical tables. The tables cover the major areas in the report and provide an illustration of the sort of data that could be considered for publication by AITSL or others. The tables in the appendix are referenced through the report as 'Table A' followed by the table number.

2. ENTRY STANDARDS

2.1. Introduction

Students enter initial teacher education programs via diverse routes and according to diverse criteria. Only a minority enter with a clear and nationally consistent and documented entry standard, and that minority is domestic undergraduate students who are offered places based on their year 12 Australian Tertiary Admissions Rank (ATAR) through Tertiary Admissions Centres (TACs). TACs may administer admission of other domestic students to undergraduate programs, and domestic students to some course-work postgraduate programs (including initial teacher education), but those admission processes do not generate any simple and consistent data on entry standards.

Particular courses and institutions maintain their own records of the characteristics of commencing students and the criteria by which they entered, such as the Special Tertiary Admissions Test (STAT) results for non-school leavers, General Aptitude Test (GAT) results for students with low or lower than expected ATARs, or the undergraduate grade point averages (GPAs) of post-graduate initial teacher education students entering after having recently completed an undergraduate degree, and various qualitative and quantitative elements of special entry schemes. This information is valuable for responding to the individual needs of students, the evaluation and development of recruitment and selection schemes, student support programs, and other institution-level policy matters. However, such records do not generate any significant nationally comparable data on entry standards.

This section therefore focuses only on entry standards as measured by ATAR scores because there is no other nationally comparable data on entry standards. ATAR scores have applicability to individual students and to courses.

2.2. Sources of data on ATAR scores

There are two national datasets that include data on ATAR scores:

First, there is the 'Universities Applications and Offers Data Collection', the annual collection of domestic undergraduate applications, offers and acceptances, which Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) collects from the state-based TACs. This data includes the ATAR scores of those applicants who seek entry according to their year 12 ATAR score, as well as a great deal of additional data on the background and other attributes of applicants, the type of application they make, and the nature of the courses and institutions for which they are applying. The data elements of the collection are publicly available on the DIISRTE website (2012f).

The second dataset that includes data on ATAR scores is the 'Higher Education Student Data Collection', with data collected by DIISRTE from higher education providers. The data elements for this collection are also accessible on the DIISRTE website (2012d). This dataset

includes individual students' ATAR scores (when applicable). There are also data items involving ATAR scores that are relevant to courses: data item 552, 'Eligibility score', which is 'the score determined by the institution as the lowest score at which any student will be eligible for consideration for the course (excluding special entry)', and data items, 497, 'Entry Cut-Off for a Commonwealth supported place', and 498, 'Entry Cut-off for a domestic fee-paying place', which are codes indicating the previous years' lowest entry cut-off required for entry to a CSP or domestic fee paying place (respectively) for the particular course offered on a particular campus.

2.3. The use and interpretation of ATAR scores

The data on ATAR scores from these DIISRTE collections is of generally high quality, but it is open to misunderstanding and misinterpretation, and there are limitations to its policy value. These limitations and the issues involved are considered in this section.

2.3.1. Representativeness of ATAR-based entry

Only a minority of initial teacher education students have an ATAR-based entry. Only 44% of domestic applicants who received offers for undergraduate initial teacher education programs in 2012 made an application based on their ATAR scores (the figure for all FOEs is 54%) (Table A.2). In addition to domestic undergraduate applicants, there are international undergraduate applicants (most of whom are likely to be available for teaching positions in Australia when they graduate), and domestic and international postgraduate initial teacher education applicants. In 2011 domestic undergraduate commencements were only 67% of all commencements (Table A.10)[1]. Thus those entering on the basis of their ATAR scores are less than a third of all initial teacher education commencements.

2.3.2. Effect of size of intakes on cut-offs and spread in ATAR bands

It is a matter of simple arithmetic that a course with a large number of commencing students will have a lower cut-off and a smaller proportion of students in the top ATAR bands than a course with fewer commencements but otherwise identical in attractiveness to potential students (Box 2 provides a simple hypothetical illustration of this).

Compared with most other specific fields of education, teacher education has a very large number of commencing undergraduate students, and thus commencing students are spread across the ATAR bands. In 2012 there were more ATAR-based applicants with scores above 80.00 receiving offers in teacher education (1,785) than in medicine (1,478). It is not

[1] Data on domestic applications, offers and acceptances for undergraduate courses and data on commencements are from different data collections, and are thus not fully comparable.

surprising, however, that a much higher percentage of offers in medicine compared with offers in education are in the ATAR bands above 80.00 – 86% and 22% respectively. [2]

Box 2. Hypothetical impact on entry standards of course size

An institution offers two courses, one with 500 commencing places (M), the other with 1500 commencing places (N). Both courses are equally attractive, and each receive 1000 first preferences from applicants with an identical spread of ATAR scores, and each applicant gives a second preference to the other course. Places in the courses are filled according to ATAR scores.

Course M is able to offer half its first preference applicants a place, and the cut-off is at the 50 percentile (median) point. Thus all students receiving offers have ATAR scores in the top half of ATAR scores.

Course N offers all its 1000 first preference applicants a place, and, to fill its 1500 places, it makes offers to the 500 applicants who did not receive offers from course M (who all have ATAR scores in the bottom half of ATAR scores because all places in that course had been filled by applicants with higher scores). Thus one third of students receiving offers in course N have ATAR scores in the top half, and two thirds of students receiving offers have scores in the bottom half.

Aside from the size of intakes, entry standards for vocational courses such as initial teacher education and pre-registration medical education tend to be a reflection of the status and attractiveness of the profession, especially in the eyes of higher achieving senior secondary students. Attractiveness would include matters such as the perceived likelihood of securing a position, especially an on-going position with adequate support.

2.3.3. Reporting course cut-offs and eligibility scores

The Australian Government's *MyUniversity* website publishes entry cut-off scores for the current and previous year, and eligibility scores for the current and next year for individual undergraduate courses at particular campuses (Australian Government, 2012). The eligibility score is usually a little below or the same as the cut-off for the previous year, except for high demand/low number courses where the cut-off is very high, but the eligibility score substantially lower. Roughly a third of initial teacher education undergraduate courses do not publish a cut-off, though some of these publish an eligibility score for the next year.

The current year's cut-off scores are provided in the tables of course details, in a column headed, 'ATAR', and with the annotation, 'Previous year's course cut-offs are provided as a guide to course entrance. Cut-off scores will vary according to demand for places.' The full details for cut-off and eligibility scores are in linked pages for each course. (There is no similar information published for postgraduate course-work programs in initial teacher education or other fields.)

[2] The source of data in this paragraph on teacher education is from Tables A. 1 and A.2, and on medicine is from DIISRTE custom data.

The course-level data referring to ATAR scores has some value in providing prospective students with a guide to entry requirements and the level of demand in relation to intake size of the course. However, it is inappropriate to use course cut-offs or eligibility scores as an indicator of the nature of the student cohort as a whole or the quality and effectiveness of the course. A low cut-off may be the score of just one student, with the rest of the commencing students entering with high ATARs (and the student or students with the cut-off score may leave the course at some stage well before graduation). A low eligibility score may reflect a provider's desire to make the course widely accessible, though actual commencing students may all have high ATARs. Other issues involved are further discussed below.

In addition, it will not be clear whether a cut-off score, which would be a score of one or a small number of individuals, includes a 'bonus' for disadvantage (such as having attended a rural low-socio-economic school) and therefore the students' original year 12 results were lower than the ATAR cut-off score collected by DIISRTE from the university.

2.3.4. The value and implications of ATAR scores as entry criteria

Palmer, Bexley and James, in their report for the Group of Eight, *Selection and Participation in Higher Education: University selection in support of student success and diversity of participation* (2011), provide a detailed analysis and review of research into university selection criteria and methods in the context of the Australian Government's policy support for equity, participation and diversity in higher education. They report that ATAR scores have been found to be good overall predictors of university academic success. However, there are caveats to this general finding.

First, while ATAR scores are good predictors of success at university at the higher ATAR bands, the middle and lower bands are a less reliable predictors of university success 'as many students with average or comparatively low senior secondary results also do well once at university' (Palmer, et al., 2011, pp. 11-12). Palmer et al summarised the findings, commenting that 'there appears to be an asymmetric relationship between school and university success: those who do very well at school tend to do well at university, but not all those who do very well at university were among top ranked high school graduates' (p. 12). The large majority of initial teacher education commencing students (around 77%) is in the middle and lower ATAR bands below 80.00 (Table A.2)

Second, the predictive capacity of ATAR scores is strong for first year, but 'diminishes rapidly as students progress through tertiary study' (Palmer, et al., 2011, p. 12).

Fourth, the correlation between ATAR scores and fields of education varies considerably. Dobson and Skuja found that ATAR scores were 'a very good predictor for performance in [first year] engineering, agriculture and science' but the relationship was 'virtually non-existent in education'. They suggested that 'one possible interpretation of this pattern is that the value of [ATARs)]as a selection tool diminishes as the discipline area moves away from the subjects taught to students at secondary school' (2005, p. 55).

Fifth, ATAR scores discriminate against lower socio-economic status (SES) students. Not only are ATAR scores correlated with SES, type of school attended, and (negatively) with rurality (Dobson & Skuja, 2005; Palmer, et al., 2011), but as Palmer et al conclude from their review of the research: 'for the same entrance rank low socio-economic status students perform as well or better at university than their high socio-economic status peers' (2011, p. 14). It has been a common finding for decades that students attending schools with lower SES profiles tend to do better in their university studies than students from schools with higher SES profiles who have the same ATAR scores (Dobson & Skuja, 2005; Dunn, 1982; Palmer, et al., 2011; West, 1985). Teacher education students generally have lower SES backgrounds and are more likely to come from non-metropolitan regions than the rest of commencing students: 26% of teacher education acceptances compared with only 19% of all acceptances are from low SES students, and just 17% of teacher education acceptances compared with 32% of all acceptances are from high SES students; and 32% of teacher education acceptances and 21% of all acceptances are from non-metropolitan students (Table A. 3). Indigenous students are a higher proportion of students in teacher education than in all FOEs: in 2011 1.3% of teacher education completions were by Indigenous students (Table A.13), while just 0.9% of completions in all FOEs were by Indigenous students (Australian Government Department of Industry Innovation Science Research and Tertiary Education, 2012a, Tables 2 & 13).

2.3.5. Course selection as selection for entry into professions

The concerns of Palmer et al are primarily with selection procedures in as far as they predict student success at university and promote diversity in the student population (in accord with Australian Government policy). However, the selection of students into vocational courses such as initial teacher education is also selection into the profession. Thus selection methods need to be relevant to selection into the profession as well as into a higher education course. Of course final selection into the profession occurs through processes of assessment during the course (especially final assessments before graduation), and through registration and recruitment by employing authorities. But those processes can only select from individuals who have already gained access to the course.

There has been careful attention to the attributes of potential medical students that may lead to a greater propensity to work in a rural location and as a general practitioner. Active recruitment and selection criteria have targeted such potential students, as well as Indigenous students and others (Medical Schools Outcomes Database and Longitudinal Tracking Project, 2011). While places in medical schools could easily be filled according to ATAR scores (or equivalent academic criteria), those involved in Australian medical education recognise the importance of diversity in the medical workforce and particular needs such as ensuring an adequate supply of rural general practitioners. They also recognise that the narrow academic focus that is common among those with the highest ATAR scores may not be the characteristic required for an effective and well-rounded medical practitioner (Palmer, et al., 2011, p. 3). The Australian Medical Council, which

accredits pre-registration medical programs, reflects these positions in its accreditation standard concerned with selection: 'The AMC recognises that there is no agreed method of selecting the most appropriate medical students, and supports diverse approaches by medical schools that include both academic and vocational considerations' (Australian Medical Council, 2010, p. 29).

