Longitudinal Teacher Education and Workforce Study (LTEWS) Final Report November 2013

MAIN REPORT

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Studying the Effectiveness of Teacher Education (SETE) project

The Longitudinal Teacher Education and Workforce Study (LTEWS) was funded by the former Department of Education, Employment and Workplace Relations (DEEWR). This report also includes findings generated as part of the Studying the Effectiveness of Teacher Education (SETE) project that is focused on early career teachers in Queensland and Victoria. The SETE research is supported by the Australian Research Council (Project LP110100003) and the Victorian Department of Education and Early Childhood Development (DEECD), the Queensland Department of Education, Training and Employment (QDETE), the Victorian Institute of Teaching (VIT), and the Queensland College of Teachers (QCT). The SETE research team is Diane Mayer (Victoria University), Brenton Doecke (Deakin University), Mary Dixon (Deakin University), Alex Kostogriz (Deakin University), Andrea Allard (Deakin University), Simone White (Monash University), Bernadette Walker-Gibbs (Deakin University), Leonie Rowan (Griffith University), Claire Wyatt-Smith (Griffith University), Richard Bates (Deakin University), Jodie Kline (Deakin University), and Phillipa Hodder (Deakin University).

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Executive Summary

The *Longitudinal Teacher Education Workforce Study* (LTEWS) investigated the career progression of graduate teachers from teacher education into teaching employment in all states and territories across Australia in 2012 and the first half of 2013, and tracked their perceptions, over time, of the relevance and effectiveness of their teacher education programs. Specifically, it investigated:

- The career progression of the 2011 teacher education graduates from teacher education into, and possible exit from, teaching employment, including their utilisation into teaching, their retention and attrition in teaching in their early years, and their geographic and schools sector mobility; and,
- The views of teacher education graduates over time on the relevance and effectiveness of their teacher education for their teaching employment, including the relationship between their views of their teacher education and their early career teaching career.

LTEWS was conducted concurrently with the *Studying the Effectiveness of Teacher Education* (SETE) project, which is a three-year project investigating these issues in Queensland and Victoria. SETE is funded by the Australian Research Council, the Victorian Department of Education and Early Childhood Development (DEECD), the Queensland Department of Education, Training and Employment (QDETE), the Victorian Institute of Teaching (VIT), and the Queensland College of Teachers (QCT). LTEWS focused on data collection in states and territories other than Queensland and Victoria. The findings from the SETE study were incorporated with the LTEWS findings to provide a national data set.

First, initial teacher education programs across Australia were mapped between late 2011 and early 2012, providing a point-in-time review of the initial teacher education programs relevant for the 2011 graduate teacher cohort being tracked. Programs were mapped in relation to: length, structure and delivery; professional experience; content and approaches; integration of theory and practice; and measures of entry into programs (see Appendix 1 for the full report of the mapping and section 4.1 of this report for a summary of the findings). The major purpose of the mapping was cross-tabulation in the analysis of graduates' preparedness to teach and their career decisions. However, a snapshot of teacher education in Australia in 2011/ 2012 includes the following:

- Of the 551 initial teacher education programs offered across Australia (across 103 campuses), 397 were bachelor's degrees (72 per cent), 96 were graduate diplomas/postgraduate diplomas (17 per cent) and 58 were masters degrees (11 per cent).
- The programs ranged in length from 1-5 years. A majority of undergraduate teacher education programs were offered over four-years or part-time equivalent (63 per cent). Postgraduate programs were generally offered over 1-2 years, with masters programs commonly two years of study (or equivalent) and graduate diplomas one year. Graduate entry bachelor degrees were 1.5 or 2 years duration and postgraduate diplomas were sometimes offered as an early exit qualification from a masters degree.
- Based on 497 responses, 75 per cent of programs were offered in full-time mode with part time options, while 14 per cent were offered in external/distance modes.
- Based on 457 programs, over 50 per cent (n=248) said they offered practicum days in excess of teacher regulatory authority minimum requirements. This finding must be treated with caution given the variation in professional experience nomenclature across Australia.