These broad issues are gaining prominence in the context of Australian Government policy to improve equity and diversity in higher education, and the greater integration of workforce planning for occupations such as medicine with recruitment and selection into relevant professional education programs. These issues have also been a matter of concern in the international literature and policy arenas for some decades, including in relation to teacher education. In 1990 Demetrulias, Chiodo and Diekman had findings consistent with those noted above: that there was little difference in the graduate outcomes between initial teacher education students who met entry standards based on standardised literacy and numeracy tests and those who did not meet such criteria, but were accepted on other grounds. In recognition of the discriminatory nature of standard academic criteria, they argue:

> The legislative mandates of more rigorous standards for entry into teacher education programs affect ethnic, cultural, and racial groups who represent a talent pool that should not be ignored. Standardized tests may not be reliable predictors of ability to teach and are causing educational, social, and cultural problems by ... eliminating minority teachers. (1990, p. 72)

Whatever selection and recruitment methods are used for course entry, the quality and competence of those who graduate and seek to enter the teaching profession can be assured by rigorous and appropriate graduation standards following an effective course, with appropriate support for those who may enter without normal academic preparation or who have other needs. This requirement for support is recognised in the AITSL accreditation of initial teacher education program standard 3.2:

> Providers who select students who do not [successfully demonstrate their capacity to engage effectively with a rigorous higher education program and to carry out the intellectual demands of teaching itself] must establish satisfactory additional arrangements to ensure that all students are supported to achieve the required standard before graduation. (2011, p. 13)

2.4. Access to information

2.4.1. Availability of data from the Universities Applications and Offers Data Collection

Data from 2008 to 2012 from the Universities Applications and Offers Data Collection is published embedded in analytic reports available on the DIISTE website (2012e). Generally data by FOE in these reports is classified to the 2-digit level. This provides reasonable

information about teacher education (almost all undergraduate courses in the 'Education' FOE are initial teacher education programs), but comparisons are difficult because, for example, medicine and nursing are combined with other courses under 'Health'. However, there are usually sections of analysis devoted to significant FOEs such as teacher, nurse and medical education.

DIISRTE receives applications and offers data from TACs between October and May each year. The annual final applications and offers report is usually published in November each year. In April 2012 a shorter report, based on February 2012 figures, was published to inform the progress of the new demand driven system (2012b). The published data concerned with ATAR scores by FOE usually does not indicate how representative the data is of all offers (or commencing students) in the particular FOEs by reporting with ATAR band data the total number of domestic applications or offers (see for example, Australian Government Department of Industry Innovation Science Research and Tertiary Education, 2012b, Table 12, 'Share of Year 12 offers by ATAR band for each field of education, February 2012', p. 14). The custom data on which Tables A.1 and A. 2 are based included the total number of domestic applications and offers, in addition to those that were ATAR-based.

Aggregate data from the Universities Applications and Offers Data Collection is also available on a custom basis. This data can be provided by DIISRTE on request, the cost and time-frame for provision depending on the nature of the request and availability of staff. Tables A.1 and A.2 are based on such custom data. The data requested should be specified in terms of the data elements detailed on the DIISRTE website (2012f). Note that applications and offers data is usually only provided at the national and state level, not at the institutional level, because figures at that level are often quite small and volatile, depending on the breakdown. Also, the applications and offers dataset does not have information on individual courses, but only by FOE.

2.4.2. Availability of data from the Higher Education Student Data Collection

Data on ATAR scores from the Higher Education Student Data Collection is only published by the DIISRTE on the MyUniversity website (as noted in sub-section 2.3.2 above). However, aggregate custom data can be provided by DIISRTE on request, the cost and time-frame for provision depending on the nature of the request and availability of staff. The data requested should be specified in terms of the data elements detailed on the DIISRTE website (2012d). This data covers actual commencements (and enrolments and completions), not applications and offers.

2.5. Options for publication by AITSL or others

The evidence and analysis in this section shows the problematic nature of the only data on entry standards that is available in a nationally consistent standard form. Publicly presented without interpretative text and other information, the data has some value in informing prospective students (see sub-section 2.3.2 above), but is misleading as an indicator of

course quality, limited or misleading as an indicator of student quality (especially in the FOE of education), and inappropriate as an indicator of graduate quality.

However, there are areas where information on entry standards could be better utilised for public information and accountability.

Information on entry standards is an important matter to inform the improvement of courses and student support programs in institutions that provide initial teacher education. This is recognised in AITSL's Program Standards Mapping Matrix in *Accreditation of Initial Teacher Education Programs in Australia: Guide to the accreditation process* (Australian Institute for Teaching and School Leadership, 2012b, pp. C1-C11) for the standards on *program entrants* (especially 3.2, quoted in sub-section 2.3.5 above). In the matrix, examples of evidence include: the provider's policy outlining selection criteria and entry procedures; admissions data; mechanisms for identifying students requiring support; compensatory units and other support for students identified as needing it; assessment procedures and graduation requirements; and graduate outcomes demonstrating that standards have been met (2012b, p. C 4). Public information about the provision of such evidence and assurances of appropriate graduate standards may help allay public fears about any apparent inadequacies in the entry standards of commencing initial teacher education students.

There is a great deal of public misunderstanding about the nature of ATAR scores (and other entry standards), and what they indicate about students, individual courses, institutions and fields of education. This is particularly so regarding cut-off scores which are publicly available on the MyUniversity website and frequently publicised in the media. AITSL could prepare a paper that includes relevant data in the context of explanation and analysis in reference to initial teacher education. The paper could draw on material in this section and tables in Appendix 5, and be published on the AITSL website. Relevant journalists and others could be alerted to it at times of the year when cut-offs and ATAR scores receive publicity. This paper could be integrated with the information provision suggested above.

In addition, AITSL could investigate whether it would be appropriate to provide on the MyUniversity website additional material where cut-offs are specified, such as the percentage of domestic students who were admitted according to criteria other than ATAR scores (the information placed under the 'ATAR cut-off scores' tab on the individual course details page), and, if so, to advocate for the inclusion of such information.

2.5.1. Summary recommendation

That AITSL consider the public provision of information about the nature, context and implications of entry standards for initial teacher education, and the activities of initial teacher education providers to ensure the adequacy of the standards of graduates whatever their entry standards. This would be prepared in consultation with initial teacher education providers. In addition, that AITSL investigate, and, if appropriate, advocate for, additions to the information regarding ATARs on the MyUniversity website.

3. STUDENT AND EMPLOYER SATISFACTION

3.1. Introduction

There are two significant current sources of information about the satisfaction of graduates of initial teacher education programs with their courses. The first is the annual Course Experience Questionnaire (CEQ) of Graduate Careers Australia (GCA), which allows graduates of the education FOE to be compared with graduates of other FOEs and includes graduates whatever their labour force status and occupation. The second is the Staff in Australia's Schools (SAiS) survey of recent graduates who are teaching in schools (more experienced teachers are also surveyed). Aspects of the methodologies and findings of these are discussed in this section.

In addition, the Longitudinal Teacher Education Workforce Study (LTEWS) will provide information on the satisfaction with initial teacher education programs of both recent graduates and, indirectly, principals (employers). The study is being undertaken by Deakin University for the Australian Government Department of Education, Employment and Workplace Relations (DEEWR). It investigates career progression from teacher education into, and possible exit from, teaching employment, and will report the views of graduate teachers on the relevance and effectiveness of their teacher education for their teaching employment. The views of graduate teachers' principals are being investigated regarding the teaching performance of the graduate teachers, and the characteristics of the school and other contextual matters will be reported. Graduate teachers and the principals of the schools in which they work were surveyed (and, in some cases, interviewed) over March to May 2012, and again later in the year. Reports of the LTEWS findings are not yet released. The substantive content, quality and policy-relevance of the LTEWS findings will be able to be ascertained after the publication of reports from the study.

There is thus no currently available national data on employer satisfaction with initial teacher education.

3.2. Course Experience Questionnaire

3.2.1. The nature of the Course Experience Questionnaire

The Course Experience Questionnaire (CEQ) of Graduate Careers Australia (GCA) provides standard scales for measuring graduates' satisfaction with courses that can be compared across fields of education and over time. The scales are briefly described in Box 3. The methodology used by GCA is described in Appendix 3, *Graduate Careers Australia Methodology*.

The data is of reasonable quality and relevance for graduates of *undergraduate* bachelors initial teacher education programs because most bachelors programs in the FOE of Education are in fact initial teacher education (graduate entry bachelors courses are also

included, which include both initial and post initial teacher education programs, though the numbers are not great – See Table A.1). However, graduates of postgraduate initial teacher education programs cannot be differentiated from graduates of post-initial (or general) coursework postgraduate programs in the education FOE. This is because GCA used the ASCED FOE and levels classifications for classifying courses and does not refer to the DIISRTE classifications (see Appendix 2, *Data standards and classifications for initial teacher education,* for a discussion of classification standards). For example, even though a Masters of Teaching is an initial teacher education program, and a Masters of Education a post-initial program, GCA cannot differentiate between graduates of the two types of programs because both are similarly classified according to the ACSED FOE codes. Similarly, there can be no differentiation between initial and post-initial graduate diplomas or graduate bachelors.[3] Fewer than half of all completions in postgraduate coursework programs in the education FOE are completing initial teacher education (see Table A.8 which shows 16,633 postgraduate coursework completions in education, and Table A 10 which shows 6,489 postgraduate initial teacher education completions; those two tables also show that over 90% of undergraduate bachelors completions in education are in initial teacher education). Therefore the discussion in this section is primarily concerned with bachelors graduates, though data for postgraduate coursework graduates is also provided for information.

3.2.2. Course Experience Questionnaire findings

The major published findings for the education FOE and all FOEs from the 2011 CEQ are provided in Table A 4, with data derived from publicly available tables in *2011 Graduate Course Experience Tables and Figures* (Carroll, 2012) (most are also published with explanatory text in Graduate Careers Australia, *Graduate course experience 2011: The report of the course experience questionnaire* (2012c)). GCA notes that 'differences in CEQ scores of five points or more may be considered of practical interest because they represent a difference of at least a fifth of a standard deviation' (2012c, p. 1). Some relevant findings are:

- In the three core scales ('Good teaching scale', 'Generic skills scale' and 'Overall satisfaction item') the 'percentage agreement' of teacher education graduates on the scales were, respectively: 63.7%, 75.8% and 79.8%.
- In the three core scales the differences between the various undergraduate education FOEs (early childhood, primary and secondary), all undergraduate education, all undergraduate FOEs, postgraduate education and all postgraduate FOES were all less than five points, except that the postgraduate courses (both education and all FOEs) score much lower on the generic skills scale (perhaps understandable given the more targeted goals of postgraduate courses).

[3] GCA does make its own distinction between 'Education: initial training' and 'Education: post/other training', but this distinction does not adequately reflect the real distinction between initial and post-initial teacher education, especially at the post-graduate level. This is discussed in Appendix 3.

Box 3. Course Experience Questionnaire scales

GTS: Good teaching scale: the nature of teaching experienced during a course – from six core items

GSS: Generic skills scale : the enhancement of selected generic skills – from six core items

OSI: Overall satisfaction item: overall satisfaction with course quality – from one core item

CGS: Clear Goals and standards scale: whether course structure was clear and meaningful – from optional items

AWS: Appropriate workload scale: whether workload levels hindered deeper levels of learning* – from optional items

AAS: Appropriate assessment scale: whether assessment promoted deeper forms of learning – from optional items

IMS: Intellectual motivation scale: the impact of the course in inspiring and enabling individuals intellectually – from optional items

SSS: Student support scale: access to and satisfaction with key university facilities and services – from optional items

GQS: Graduate qualities scale: whether the course generated higher-order outcomes and perspectives related to lifelong learning – from optional items

LRS: Learning resources scale: the appropriateness and effectiveness of sources of information and course materials – from optional items

LCS: Learning community scale: the social experience of learning at university – from optional items

Source: Graduate Careers Australia, *Graduate course experience 2011: The report of the course experience questionnaire* (2012c, p. iv)

Note: The responses for negative items in the AWS and other scales are reversed. The actual items and the number of responses to each item (Australia-wide, by graduates of bachelors courses) are set out in *2011 Graduate Course Experience Tables and Figures* (Carroll, 2012), Table 4. See also Table 3 for the number of respondents and other descriptive statistics for each scale by graduates of bachelors, postgraduate course-work, other coursework courses, and all coursework courses.

- The generally small negative differences between education and all FOEs in the core items for undergraduate bachelors may be simply a consequence of the demographic and other characteristics of education students (see previous section), or the type of institutions they are enrolled in in larger numbers. Thus these national aggregate figures for the core scales can tell us little if anything about undergraduate initial teacher education programs, except that graduates' course experiences seem to be little different from those of other FOEs.
- The highest agreement levels for education graduates and graduates of all FOEs are for the 'Overall satisfaction item' scale and the 'Intellectual motivation scale'.
- The optional scales have much smaller numbers of respondents. Particular optional scales are chosen by individual universities for their graduates. Thus national findings

will reflect views of the graduates of the particular institutions that have chosen to use the scales. However, there are some intriguing (and possibly significant) findings, such as the early childhood teacher education graduates' very high levels of agreement on the 'Intellectual motivation scale', and the early childhood and primary teacher education graduates' relatively low levels of agreement on the 'Student support scale'[4].

The CEQ is primarily used for internal university course improvement, curriculum and pedagogical evaluation and development (universities also tend to develop their own instruments for student feedback and course evaluation), and national evaluation and accountability of institutions (and to inform funding allocations such as those of the former Learning and Teaching Performance Fund.).

3.2.3. Availability of data from the Course Experience Questionnaire

In addition to the data in the published documents referred to in this section, custom data can be obtained from GCA's Statistical Data Service, the cost and time-frame for provision depending on the nature of the request and availability of staff. Such data could include variables from the graduate destinations section of the survey, and, for example, the CEQ responses on the core items of those teaching in different types and levels of schools (or not working in schools), in different regions, or on different employment contracts could be compared.

In addition, GCA has developed a tool for analysis of qualitative CEQ data, which is collected in the form of comments. This tool, CEQuery, is provided free of charge to approved higher education institutions. CEQuery was developed to collate and analyse the open-ended course evaluation questions included in the CEQ, but it can also be used to analyse a variety

[4] Another finding for all FOEs is that respondents tend to have particularly low levels of agreement on the 'Appropriate assessment scale', and the 'Appropriate workload scale' (just over 40% on the AWS and 50% on the AAS, compared with 61% to 82% for the other scales (Carroll, 2012, Table 3)). In addition, the bachelors graduates tended to be much lower in agreement on these scales than the postgraduate coursework graduates, and those who speak a language other than English at home markedly less likely to be in agreement than those who speak English at home(on the AAS scale, 33% compared with 56%. – see Carroll, 2012, Figure 7). These findings might be a consequence of confusion over the negative items in these scales, especially the AAS, in which all items are negative, with undergraduates more likely to be confused than postgraduates and those who do not speak English at home more likely to be confused than those who speak English at home. Negative items, which are reversed when coded, are problematic because they increase respondents' cognitive processing demands (Carlson et al., 2011; Conrad et al., 2004). The team that developed the later scales in the questionnaire (IMS, SSS, GQS, LRS and LCS) devoted several paragraphs in their report to the problems with negative items, and did not include any in the scales they developed (McInnis, Griffin, James, & Coates, 2001, p. 39).

of student evaluation surveys if they include two discrete fields for positive and negative written comments.

3.3. Staff in Australian Schools

3.3.1. The nature of the Staff in Australia's Schools surveys

The Staff in Australia's Schools (SiAS) surveys have been carried out in 2007 and 2010, and a future survey in 2013 is possible. They are carried out by the Australian Council for Educational Research and funded by the Australian Government. SiAS is a sample study designed to provide reliable estimates at the national level, and no information is obtained that matches early career teachers to their actual teacher education institutions.

Early career teachers (those who have been teaching for five years or less – around one quarter of primary teacher respondents, and one fifth of secondary teacher respondents) were asked their perceptions of the helpfulness of their pre-service teacher education course. Responses are reported in the 2010 survey report (McKenzie, Rowley, Weldon, & Murphy, 2011), and reproduced in Tables A.5 and A.6 and summarised below.

3.3.2. Findings from the 2010 Staff in Australia's Schools survey

SiAS is specific to school teachers, and thus the items are more fine-grained and relevant to teaching and initial teacher education than the CEQ items. Key findings from the 2010 survey are as follows (details in Tables A.5 and A.6):

- Both primary and secondary teachers found their pre-service teacher education course particularly helpful in preparing them for: 'reflecting on my practice', 'developing and teaching a unit of work', 'working effectively with other teachers' and 'teaching the subject matter I am expected to teach'.
- Primary teachers also found their pre-service courses helpful in preparing them for 'developing students numeracy skills' and 'developing students literacy skills' (though less so than the other areas), while secondary teachers found their courses less helpful in these areas.
- Both primary and secondary teachers found their pre-service teacher education course least helpful in preparing them for: 'teaching students from Indigenous backgrounds', 'teaching students from different cultural backgrounds', 'teaching students with learning difficulties', and 'working effectively with parents and guardians' (McKenzie, et al., 2011, pp. 170-171).

These findings are very similar to those of the 2007 SiAS survey (McKenzie, Kos, Walker, & Hong, 2008, pp. 72-73).

3.3.3. Availability of data from the Staff in Australia's Schools survey

Data such as that in Tables A5 and A.6 is available in the published reports. The reports provide detail about the methodology of the surveys, standard errors and interpretation of findings.

In addition, researchers can access the SiAS data through the Australian Data Archive (http://www.ada.edu.au/ada/home). General conditions of access and costs are available from: http://www.ada.edu.au/ada/access-conditions. Analysis of the data beyond that carried out for the published reports may be illuminating because SiAS has demographic background information on individual teachers as well as information on their career paths, current teaching responsibilities, job satisfaction, and career intentions. Such data lends itself to potentially interesting multivariate analyses of views and attitudes.

3.4. Options for publication by AITSL or others

Both SiAS and CEQ have interesting and potentially valuable findings. However, CEQ is more relevant to the particular institutions and courses from which respondents graduated because the content is largely concerned with actual processes and resources of the courses rather than outcomes (with the exception of the generic skills scale). It is also more vulnerable to misinterpretation because of the nature of derived scales, rather than direct questions. It would be appropriate for AITSL to refer to CEQ (and similar graduate satisfaction surveys) in terms of reporting how they are utilised by initial teacher education providers to inform improvement and development of courses, facilities and student support. It would not be important to refer to actual CEQ findings (though information might be provided regarding their general nature and how they can be accessed).

The SiAS items are concerned with perceptions of helpfulness of initial teacher education courses in specific areas of teaching practice. This would provide useful feedback for initial teacher education providers, and it can also be particularly useful in informing the planning of professional development activities and support by school authorities, professional associations and higher education post-initial teacher education providers. The SiAS items are readily comprehendible by the general public, though some contextual information would assist in interpretation. Such information may include the nature and goals of initial teacher education, and how these relate to the SiAS findings.

3.4.1. Summary recommendations

That AITSL consider reference to the CEQ (and similar surveys of graduates and enrolled students) in its investigations into and reporting of the information that initial teacher education providers use to inform their developmental and improvement work.

That AITSL discuss with initial teacher education providers (the ACDE) and others (including the SiAS team) the ways in which SiAS findings of the views of early career teachers about their initial teacher education can be most usefully and accurately presented.

4. EMPLOYMENT RATES IN THE PROFESSION AFTER GRADUATION

4.1. Introduction

The most recognised source of information about employment rates in the profession after graduation is Graduate Careers Australia, which has been tracking the employment and other destinations of graduates of Australian higher education providers since 1974. Relevant data is collected by means of the Graduate Destinations Survey (GDS) (Graduate Careers Australia, 2012a, 2012d), and Beyond Graduation Survey (BGS) (Graduate Careers Australia, 2012b).

In addition to the GCA surveys, the Longitudinal Teacher Education Workforce Study (LTEWS) will provide survey information about recent initial teacher education graduates' experiences, including workforce status, whether or not employed in a school, and, if so, school type and location, and the nature of the employment contract (casual, contract or permanent).

ABS Census data on the population with school teaching qualifications (as highest qualification) by age, whether teaching or not, labour force status, salary, geographic location, and so on can provide an indication of employment rates in the profession after graduation and other relevant matters. While age is not an accurate proxy for years since graduation, the data on the population with school teaching qualifications is of generally high quality and potential rich detail. As time increases since graduation the quality and relevance of the Census increases relative to longitudinal studies.

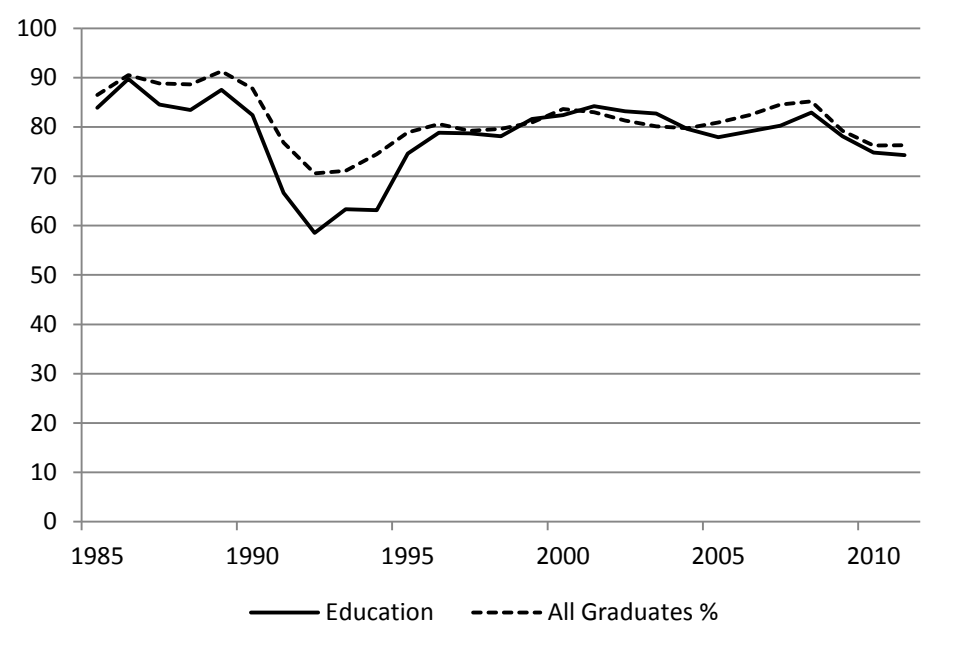
4.1.1. Graduate Destinations Survey

Appendix 3 provides information about the methodology used and the nature of data collected. Like the data from the CEQ (see previous section), the data on bachelor degree graduates (especially GCA's 'Education – Initial' category) is largely representative of undergraduate initial teacher education graduates, but the data on postgraduate coursework graduates in the FOE of education would represent post-initial (and general) as well as initial teacher education graduates. As with the CEQ, most of the published data and analysis concerns bachelors degree graduates.