- Over 43 per cent of the programs included internships as part of the professional experience. Internships were more likely to be available to pre-service teachers enrolled in bachelor's degrees than in graduate diploma or masters programs. Internships were usually 6-10 weeks in duration and usually followed completion of the minimum number of practicum days required for registration. However, because of the different ways in which the term 'internship' was used, definitive conclusions about internships across programs was difficult.
- Many teacher education programs included study in the preparation to teach culturally, linguistically and socio-economically diverse learners. Some programs had stand-alone units, while others integrated these aspects across their programs.
- Preparation to teach literacy and numeracy is a key requirement for teacher education program accreditation to ensure that pre-service teachers are competent to meet the literacy demands of the curriculum areas they teach. There is also recognition that graduate teachers need to possess a high level of personal literacy and numeracy.
- The ways in which teacher education programs helped pre-service teachers make theory-practice links varied in structure and approach. Some institutions incorporated professional placement within curriculum and educational studies units, while other institutions focused on key teaching and learning aspects (e.g. classroom management) during a specific professional experience period.
- The Australian Tertiary Admission Rank (ATAR) and results of pre-requisite Year 12 subjects were usually used as the basis for selection of school leavers into undergraduate programs.
- Providers reported valuing pre-service teachers who possessed personal values and attitudes appropriate to the discipline and/or profession as well as high levels of intellectual curiosity and critical thinking. In addition, they reported valuing pre-service teachers who demonstrated a commitment to ethical and sustainable practices, a commitment to the profession and effective communication including the use of ICTs.

The study utilised a mixed-method approach using quantitative and qualitative data collection methods including three rounds of Graduate Teacher Surveys and Principal Surveys and interviews with graduate teachers. The Graduate Teacher Survey data were analysed in two ways: firstly as three separate snapshots over the 18 months that LTEWS was funded (March 2012, October 2012, March 2013); and, secondly from a longitudinal perspective on graduate teachers who were followed across this time period. The findings are also informed by the interview data collected between May 2012 and May 2013 after each survey round.

Responses to the Graduate Teacher Surveys were low. For the three rounds, response rates ranged between 8.3 per cent and 16.7 per cent when compared to national initial teacher education award course completion data. Across the rounds, between 87 and 91 per cent of the returned surveys were completed and able to be used in the analysis. In the absence of comprehensive data about the research population, an indication of sample representativeness is provided by comparing the distribution of the LTEWS cohorts to existing collections including Department of Industry, Innovation, Science, Research and Tertiary Education higher education statistics (2011), data collected for the Staff in Australia's Schools survey 2010 (McKenzie, Rowley, Weldon, & Murphy, 2011) and Australian Bureau of Statistics Census (2011a) and Australian Bureau of Statistics, Schools Australia (2011b). The results report response frequencies alongside valid percentages to enable the reader to consider margins of error when interpreting the data. Concerns about data quality are few in number and are highlighted in the relevant sections to ensure that these findings are read with caution. Specifically, on occasions where participant demographics, such as school location, were used as a filter for analyses, consideration must be given to standard

error. In almost all instances in which there were small numbers of respondents for sub-groups, the proportions were consistent with what would be expected for the population.

The average age of the 2011 graduate teacher respondents early in their first year after graduation was 32 years, with 53 per cent under 30 years of age and 81 per cent female. Eighty-six per cent came from English-speaking backgrounds, 1 per cent identified as Aboriginal or Torres Strait Islander, and 42 per cent identified as the first in their immediate family to gain a tertiary qualification. Fifty-two per cent had graduated from a graduate entry teacher education qualification (including 12 per cent from masters programs), while 46 per cent had graduated with a four-year undergraduate bachelor's degree. The majority were qualified to teach secondary school (44 per cent) and primary school (37 per cent). More than three-quarters had completed their teacher preparation in Victoria (29 per cent), Queensland (24 per cent) and New South Wales (23 per cent).

Key Findings

Key findings relate to the two main areas of investigation in the project:

- Teacher education relevance and quality; and,
- Employment and career progression.