The GDS has great value in its longevity. Figure 1 presents data from 1985 until 2011 on the percentage of bachelor degree graduates in education and all FOEs who are available for full time work and are working full time. The general employment patterns are very apparent, in particular the recession of the early 1990s that was associated with some severe reductions in funding for schools by state governments, and thus reductions in teacher numbers and the loss of most positions for recent graduates in some states – graduates in education were more severely affected by the recession than graduates as a whole. There has been a recent dip in full time employment opportunities, affecting education graduates and all bachelors graduates.

Recent detailed data on the destinations of bachelors programs indicates that in 2008 almost 90% of primary and secondary teacher education graduates who were working full time were working in schools (Table A.7). The occupation (or industry of employment) of those working part time is not provided in this standard format, but could be specified for custom data.

Figure 1. Bachelor degree graduates working full-time as a percentage of those available for full-time employment, education and all FOEs, 1985-2011



Source: GCA, *2011 Graduate Destinations Tables and Figures* (Guthrie, 2012), Table T5

Note: The 'education' data is the GCA's 'Education – Initial' category

4.1.2. Beyond Graduation Survey

Those who were first surveyed regarding their graduate destinations in 2008 were invited to participate in follow-up surveys in subsequent years – the Beyond Graduation Surveys (Graduate Careers Australia, 2012b). Some findings regarding bachelors graduates in the FOE of education include:

- The percentage of those working full times as a percentage of those available for full time employment increased between 2008 and 2011 for education graduates, as it did for graduates of all other FOEs. (p. 3)

- It appears that a very slightly higher percentage of those in full time employment were working in schools in 2011 compared with 2008 (93.0% compared with 91.5% considered their 'qualification important to their main paid job' - (p. 5)[5])
- Education graduates were less likely than those who graduated from any other FOE to be seeking alternative employment in 2011. (p. 6)
- In 2008 the median salary of Education graduates was above that of all graduates ($48,000 compared with $47,000), but by 2011 it was below ($63,000 compared with $66,000). The growth in median salaries of the graduates of every other FOR was greater than that of education graduates. (p. 12)

4.1.3. ABS Census

ABS Census data for 2006 and 2011 can provide a wide range of data that indicates developments in employment in the profession after graduation. An illustration of some basic data is provided in Table A 15. Census data can provide sub-classifications of qualifications data, utilising ASCED, by level of course and FOE (such as primary or secondary teaching qualifications). This data is not as robust as the total figures, but can provide useful analyses in particular circumstances.,

The data indicates a high level of part-time employment among young teachers in both 2006 and 2011 (though the rate of part time employment is greater for those aged 30-34 than for those in their 20s), and that those working as teachers are more likely to be working full time. That around a fifth of those with teaching qualifications who are working as teachers are working part time indicates the importance of reporting from the GDS the number of those at working part time (or casual) as teachers, as well as those who are working full time.

The number aged under 25 barely changed over the five years, while the number aged 25-29 increased by around a fifth. The increasing age of graduates has probably been a key factor, and the increase in the total number under 30 (14%) is probably a better indicator of the increase in the number of initial teacher education graduates and new recruits to the teaching workforce.

4.2. Discussion

All these data sources have their limitations. The GDS is limited primarily because it cannot clearly differentiate between initial and post-initial postgraduate teacher education courses. This problem will be exacerbated as an increasing proportion of initial teacher education students undertake postgraduate programs. The value of all the GCA data would be significantly enhanced if the DIISRTE 'special course code' was applied so that not only

[5] Custom data from the survey that specifically included employment in schools could not be obtained within the timeframe of this project.

teacher education, but also the other professional education programs (for nursing, medicine, dentistry, veterinary science and psychology) can be accurately sub-classified into initial (or pre-registration) and post-initial.

The Census is limited as a means for measuring employment rates in the profession after graduation because it does not have a direct measure for when those with teaching qualifications gained those qualifications, and there are relatively high rates of separation from teaching within around the first five years of employment as a teacher.

4.3. Options for publication by AITSL or others

There is a great deal of indicative or limited data concerned with employment rates in the profession after graduation. Much of it could be publicly presented by AITSL or others, but its limitations would need to be made clear.

In addition, consideration must be given to the complexity of factors associated with the employment in occupations other than school teaching of those with teaching qualifications. For instance, employment in occupations other than teaching could be a result of any or several of the following:

- a general oversupply of those seeking teaching positions relative to vacancies (as notably occurred in the early 1990s – see Figure 1)
- a positive choice by graduates for employment in other occupations where the capabilities developed in the teacher education course can also be well utilised
- a negative choice by graduates who would prefer teaching but find that the conditions of employment (such as a lack of on-going, secure positions) and other aspects of the work less satisfactory than those associated with alternative occupations
- a mismatch between supply and demand according to location and/or specialisation in the segmented teaching labour market (for example, positions may be available in certain locations for mathematics and special education teachers, but the only potential recruits available for positions in those locations do not have those specialist qualifications.

5. OTHER INFORMATION

5.1. Data from existing collections

There is a wide range of data and other information concerned with initial teacher education. Basic data covers commencement, enrolments and completions, and how the numbers have changed over time. Demographic data, such as age, sex, Indigenous status, language spoken at home, can be added to details about the course undertaken and the institution.

Such data is available from DIISRTE – to be extracted from tables and datacubes published on the Department website, or obtained for a relatively small cost as custom data (specified according to the data items in the Higher Education – Student collection). Tables in Appendix 5 provide examples of the sort of data that is available.

5.2. New collection

5.2.1. Data on graduates' teaching specialisations

Appropriate data on the teaching specialisations of teacher education graduates (or final year initial teacher education students) is a major area of data that has not already been considered in this report and is not available from DIISRTE. It is very important for both workforce planning and initial teacher education program planning.

In this area what is particularly important are specific qualifications, such as secondary physics, or special education with specialisation in hearing or vision Impairment, and information on levels of schooling that graduates are qualified to teach in addition to straightforward primary and secondary, such as middle school and differing early childhood ranges such as ages 0-4, 0-8, or 5-8.

Such data is only available directly from teacher education providers – it is not collected as part of the regular DIIRSTE student data collection from universities. Because of its value for workforce planning and related purposes, it has been collected by government school authorities or teacher regulatory authorities and others on an ad hoc and jurisdictional basis for many years. However, there have been problems with the lack of consistency in the classification of specialisations and in the enumeration of the multiple specialisations acquired by most individual teacher education students. In addition, collection has often been unnecessarily burdensome for teacher education providers because of inconsistent or eccentric data items, and short timelines at inconvenient times of the year.

The collection of 'completions by specialist area' is part of the planned work of the National Teaching Workforce Dataset (NTWD) project. It will be important to develop a classification scheme that meets the criteria for a quality classification standard and is very effective in organising and presenting data that is appropriate for policy and research.

An appropriate classification scheme for collecting data from teacher education providers on teaching specialisations of graduates could be developed out of the actual specialisations in which teacher education graduates qualify (and in which teachers teach), structured within a framework of the major learning areas and cross curriculum specialisations. Thus, within 'science' would be included 'physics', 'chemistry' and so on; within 'languages other than English' would be included a number of specified languages; and within 'special education' would be included a number of subspecialisations, such as teaching the vision or hearing impaired. In addition, information about the levels of schooling graduates are qualified to teach should be collected as these are not always adequately described in the DIISRTE ASCED-based collections.

A classification standard that is appropriate for both teachers' qualifications and for the actual areas of teaching (subjects and/or special groups of students or other specialisations) would be optimal as it would facilitate the tracking and analysis of teachers' in-field and out-of-field deployment, as well as informing supply and demand forecasts.

6. CONCLUSION

From the analysis in this paper six broad areas for action by AITSL and others are suggested:

6.1.1. Public presentation of data

Some of the types of data presented in Appendix 5, or discussed in the report, could be selected for public presentation by AITSL or others. The data that should be prioritised for public presentation is data that is straight forward, unambiguous, complete and not potentially misleading, and of public interest and policy relevance.

6.1.2. Development of material to explain issues around entry standards

The issues around entry standards and criteria for entry into initial teacher education are complex and controversial, and misunderstandings are common among the public and policy-makers. AITSL could work with others, such as the ACDE, to prepare a paper and/or other material to clarify the issues for the public (including journalists) and policy makers.

6.1.3. Support for GCA differentiating accurately between initial and post-initial

Support needs to be given to GCA to make the simple differentiation (when coding future surveys returns) between initial (pre-registration) and post-initial (or general) courses that is possible by the application of the DIISRTE 'special course code'. This would very substantially increase the value of the GCA data on graduates of courses the Australian Government has prioritised for clear differentiation and attention (teaching, nursing, medicine, veterinary science, dentistry and clinical psychology). It would also make much more worthwhile the effort put into the survey process by responding graduates, university staff and others as well as GCA itself. It may be appropriate to consult with those with a similar interest in the course experiences and graduate destinations of nursing and other professional preparation courses.

This additional classification would not preclude GCA presenting data and analysis based on its existing coding. The parallel is with DIISRTE continuing to present data according to FOE without the special course code (as in Table A. 8), but also providing the very policy-useful data with the special course code applied.

GCA may require additional resources to do this work.

6.1.4. Support for the development of a standard classification for teaching specialisations

Support needs to be given to the NTWD project (or other appropriate process) to collaboratively develop a high quality and policy-useful standard data classification for teacher subject and other specialisations which is applicable, as far as possible, to teachers

actual areas of specialist work as well as the qualifications of teachers. Only once such a standard has been developed and agreed should action be taken to comprehensively collect the data from higher education providers.

6.1.5. Support for SiAS

The continuing work of the SiAS surveys should be supported to ensure further valuable data is collected and disseminated and appropriately applied in informing policy and practice.

6.1.6. Support for LTEWS

The Longitudinal Teacher Education Workforce Study has the potential to collect very valuable data. Like SiAS, it needs support for its effective continuation, and for the wide dissemination and application of its findings to inform policy and practice.

APPENDIX 1. OBJECTIVE OF THIS PROJECT AND SERVICES TO BE DELIVERED

The objective of this project is to prepare an initial teacher education information scoping study that will:

- inform a proposal for Ministers on the reporting of initial teacher education data. Ministers have requested that information standards be including in Program Standards for Accreditation of Initial Teacher Education, and that AITSL provide advice on a mechanism to make public information on initial teacher education, including, as a minimum:
    - entry standards
    - student and employer satisfaction
    - employment rates in the teaching profession following graduation.
- contribute to a broader data project on the collection and reporting of specific initial teacher education data that AITSL will undertake in 2013.

The report will build on initial desktop research already carried out by AITSL, and will

- outline the data that is currently available on entry standards, student and employer satisfaction and employment rates in teaching profession after graduation (as requested by Ministers)
- outline other data that is currently available concerning initial teacher education such as numbers of commencements and completions, by specialisation/s, citizenship, age, sex, and Indigenous status
- assess the suitability of such data for public reporting in terms of its accessibly, quality, meaningfulness and issues regarding interpretation, including reporting on the basis of individual courses, institutions, states and territories, and/or national
- identify gaps in the publicly available data concerning entry standards, student and employer satisfaction and employment rates in the teaching profession following graduation, and comment on possible new data sources to effectively fill gaps
- propose options for the collation and public reporting of the currently available data, including a recommendation as to how and who should report the information
- make recommendations as to how data from the National Teaching Workforce Dataset (NTWD) and Longitudinal Teacher Workforce Study (LTWS) might be included in future reporting concerned with the Ministers' initial requests.

APPENDIX 2. DATA STANDARDS AND CLASSIFICATIONS FOR INITIAL TEACHER EDUCATION

This appendix discusses in detail the appropriateness for initial teacher education of the main national statistical standards and classifications used for data concerned with initial teacher education students, courses and outcomes.

The use of appropriate standard data classifications is very important – Item 4 of the National Statistics Service (NSS) *Key Principles '* (2009) states: 'Use standard classifications, standards and frameworks.' However, this is not an absolute principle, and variations to the standards are acceptable if there is good reason - the item goes on: 'Explain deviations from the relevant international/national standards' (see box 4).

Existing national standard classifications

Important national standards for the classification of initial teacher education data are the Australian Standard Classification of Education (ASCED) (Australian Bureau of Statistics, 2001) and the classification standards developed by the Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) for the 'Higher Education Student' collection (data collected from higher education providers), and the 'University Applications and Offers' collection (data collected from state Tertiary Admissions Centres – TACs) (2012b, p. 3). These classification standards are on the DIISRTE website - 'Higher Education Student – Elements by Name' (2012d) and 'University Applications and Offers – Elements by Name' (2012f).

The ASCED has two components, one each for the dimensions of *levels of education* (from pre-primary to doctoral level) and *fields of education* (FOEs). The DIISRTE classifications have many components (the elements), to describe a student's background, demographic characteristics, the nature of units of study (and courses) undertaken (including level and FOE), modes of study, campus and institution location, and so on.

Shortcomings of ASCED and DIISRTE variations

ASCED is commonly used (or its use proposed for) classifying initial or post-initial teacher education, but it has some serious short-comings as a classification scheme for data on initial and post-initial teacher education.

The dimension of *levels* in ASCED does not reflect the reality of initial and post-initial teacher education courses (and courses in other fields). The ASCED does not have a category for graduate entry bachelors programs, which 733 initial, post-initial or general education students completed in 2011, and the ASCED does not distinguish between initial and post-initial graduate diplomas and coursework masters. In 2011 14,130 students completed postgraduate coursework programs (excluding graduate certificates), yet fewer than half that number (6,489) completed initial teacher education post-graduate programs (see Appendix 5. *Additional Statistical Tables*, Tables A.8 and A.9). Thus any analysis of the

Box 4. National Statistics Service (NSS) Key Principles (excerpt)

Statistical Integrity

1. Be objective in data definition, analysis, interpretation and release of statistics.
2. Be open about all aspects of the statistical process:
   - set, and publicise in advance, the dates for and nature of statistical releases;
   - publish methodologies used in producing statistics; and
   - invite and respond promptly to comment.

Relevance

3. Consult widely with government, business and the community to ensure the statistical information produced supports debate about current and emerging issues, within available resources.

Coherence

4. Use standard classifications, standards and frameworks. Explain deviations from the relevant international/national standards.
5. Ensure that the statistical methodology and data remain internally consistent over time. Explain reasons for any changes that occur between collection periods.

Timeliness

6. Allow enough time to check the data for a reasonable level of accuracy and plan to release the statistics as soon as possible after their collection.
7. Where a publication date has been advertised, ensure that the statistics are released on this date.

Accessibility

8. Ensure that important statistics are compiled from key administrative and survey data sets relating to government programs and activities.
9. Provide all Australians with ready access to quality statistics.

Interpretability

10. Provide analyses and explanations where they help the interpretation of statistics.
11. Be open about the quality of the statistics, so that users can better understand and interpret them.

Accuracy

12. Ensure sound statistical practices are followed for collecting, processing, storing and presenting statistical data.

Statistical Professionalism

13. Ensure necessary professional statistical skills are developed or acquired and used in the production of statistics.

Trust of Data Providers

14. Place only the minimum reporting load necessary on data providers, commensurate with administrative requirements, priority statistical objectives and sound statistical practice.
15. Explain clearly to data providers how the information provided may be used.
16. Ensure compliance with privacy principles, confidentiality guarantees and other undertakings to data providers.

Source: National Statistics Service (2009)

attributes or destinations of graduates of postgraduate programs will not be able to distinguish between those who graduated from initial and post-initial programs if the ASCED alone is used. This is most relevant to Graduate Careers Australia data, the methodologies used by CGA are discussed in the following Appendix.

The DIISRTE 'Higher Education Student' classification largely overcomes these shortcomings of the ASCED. In its 'course of study type code' (equivalent to levels) it includes bachelors graduate entry and makes what is essentially an initial / post-initial distinction in graduate diplomas: 'Graduate Diploma/ Postgraduate Diploma (pass or honours) involving new academic, professional or vocational area' (initial) and 'Graduate Diploma/ Postgraduate Diploma (pass or honours) extending skills and knowledge in a professional area previously studied' (post-initial). This classification distinction is not absolute, and there is still no distinction between initial and other coursework masters and bachelors graduate entry, and even undergraduate bachelors in the FOE of Education. To overcome this difficulty (which affects other professional areas well as teacher education), the 'Higher Education Student' classification has a 'special course type code' element which applies to initial or pre-registration courses in teaching, nursing, medicine, veterinary science, dentistry and clinical psychology. With a combination of these two codes the DIISRTE classification is able to distinguish initial and post-initial programs at all levels. In addition to the DIISRTE classification, the AITSL list of accredited courses (2012a) allows clear identification of initial teacher education programs if the course name and institution is known.

The dimension of *fields of education (FOEs)* in ASCED is also problematic for teacher education (post-initial as well as initial). However, there is no standard alternative. The DIISRTE classifications use ASCED for FOEs, as do other datasets.

There are two issues with the ASCED regarding the FOEs for initial teacher education, covering, first, the levels of schooling for which graduates are qualified to teach, and, second, the subject and other specialisations they also might have.

The levels of schooling are broadly covered in the 4-digit level of 'Teacher Education' at the 6-digit level: 'Teacher Education: Early Childhood', 'Teacher Education: Primary', 'Teacher Education: Secondary', 'Teacher-Librarianship', 'Teacher Education: Vocational Education and Training', 'Teacher Education: Higher Education,' 'Teacher Education: Special Education', 'English as a Second Language Teaching', 'Nursing Education Teacher Training', and 'Teacher Education, n.e.c'. (Australian Bureau of Statistics, 2001, p. 150). These categories have some differences with actual practice that may be important. First, the 'Teacher Education: Early Childhood' category does not differentiate between non-school (for example ages 0-3, 0-4/5, 3-4/5), school only (5-8), or both non-school and school (0-8, 3-8). Second, there is no 'middle school' category, for which a number of courses exist. And there are a range of combinations of qualifications arising from particular courses: graduates may be qualified to teach any one or two or all of early childhood, primary, middle school, secondary, vocational education and training, and so on. The AITSL list of courses (2012) provides the current range of qualifications associated with particular

courses. There are not a large number of such variations in school levels (or other education settings) in which graduates are qualified to teach, and a common standard list could be developed, perhaps largely involving sub-classifications of the ASCED categories.

Data on subject or other specialist qualifications of teacher education graduates is of vital importance for both workforce planning and course evaluation and development. However, there is no adequate public classification standards for doing so. Schemes for classifying qualifications in the collection of data on teacher education students, graduates and practicing teachers should be comparable with (if not identical to) the classification schemes used by school authorities for positions (or the actual tasks to be undertaken). This allows any easy assessment of out of field teaching without laborious and inexact work on concordance.

DIIRTE does not classify initial and post-initial teacher education courses by field of education beyond the single classification at the 6-digit level under 'Education' (the large majority in one of the 'Teacher Education' categories) (double degrees will have a FOE code for each award). Thus data on subject and other specialisations will need to be collected directly from initial teacher education providers – faculties of education maintain a record of the specialist qualifications of their graduating students, even if such data is not collected from them by central administrations for the DIISRTE collections.

Using ASCED at the 6-digit level gives many possibilities, and it is quite likely that different people would code the same qualification or teaching area differently (for example, senior agriculture has around a dozen or more possibilities). The ASCED does differentiate, for example, physics, chemistry and biology, and music, drama and performing arts and visual fine arts, but it does not differentiate various important LOTEs – for example, the category Eastern Asian Languages does not allow differentiation of Japanese from Mandarin or Korean.

Developing new classification standards

The shortcomings of ASCED for classifying teaching specialisations are sufficient for serious consideration to be given to developing a new classification standard (or a 'metadata standard') as suggested in section 5.2.1 and discussed above. Such a classification, and any other new classification standards, should be done rigorously and collaboratively. Collaboration or thorough consultation would be necessary to ensure that the differing circumstances in the various jurisdictions, and possible changes over time, are all catered for.

A large number of classification standards have been developed for Australian health and welfare data, and these are registered, along with supportive documents, in the Australian Institute of Health and Welfare's METeOR metadata online registry – 'Australia's repository for national metadata standards for health, housing and community services statistics and information' : (Australian Institute of Health and Welfare, 2012). Box 5 sets out the METeOR explanation of the nature of and rationale for standards in the classification of data. The

work associated with METeOR can provide a model for work in developing high quality new data classification standards in education.

Box 5. About metadata standards (from AIHW's METeOR)

The development of metadata standards improves quality, relevance, consistency and the availability of national information about the health and welfare of Australians. The drivers for standard development arise from the need for better information - whether it is statistical, administrative, clinical or other information.

Metadata standards describe the expected meaning and acceptable representation of data for use within a defined context. The need for consistency of meaning is vital to facilitate information sharing among primary and secondary users of the data. Much of the work involved in establishing a data collection is in the development of metadata standards to ensure comparability and consistency of the data collected and produced from the collection. Other benefits include:

- **Consistency of content and definition**

  If we never have to share data then there is no need to standardise. If we share data then we need to ensure that all those who need to use the data can clearly understand the meaning regardless of how the data is collected or stored.

- **Avoid duplication and diversity of solutions**

  Metadata standards are generally required when excessive diversity creates inefficiencies or impedes effectiveness. Metadata standards offer a means of narrowing the variety of ways information is exchanged among different groups, allowing synergy between multiple development efforts.