Teacher education relevance and quality

Teacher graduates – Views of their teacher education programs

1. When asked about features of their teacher preparation programs that set them apart from other programs, more than half of the graduates noted reflective practice (64 per cent), quality teaching (53 per cent), and literacy (51 per cent) as distinguishing features of their program. These three features were the same for all three program types – bachelor, graduate diploma and masters. Less than a third noted social relationships, catering for cultural and linguistically diverse learners, school linkages, team teaching and discipline expertise. Teacher education providers gave similar rankings.

2. Over 75 per cent of new graduates who had gained employment as a teacher would recommend their teacher education program to someone else, while two-thirds of new graduates who had not been successful in gaining employment as a teacher would recommend their teacher education program. Graduate teachers with a teaching position were more positive about their initial teacher education than those without a teaching position.

3. More than 83 per cent of graduates undertook some of their practicum in one or more weekly blocks. Both graduates and principals valued extended practicums including internships, citing that the extended length of practice allowed deeper connections to schools and classrooms. Graduate teachers' and principals' responses highlighted the value of the teacher education program including a combination of 1 to 2 days per week and block placements of 5 weeks duration, and then internships in the final part of the program.

4. Graduates expressed the need for stronger linkages between content, theory and application in schools, supported by strong school-university partnerships. Interview comments indicated preference for more

quality practicum experiences in different school settings, including professional learning conversations with supervisors and mentors from universities and schools.

Teacher graduates – Impact of teacher education on their current teaching

5. Nearly all graduates with a teaching position agreed that the skills they developed during the practicum were important and that the practicum prepared them for their current teaching context, irrespective of the ways in which it was structured – days per week or blocks.

6. The type of practicum that graduates experienced in their programs did not appear to be related to the perceptions of graduates who were teaching about their effectiveness as a teacher.

7. New graduates with a teaching position agreed that the knowledge gained from the university-based component of their teacher education program was important (75-79 per cent) and helped prepare them for their teaching context (65-61 per cent).

    7.1. At the end of the first year after graduation, there was a significant difference in this respect between graduates with masters and graduate diploma degrees, with masters students more likely to agree that the knowledge gained through university-based units was important and helped prepare them for their current teaching context.

8. The Australian Professional Standards for Teachers in which more than 75 per cent of graduate teachers felt well prepared by their teacher education programs included 'Engage in professional learning' (89 per cent agreement in Round 1), 'Know students and how they learn' (78 per cent in Round 2) and 'Plan for and implement effective teaching and learning' (76 per cent in Round 2).

    8.1. Regardless of teacher education program, graduates felt least prepared to ‘Engage professionally with colleagues, parents/carers and the community’ and to ‘Assess, provide feedback and report on student learning’. Overall, less than half of the graduate teachers considered they were well prepared to ‘Engage professionally with colleagues, parents/carers and the community’. This was corroborated by the principals who highlighted engagement with parents, families and communities as one of the key challenges for beginning teachers

    8.2. Graduates who had completed a graduate diploma felt less prepared to 'Know students and how they learn' and 'Know the content and how to teach it', while graduates with a masters degree felt better prepared to 'Know the content and how to teach it' and ‘Assess, provide feedback and report on student learning’.

9. More than 80 per cent of graduate teachers felt effective in all of the Australian Professional Standards for Teachers. They rated themselves highly effective in the areas of:
    - ‘Know students and how they learn’
    - ‘Know the content and how to teach it’
    - ‘Plan for and implement effective teaching and learning’
    - ‘Create and maintain supportive and safe learning environments’

10. More graduates considered that they were more effective in teaching in relation to the Australian Professional Standards for Teachers than they had been prepared in these areas. The key areas with the largest difference

between perceptions of being prepared and perceptions of being effective were 'Engage professionally with colleagues, parents/carers and the community' in Rounds 2 and 3, and 'Know the content and how to teach it' in Round 3.

11. With respect to the other three teaching areas other than the Australian Professional Standards that were investigated, only about half of the graduate teachers felt well prepared to 'Teach culturally, linguistically and socio-economically diverse learners', with slightly more feeling well prepared in the 'Use of ICT' and 'Literacy and Numeracy'. Preparedness in these areas was rated lower than for the Australian Professional Standards for Teachers. It is noteworthy, however, that in surveys and interviews graduates recorded experiencing significant professional learning in 'Teaching culturally, linguistically and socio-economically diverse learners' during their first year of employment.