- **Reduction in cost of data development**

  Metadata standards provide a way to solve a problem that other people can use without having to start from scratch. Metadata standards provide a common and consistent platform for organisations to work, thereby simplifying adoption and implementation at the local and national levels.

Source: (Australian Institute of Health and Welfare, 2012)

APPENDIX 3. GRADUATE CAREERS AUSTRALIA METHODOLOGY

The information in this appendix draws primarily from the Graduate Careers Australia (GCA) publication, *Australian Graduate Survey 2011: A report of the conduct of the 2011 Australian Graduate Survey* (2012a), and page numbers refer to that document.

GCA carries out three separate surveys: first, the main Australian Graduate Survey (AGS)[6] that incorporates items concerned with graduates' destinations ('Graduate Destinations Survey' or GDS) and course experiences (the 'Course Experience Questionnaire' or CEQ), which are treated separately; second, the Postgraduate Research Experience Questionnaire (PREQ); and, third, the Beyond Graduation Survey (BGS), which is a three- and five-years after graduation follow up (p. 1). This project is not concerned with the PREQ.

Populations surveyed and response rates

The surveys are censuses, not sample surveys – that is, 'all new graduates receive a survey form or an invitation to complete one online or via a telephone interview' (p. 3). Each higher education institution conducts its own data collection. The majority of surveys are completed online (52% of the 2011 GDS and 55% of the CEQ[7]), and the rest on hard copy (including completions at graduation ceremonies) and via telephone (p. 13). The first survey round in held in October, and is for those who complete mid year (27% of respondents), the second round is held in April, and is for those who complete at the end of the year (73% of respondents), and a small number of surveys are held at other times of the year for those who complete, for example, at the end of terms one or three in a four term year (p. 13).

A minimum response rate of 50.0% is required for the publication of data (though institutions may make internal use of data pertaining to their graduates with lower response rates). The total (domestic and overseas/international students) 2011 AGS response rate was 56%, and the response rate for domestic students only was 62% (p. 4). The number of responses by field of education (FOE) closely matches the proportional number of students completing each FOE (p.5). Similarly the respondents are representative of the survey population in terms of sex (p. 10). There were 134,388 responses to the 2011 GDS component, and 130,158 responses to the 2011 CEQ[8] (p. 13), resulting in a slightly lower response rate for the CEQ (55%).

[6] The term 'Australian Graduate Survey' is also used by the GCA to include the PREQ.

[7] The difference between the two is because institutions carry out a final follow-up by telephone, conducting the GDS component of the questionnaire over the phone, but not the CEQ component, which they invite respondents to complete online (the current AGS methods preclude institutions from collecting their own CEQ data via telephone - p. 13). This increases the number of online CEQ responses, but decreases the total number of CEQ responses because not all of those who complete the GDS by telephone go on to complete the CEQ online.

[8] See previous footnote.

Data classification standards

GCA uses the ASCED to classify courses into FOEs which has the problems for initial teacher education discussed in the Appendix 2. In addition to the ASCED categories, GCA aggregates the fields of education within the broad FOE of education as follows:

EDUCATION: INITAL TRAINING
- Curriculum Studies
- Education Studies
- Teacher Education
- Teacher Education: Early Childhood
- Teacher Education: Primary
- Teacher Education: Secondary
- Teacher Education: Special Education
- Teacher Education: Vocational Education and Training

EDUCATION POST / OTHER TRAINING
- English as a Second Language Teaching
- Nursing Education Teacher Training
- Other Education
- Teacher Education: Higher Education
- Teacher-Librarianship

(Graduate Careers Australia, 2012a, pp. 20-21)

These are all the fields at a 6-digit level in the ASCED Broad Field 07: EDUCATION (Australian Bureau of Statistics, 2001, pp. 149-153). However, the ASCED does not make any distinction between 'initial training' and 'post/other training', and the classifications would have many exceptions (for example, teacher education courses in special education are mostly post-initial, and other post-initial courses will often be appropriately classified in categories listed here as 'initial').

GCA does not differentiate postgraduate initial teacher education programs from all other postgraduate coursework programs in the education FOE. For example, even though a Masters of Teaching is an initial teacher education program, and a Masters of Education a post-initial program, GCA cannot differentiate between graduates of the two types of programs because both are similarly classified according to the ACSED FOE codes. Similarly, there can be no differentiation between initial and post-initial graduate. Fewer than half of all completions in postgraduate coursework programs in the education FOE are completing initial teacher education (see Table A.8 which shows 16,633 postgraduate coursework completions in education, and Table A 9 which shows 6.489 postgraduate initial teacher education completions; those two tables also show that over 90% of undergraduate bachelors completions in education are in initial teacher education).

APPENDIX 4. DATA ON THE PRE-REGISTRATION (INITIAL) EDUCATION OF SELECTED HEALTH PROFESSIONS

This appendix outlines data collected or re-published by organizations specific to particular professions, not general higher education or graduate data such as that published by the Higher Education Group of the Department of Industry, Innovation, Science, Research and Tertiary Education, or by Graduate Careers Australia.

Medical Education

The Australian Medical Council

The Australian Medical Council (AMC) accredits pre-registration ('basic') medical courses. The AMC website (http://www.amc.org.au/index.php/ar/bme) publishes no statistics related to basic medical education. It does publish a list of accredited medical schools and summaries of accreditation reports of individual programs. Like AITSL, the AMC has accreditation standards concerned with the collection and management of information about students' background, entry and other attributes, and graduate attitudes and destinations, and the use of such information to inform course development. The relevant standard is as follows:

> **6.2 Outcome evaluation**
>
> The performance of student cohorts is analysed in relation to the curriculum and the outcomes of the medical course.
>
> Performance is analysed in relation to student background and entrance qualifications, and is used to provide feedback to the committees responsible for student selection, curriculum planning and student counselling.
>
> The school evaluates the outcomes of the course in terms of postgraduate performance, career choice and career satisfaction.
>
> Measures of, and information about, attributes of the graduates are used as feedback to course development.
>
> *Notes*
>
> Schools are encouraged to participate in long term outcome evaluation projects, such as the Medical Schools Outcomes Database project sponsored by the Medical Deans Australia and New Zealand. (p. 26)
>
> (Australian Medical Council, 2010, p. 26)

The Medical Deans Australia and New Zealand statistics publications

The Medical Deans Australia and New Zealand publishes statistics on basic medical education students. The 2012 Student Statistics are provided in five sets of tables, with

Australian and New Zealand data provided separately (http://www.medicaldeans.org.au/statistics/annualtables):

Table 1: Domestic medical students by year of course 2012

Table 2: Total medical students by year of course 2012

Table 3: Total commencing medical students time series 2002-2012

Table 4: Domestic medical graduates time series 1996-2011

Table 5: International medical graduates time series 1999-2011

In addition, the Medical Deans publish 'Snapshot data' graphically on various issues such as type of student place, gender, Indigenous students, Maori students, and time series of domestic graduates by state (http://www.medicaldeans.org.au/statistics/snapshots).

The Medical Schools Outcomes Database and Longitudinal Tracking (MSOD) Project

The Medical Deans auspice the Medical Schools Outcomes Database and Longitudinal Tracking (MSOD) Project, which tracks medical students through medical school and into prevocational and vocational training, and will continue tracking into employment and other activities (http://www.medicaldeans.org.au/medical-schools-outcomes-database). The project has a particular (but not exclusive) focus on informing policy to increase the number of new general practitioners in rural locations. The project is well funded by the Australian Government through Health Workforce Australia, it has high levels of co-operation and in-kind support from medical schools, medical students' organisations and other bodies, and it has the focused attention of a wide range of organisations and individual researchers with an interest in the medical workforce and related matters. The range of research that the project data has informed and the diversity of organisations and individuals involved in MSOD-related research and policy development is apparent in the report of the MSOD project inaugural research forum in November 2011 (Medical Schools Outcomes Database and Longitudinal Tracking Project, 2011).

On the Medical Deans MSOD website, data is presented in the context of research reports based on responses to particular questionnaires (at this stage, commencing medical students questionnaire, exit questionnaire, one year after completion of medical studies, and three years after the completion of medical studies). In addition, published journal articles that draw from project findings are reproduced on the website, with a strong emphasis on the factors that are related to rural general practice, and a diverse range of current and completed research studies conducted using MSOD data are listed, along with information about activities such as forums on the project and its findings. The MSOD data may be made available on application – the project is providing a rich source of data regarding the attraction of individuals from particular groups into medical education and their preferences and actual experiences relating to locations for practice, specialisation, and other matters.

Nurse Education

The Australian Nursing and Midwifery Accreditation Council and the Nursing and Midwifery Board of Australia

The Australian Nursing and Midwifery Accreditation Council Limited (ANMAC) sets standards for accreditation and accredits nursing and midwifery courses and providers. There is no data related to nursing and midwifery courses and providers on the ANMAC website, but a link is provided to the website of the Nursing and Midwifery Board of Australia, on which are located documents listing accredited courses and providers ('approved programs of study').

The Council of Deans of Nursing and Midwifery Australia and New Zealand

The Council of Deans of Nursing and Midwifery Australia and New Zealand collects data on courses and students in nurse education. This data is maintained for use by CDNM members and is not published.

All health professions: the Australian Institute of Health and Welfare

The Australian Institute of Health and Welfare (AIHW) is a national agency established and funded by the Australian Government (http://www.aihw.gov.au/). The AIHW collects and reports information on a wide range of topics and issues concerned with health and welfare, including on the health professions such as nursing and midwifery, medical practitioners, Indigenous health workers, and oral and eye health practitioners. These reports incorporate detailed data collected from practitioners when they re-register with regulatory authorities, as well as data on graduates of pre-registration and specialist education programs derived from the DIISRTE and NCVER collections and directly from some education providers.

AIHW also developed and maintains METeOR, a metadata online registry that is Australia's repository for national metadata standards for health, housing and community services statistics and information (see Appendix 2 above).

APPENDIX 5. ADDITIONAL STATISTICAL TABLES

Table A. 1. Applications and offers (domestic applicants, undergraduate courses) by ATAR band Teacher Education and all Fields of Education, February 2012

	ATAR						Total with valid ATAR	Total domestic applications
	0-50.00	50.05-60.00	60.05-70.00	70.05-80.00	80.05-90.00	90.05 or more		
Applications								
Early Childhood	442	330	418	263	132	24	1 609	4 137
Primary	774	681	949	833	556	159	3 952	8 851
Secondary	357	357	581	548	412	141	2 396	5 052
Teacher Education nec	195	201	165	114	62	19	756	1 394
Teacher Education nfd	260	248	331	219	134	43	1 235	3 011
Total Teacher Education	**2 041**	**1 825**	**2 447**	**1 983**	**1 300**	**386**	**9 982**	**22 627**
Total All FOEs	15 382	14 336	22 120	25 125	29 196	36 564	142 723	272 414
Offers								
Early Childhood	49	190	438	306	145	26	1 154	3 163
Primary	241	390	801	818	534	160	2 944	6 679
Secondary	93	269	591	640	481	161	2 235	4 519
Teacher Education nec	15	199	197	106	70	20	607	1 099
Teacher Education nfd	39	115	361	236	135	48	934	2 464
Total Teacher Education	**439**	**1 171**	**2 392**	**2 112**	**1 370**	**415**	**7 899**	**18 079**
Total All FOEs	3 813	10 305	20 008	24 196	28 361	33 356	120 039	221 765

Source: DIISRTE Higher Education Statistics custom data from the 'University Applications and Offers' dataset

Table A. 2. Applications and offers (domestic applicants, undergraduate courses) by ATAR band Teacher Education and all Fields of Education, February 2012, percentages

	Applications						
	ATAR						Total applications with valid ATAR as % of all domestic applicants
	0-50.00	50.05-60.00	60.05-70.00	70.05-80.00	80.05-90.00	90.05 or more	
Early Childhood	27.5%	20.5%	26.0%	16.3%	8.2%	1.5%	38.9%
Primary	19.6%	17.2%	24.0%	21.1%	14.1%	4.0%	44.7%
Secondary	14.9%	14.9%	24.2%	22.9%	17.2%	5.9%	47.4%
Teacher Education nec	25.8%	26.6%	21.8%	15.1%	8.2%	2.5%	54.2%
Teacher Education nfd	21.1%	20.1%	26.8%	17.7%	10.9%	3.5%	41.0%
Total Teacher Education	**20.4%**	**18.3%**	**24.5%**	**19.9%**	**13.0%**	**3.9%**	**44.1%**
Total All FOEs	10.8%	10.0%	15.5%	17.6%	20.5%	25.6%	52.4%

	Offers							
	ATAR						Total offers with valid ATAR as % of all domestic offers	*Offers as % of applications*
	0-50.00	50.05-60.00	60.05-70.00	70.05-80.00	80.05-90.00	90.05 or more		
Early Childhood	4.2%	16.5%	38.0%	26.5%	12.6%	2.3%	36.5%	*76.5%*
Primary	8.2%	13.2%	27.2%	27.8%	18.1%	5.4%	44.1%	*75.5%*
Secondary	4.2%	12.0%	26.4%	28.6%	21.5%	7.2%	49.5%	*89.4%*
Teacher Education nec	2.5%	32.8%	32.5%	17.5%	11.5%	3.3%	55.2%	*78.8%*
Teacher Education nfd	4.2%	12.3%	38.7%	25.3%	14.5%	5.1%	37.9%	*81.8%*
Total Teacher Education	**5.6%**	**14.8%**	**30.3%**	**26.7%**	**17.3%**	**5.3%**	**43.7%**	***79.9%***
Total All FOEs	3.2%	8.6%	16.7%	20.2%	23.6%	27.8%	54.1%	*81.4%*

Source: Table A.2

Table A. 3. Acceptances (domestic applicants, undergraduate courses) in teacher education, medical studies and all FOEs, by socio-economic status and region, 2011

	Teacher Education	Medical studies	All FOEs
Socio-economic status			
Low SES	3 293	254	27 865
Medium SES	7 141	832	74 424
High SES	2 195	731	47 084
Total	12 629	1 817	149 373
% of total			
Low SES	26%	14%	19%
Medium SES	57%	46%	50%
High SES	17%	40%	32%
Total	100%	100%	100%
Region			
Metropolitan	8 644	1 392	118 955
Non-metropolitan	4 015	432	30 885
Total	12 659	1 824	149 840
% of total			
Metropolitan	68%	76%	79%
Non-metropolitan	32%	24%	21%
Total	100%	100%	100%

Source: DIISRTE *Undergraduate Applications, Offers and Acceptances 2011* (2011, pp. 95-99)

Note: Similar data for students who have actually commenced study is available as custom data from the Higher Education Student data collection.

Table A. 4. Course Experience Questionnaire (CEQ) mean percentage agreement scores for each scale of selected teacher education, all Education and all FOEs graduates, 2011

	Course Experience Questionnaire scales*										
	GTS	**GSS**	**OSI**	**CGS**	**AWS**	**AAS**	**IMS**	**SSS**	**GQS**	**LRS**	**LCS**
Bachelors											
Early childhood	64.5%	78.7%	81.7%	55.0%	33.7%	56.0%	96.9%	60.3%	81.6%	66.5%	62.6%
Primary	61.8%	75.1%	79.6%	53.1%	36.3%	41.0%	77.4%	62.5%	77.5%	72.0%	58.5%
Secondary	62.8%	76.3%	76.0%	63.0%	39.3%	40.1%	76.1%	71.6%	77.9%	76.4%	57.7%
All Education	63.7%	75.8%	79.8%	57.4%	38.7%	42.6%	77.6%	64.3%	78.4%	71.1%	60.3%
All FOEs	64.8%	77.4%	82.3%	60.6%	40.2%	46.2%	82.6%	69.1%	78.8%	76.5%	63.3%
Difference: All Education minus All FOEs	-1.2	-1.6	-2.4	-3.2	-1.6	-3.6	-5.0	-4.8	-0.4	-5.4	-3.0
Postgraduate coursework											
Education	68.3%	68.9%	80.5%	63.0%	45.2%	65.8%	82.1%	64.8%	80.2%	73.8%	64.4%
All FOEs	66.8%	73.2%	82.1%	61.7%	41.7%	56.3%	83.9%	66.2%	79.6%	77.1%	62.1%
Difference: Education minus All FOEs	1.5	-4.3	-1.6	1.4	3.5	9.5	-1.7	-1.4	0.6	-3.3	2.3
	Difference: Education Bachelors minus Education Postgraduate Coursework										
	-4.6	6.9	-0.7	-5.6	-6.5	-23.2	-4.5	-0.5	-1.8	-2.7	-4.2

Source: *2011 Graduate Course Experience Tables and Figures* (Carroll, 2012)

* Scales:

GTS: Good teaching scale (the nature of teaching experienced during a course – from six core items)
GSS: Generic skills scale (the enhancement of selected generic skills – from six core items)
OSI: Overall satisfaction item (overall satisfaction with course quality – from one core item)
CGS: Clear Goals and standards scale (whether course structure was clear and meaningful – from optional items)
AWS: Appropriate workload scale (whether workload levels hindered deeper levels of learning – from optional items)
AAS: Appropriate assessment scale (whether assessment promoted deeper forms of learning – from optional items)
IMS: Intellectual motivation scale (the impact of the course in inspiring and enabling individuals intellectually – from optional items)
SSS: Student support scale (access to and satisfaction with key university facilities and services – from optional items)
GQS: Graduate qualities scale (whether the course generated higher-order outcomes and perspectives related to lifelong learning – from optional items)
LRS: Learning resources scale (the appropriateness and effectiveness of sources of information and course materials – from optional items)
LCS: Learning community scale (the social experience of learning at university – from optional items)

Table A. 5. Early career primary teachers: perceptions of the helpfulness of their initial teacher education course (%)

How helpful was your pre-service teacher education course in preparing you for:	Very helpful	Helpful	Of some help	Not at all helpful	Total
Reflecting on my own teaching practices	25%	49%	20%	2%	100%
Developing and teaching a unit of work	25%	50%	21%	5%	100%
Working effectively with other teachers	20%	46%	26%	8%	100%
Teaching the subject matter I am expected to teach	15.9	44.6	32.6	7%	100%
Developing students' numeracy skills	14%	51%	29%	6%	100%
Developing students' literacy skills	12%	48%	33%	7%	100%
Handling a range of classroom management situations	12%	36%	43$	9%	100%
Using teaching standards to improve my teaching practices	11%	39%	36%	13%	100%
Using a variety of instructional methods for diverse student needs	11%	40%	41%	7%	100%
Assessing students' performance	10%	36%	44%	11%	100%
Selecting and adapting curriculum and instructional materials	9%	39%	42%	10%	100%
Working effectively with parents/guardians	8%	29%	39%	25%	100%
Teaching students with learning difficulties	8%	23%	50%	20%	100%
Teaching students from different cultural backgrounds	8%	21%	50%	21%	100%
Teaching students from Indigenous backgrounds	7%	23%	43%	27%	100%

Source: Reproduced from *Staff in Australia's Schools 2010: Main Report on the survey* (McKenzie, et al., 2011), Table A.5.11, p. 170

Note: Early career teachers were defined as those who had been teaching for five years or less (24.8% of primary teacher respondents). The items are ordered in terms of the proportions who responded 'very helpful'. The figures reported in this table are estimates of population values obtained from the SiAS sample. Each should be seen as an estimate, not as an exact measure of the population that it represents. The figures have been rounded from the original to whole numbers.

Table A. 6. Early career secondary teachers: perceptions of the helpfulness of their initial teacher education course (%)

How helpful was your pre-service teacher education course in preparing you for:	Very helpful	Helpful	Of some help	Not at all helpful	Total
Developing and teaching a unit of work	36%	44%	16%	4%	100%
Reflecting on my own teaching practices	34%	45%	18%	3%	100%
Teaching the subject matter I am expected to teach	30%	44%	20%	7%	100%
Working effectively with other teachers	25%	49%	26%	9%	100%
Using teaching standards to improve my teaching practices	16%	42%	30%	12%	100%
Using a variety of instructional methods for diverse student needs	14%	43%	33%	9%	100%
Selecting and adapting curriculum and instructional materials	14%	46%	31%	9%	100%
Assessing students' performance	13%	47%	31%	9%	100%
Handling a range of classroom management situations	11%	34%	40%	15%	100%
Developing students' literacy skills	7%	30%	42%	21%	100%
Teaching students from different cultural backgrounds	6%	25%	46%	23%	100%
Developing students' numeracy skills	6%	24%	40%	30%	100%
Teaching students with learning difficulties	6%	22%	44%	28%	100%
Working effectively with parents/guardians	6%	25%	38%	31%	100%
Teaching students from Indigenous backgrounds	5%	21%	41%	34%	100%

Source: Reproduced from *Staff in Australia's Schools 2010: Main Report on the survey* (McKenzie, et al., 2011), Table A.5.12, p. 171

Note: Early career teachers were defined as those who had been teaching for five years or less (24.8% of primary teacher respondents). The items are ordered in terms of the proportions who responded 'very helpful'. The figures reported in this table are estimates of population values obtained from the SiAS sample. Each should be seen as an estimate, not as an exact measure of the population that it represents. The figures have been rounded from the original to whole numbers.

Table A. 7. Destinations of teacher education bachelors graduates, 2008

	Teacher education nec	Teacher education: early childhood	Teacher education: primary	Teacher education: secondary
Of total: **% in full time employment**	61%	51%	63%	65%
Of those in full time employment:				
% working in schools	83%	59%	88%	87%
Of those working in schools:				
% working in public schools	72%	59%	68%	69%
% working in private schools	28%	41%	32%	31%
Of total:				
% seeking full time employment	15%	13%	14%	12%
% in labour force, not seeking full time employment	16%	19%	12%	11%
% in further study	4%	6%	4%	6%
% unavailable for work or study, or destination unknown	4%	6%	7%	6%
Total number	589	1 061	3 030	1 421

Source: CGA custom data

Note: Australian citizens and permanent residents only.

Those not in full time work but in the labour force (that is, part time or casual employment, whether or not seeking full time work) may be employed as teachers in schools.

Custom data for 2011 was not able to be obtained within the timeline of this project.

Table A. 8. Award course completions for all students in the FOE of Education by level of course, 2011

Level of Course	All	Post-graduate	Post-graduate possible initial teacher education	Post-graduate non-research	Under-graduate likely initial teacher education
Higher Doctorate	< 5				
Doctorate by Research	376	376			
Master's by Research	83	83			
Master's by Coursework	6 676	6 676	6 676	6 676	
Grad.(Post) Dip. - new area	5 986	5 986	5 986	5 986	
Grad.(Post) Dip. - ext area	736	736		736	
Graduate Certificate	2 502	2 502		2 502	
Bachelor's Graduate Entry	733	733	733	733	
Bachelor's Honours	177				177
Bachelor's Pass	10 645				10 645
Associate Degree	68				
Advanced Diploma (AQF)	63				
Diploma (AQF)	12				
Other undergraduate award courses	< 5				
TOTAL	**28 069**	**17 092**	**13 395**	**16 633**	**10 822**

Source: Australian Government Department of Industry Innovation Science Research and Tertiary Education (DIISRTE), *Award course completions 2011: selected higher education statistics tables* (2012a), Table 6, 'Award Course Completions for All Students by Level of Course and Broad Field of Education, 2011'

Table A. 9. Initial teacher education commencements, enrolments and completions, by sex, citizenship, mode of study, type of attendance and state, 2011 and percentage change 2010-2011

	Commencements			Enrolments			Completions
	All	Domestic	% Internat	All	Domestic	% Internat	All
Males	6 810	6 555	3.7%	17 338	16 863	2.7%	-
Females	21 393	20 424	4.5%	57 153	55 229	3.4%	-
Internal	20 554	19 480	5.2%	51 948	49 904	3.9%	11 841
External	5 055	4 962	1.8%	12 520	12 295	1.8%	2 196
Multi-modal	2 594	2 537	2.2%	10 023	9 893	1.3%	2 496
Full-time	23 040	21 872	5.1%	59 204	56 996	3.7%	12 843
Part-time	5 163	5 107	1.1%	15 287	15 096	1.2%	3 690
NSW	9 247	8 828	4.5%	24 920	24 081	3.4%	5 486
Vic	5 550	5 326	4.0%	13 745	13 273	3.4%	3 602
Qld	4 295	4 057	5.5%	11 208	10 813	3.5%	2 542
WA	2 983	2 859	4.2%	9 086	8 879	2.3%	1 666
SA	1 802	1 754	2.7%	5 191	5 073	2.3%	1 116
Tas	832	820	1.4%	1 742	1 715	1.5%	225
NT	804	787	2.1%	1 623	1 598	1.5%	398
ACT	545	531	2.6%	1 420	1 397	1.6%	277
Multi-State*	2 145	2 017	6.0%	5 556	5 263	5.3%	1 221
TOTAL 2011	**28 203**	**26 979**	**4.3%**	**74 491**	**72 092**	**3.2%**	**16 533**
Total 2010	*28 640*	*27 379*	*4.4%*	*72 808*	*70 418*	*3.3%*	*17 392*
% change 2010 to 2011	*-1.53%*	*-1.46%*		*2.3%*	*2.4%*		*-4.9%*

Source: Australian Government Department of Industry Innovation Science Research and Tertiary Education (DIISRTE), *Award course completions 2011: selected higher education statistics tables* (2012a), Tables 19, 20 & 21; Australian Government Department of Industry Innovation Science Research and Tertiary Education (DIISRTE) Full Year Tables *: selected higher education statistics tables, Section 8, Special Courses* (2012c), Tables 8.1, 8.2, 8.3, 8.4 and 8.5.

* Multi-State is the Australian Catholic University, which has initial teacher education programs in Victoria, Queensland, New South Wales and the Australian Capital Territory.

Table A. 10. Initial teacher education undergraduate and postgraduate commencements and completions, by level of schooling specialisation and citizenship, 2011 and percentage change 2001-2011

	2011			Change 2001 – 2011		
	Domestic	International	All	Domestic	International	All
Undergraduate Commencements						
Early childhood	3 411	144	3 555	40%	132%	43%
Primary	7 105	297	7 402	-1%	291%	2%
Secondary	4 911	50	4 961	39%	-14%	38%
Teacher edn nec	3 562	73	3 635	-10%	-28%	-10%
TOTAL	**18 982**	**564**	**19 546**	**11%**	**89%**	**13%**
Undergraduate Completions						
Early childhood	1 482	59	1 541	19%	247%	22%
Primary	3 773	287	4 060	-7%	567%	-1%
Secondary	2 210	19	2 229	30%	-59%	28%
Teacher edn nec	2 187	28	2 215	2%	-51%	0%
TOTAL	**9 651**	**393**	**10 044**	**6%**	**141%**	**8%**
Post-graduate Commencements						
Early childhood	241	74	315	168%	-	250%
Primary	2 032	140	2 172	290%	289%	290%
Secondary	3 357	355	3 712	23%	473%	33%
Teacher edn nec	2 367	91	2 458	346%	-	363%
TOTAL	**7 997**	**660**	**8 657**	**107%**	**206%**	**112%**
Post-graduate Completions						
Early childhood	125	38	163	76%	660%	114%
Primary	1 706	145	1 851	247%	368%	254%
Secondary	2 702	334	3 036	22%	496%	33%
Teacher edn nec	1 356	83	1 439	59%	5%	54%
TOTAL	**5 889**	**600**	**6 489**	**62%**	**251%**	**70%**
Total commencements	**26 986**	**1 224**	**28 210**	**29%**	**138%**	**31%**
Total completions	**15 541**	**993**	**16 534**	**22%**	**197%**	**26%**

Source: DIISRTE Higher Education Statistics custom data

Table A. 11. Total initial teacher education commencements and completions, by level of schooling specialisation and citizenship, 2011 and percentage change 2001-2011

	2011			Change 2001 – 2011		
	Domestic	**International**	**All**	**Domestic**	**International**	**All**
Commencements						
Early childhood	3 652	218	3 870	45%		50%
Primary	9 137	437	9 574	19%	290%	23%
Secondary	8 268	405	8 673	32%	238%	36%
Teacher edn nec	5 929	164	6 093	32%		33%
TOTAL	26 986	1 224	28 210	29%	138%	31%
Completions						
Early childhood	1 607	97	1 704	22%	341%	28%
Primary	5 479	432	5 911	21%	484%	28%
Secondary	4 912	353	5 265	25%	246%	31%
Teacher edn nec	3 543	111	3 654	18%	-18%	16%
TOTAL	15 541	993	16 534	22%	197%	26%

Source: DIISRTE Higher Education Statistics custom data

Table A. 12. Initial teacher education undergraduate and postgraduate completions, by level of schooling specialisation, by age range, number and %, 2011

	<25	25-29	30-34	35-39	40-50	50+	TOTAL
Undergraduate completions							
Early childhood	813	282	128	128	145	41	1 537
	53%	18%	8%	8%	9%	3%	100%
Primary	2 802	541	215	216	265	21	4 060
	69%	13%	5%	5%	7%	1%	100%
Secondary	1 688	276	88	77	84	16	2 229
	76%	12%	4%	3%	4%	1%	100%
Teacher edn nec	1 391	278	99	126	166	58	2 118
	66%	13%	5%	6%	8%	3%	100%
TOTAL	6 693	1 377	574	547	717	136	10 044
	67%	14%	6%	5%	7%	1%	100%
Post-graduate completions							
Early childhood	42	45	0	23	28	5	143
	29%	31%	0%	16%	20%	3%	100%
Primary	728	516	231	148	176	20	1 819
	40%	28%	13%	8%	10%	1%	100%
Secondary	1 404	696	323	221	322	70	3 036
	46%	23%	11%	7%	11%	2%	100%
Teacher edn nec	288	253	70	211	232	21	1 075
	27%	24%	7%	20%	22%	2%	100%
TOTAL	2 542	1 602	802	635	758	150	6 489
	39%	25%	12%	10%	12%	2%	100%
Total completions							
	9 235	2 979	1 376	1 182	1 475	286	16 533
	56%	18%	8%	7%	9%	2%	100%

Source: DIISRTE Higher Education Statistics custom data

Table A. 13. Indigenous initial teacher education undergraduate and postgraduate commencements and completions, by level of schooling specialisation, number and % of all students, 2011

	Commencements			Completions	
	Number	% of all students		Number	% of all students
Undergraduate					
Early childhood	80	2.3%		32	2.1%
Primary	163	2.2%		73	1.8%
Secondary	94	1.9%		19	0.9%
Teacher edn nec	98	2.7%		64	2.9%
TOTAL	435	2.2%		188	1.9%
Post graduate					
Early childhood	<5	<1.6%		<5	<3.1%
Primary	12	0.6%		10	0.5%
Secondary	18	0.5%		11	0.4%
Teacher edn nec	np	-		np	-
TOTAL	51	0.6%		31	0.5%
TOTAL	**486**	**1.7%**		**219**	**1.3%**

Source: DIISRTE Higher Education Statistics custom data

Table A. 14. Number of school teachers, number of initial teacher education completions, and training rates, 2001 and 2011

	2001	2011	% change 2001-2011
Number of school teachers	249 629	290 854	16.5%
Number of initial teacher education completions	13 110	16 533	26.1%
Training rate	5.25%	5.68%	-

Source: Teacher numbers from Australian Bureau of Statistics*, Schools, Australia, 2011*, Catalogue Number 4221.0 (Australian Bureau of Statistics, 2012). This dataset understates the number of teachers (those on leave as well as those actively teaching in schools) by up to around 10%. Initial teacher education completion numbers from Table A. 2.

Table A. 15. Persons with school teaching qualifications, employed as a school teacher, by age, labour force status, and as a percentage of those employed in any occupation, 2006 and 2011

	2006			2011		
	Part-time	Full-time	Total employed	Part-time	Full-time	Total employed
Number employed as teachers						
20-24	2 728	9 341	12 069	2 933	9 592	12 525
25-29	5 409	21 739	27 148	6 617	25 599	32 216
30-34	7 707	17 655	25 362	9 517	20 420	29 937
Labour force status as % of total employed teachers						
20-24	23%	77%	100%	23%	77%	100%
25-29	20%	80%	100%	21%	79%	100%
30-34	30%	70%	100%	32%	68%	100%
Teaching as % of all persons with teaching qualifications employed in any occupation						
20-24	50%	75%	67%	50%	77%	68%
25-29	58%	75%	71%	57%	75%	71%
30-34	52%	65%	60%	58%	69%	65%
Change from 2006 to 2011						
	Number with teaching qualifications employed in any occupation			**Number with teaching qualifications employed as teachers**		
	Part-time	**Full-time**	**Total employed**	**Part-time**	**Full-time**	**Total employed**
20-24	8%	0%	2%	8%	3%	4%
25-29	25%	18%	20%	22%	18%	19%
30-34	11%	10%	10%	23%	16%	18%

Source: ABS 2006 and 2011 Censuses, accessed via ABS TableBuilder.

Note: Original statistics for those with teaching qualifications employed in any occupation are not included in this table.

The *School Teaching* qualification is a highest qualification in the ASCED FOE of 'Education' (07), excluding teacher education in VET (070109) and higher education (070111), and nursing education teacher training (070117).

The occupation of *School Teachers* is Australian and New Zealand Standard Classification of Occupations (ANZSCO) (Australian Bureau of Statistics, 2009) categories: 'School Principals' (1343) and 'School Teachers' (241) excluding 'Early Childhood (Pre-primary) Teachers' (2412).

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