12. As with responses regarding the professional standards, graduates considered that they were more effective in teaching than their sense of preparedness in relation to the three other specified areas of 'Teaching culturally, linguistically and socio-economically diverse learners', 'Use of ICT' and 'Literacy and numeracy'. More than 70 per cent of the graduates considered that they were effective in these specified areas.

Views of their current school principals

13. Principals generally endorsed the assessments of teacher graduates about their effectiveness in relation to the Australian Professional Standards for Teachers, but principals had more positive perceptions of the effectiveness of graduates than the graduates themselves to 'Plan for and implement effective teaching and learning'.

14. Amongst the key challenges faced by newly employed graduate teachers, principals identified classroom management, pedagogy and catering for diverse learners as the most significant challenges.

15. Principals identified poor teaching skills and classroom management as the most common cause of a difficult transition into teaching. However, they noted lack of school support and induction, lack of interpersonal/communication skills, and lack of adequate teacher preparation as also contributing to this transition.

16. Principals reported that the most common form of school support provided to new graduate teachers was ongoing professional learning opportunities. Graduates considered this type of support was the most effective to them as an early career teacher, followed by an informal mentor arrangement. However, it is also worth noting that while more than 97 per cent of principals identified induction programs as available in their schools at all three survey points, 20-26 per cent of graduate teachers identified this as not available at the same points in time.

Entry into teacher education:

17. Forty-two per cent of graduate respondents identified as the first in their family to gain a tertiary qualification.

18. Based on age analysis, 70-78 per cent of graduates did not enter their teaching education programs directly from secondary school. A majority of graduates had prior academic or trade qualifications before entering their teacher education program. About 60 per cent of those with prior qualifications held bachelor degrees

and 11-12 per cent held postgraduate qualifications. More secondary graduates had prior qualifications than those in primary or early childhood.

19. The Australian Tertiary Assessment Rank (ATAR) as a measure of entry is relevant for a relatively small percentage of those entering teacher education – school leavers commencing undergraduate programs. The initial teacher education mapping component of this study shows that teacher education providers use additional measures for program entry including prior qualifications, interviews, portfolios, auditions, character references, residential location, social economic status (SES) and evidence of prior learning (see Appendix 1).

Employment and career progression

20. Graduates wanted a teaching career for altruistic reasons. Approximately 90 per cent of the graduate teachers joined teaching 'wanting to make a difference' and more than 70 per cent indicated that they 'Always wanted to teach/work with children'. About 70 per cent also highlighted that they wanted to work in their areas of specialisation or interest. Very few saw teaching as a 'backup plan' or entered teacher education just because their ATAR score was sufficient.

21. A majority of graduates moved into teacher employment after graduation. The percentage of the population early in the first year after graduation was 74 per cent, increasing to 84 per cent early in the second year.

22. Of those graduates who were not teaching at the end of the survey period:
    - nearly all had other employment. Of these, 40 per cent had a non-teaching position elsewhere in the education sector; and
    - nearly two thirds were still seeking a teaching position and only 11 per cent had no intention of seeking such a position sometime in the future

23. Of those graduates with a specialist teaching qualification, more than three-quarters reported that they were teaching in at least one of their area of specialisation.

    23.1. High proportions of special needs, mathematics, English, technology, science, and languages other than English (LOTE) teachers were teaching in their area of specialisation.

    23.2. Graduate teachers with specialist qualifications in society and the environment, the arts and health and physical education were least likely to be teaching in their specialist areas and therefore more likely to be teaching out-of-field.

24. In total, nearly two-thirds of graduates commenced teaching in a full time position. Fewer than 20 per cent of graduates had commenced teaching on a permanent basis, with just over 20 per cent commencing on a casual basis. Over 55 per cent of graduates were on contract, either full or part-time and 46 per cent of the contract positions were reported as full-time employment.

    24.1. There was some improvement towards more stable employment over the year after graduation with an increase in permanent employment to more than one third early in the second year, as well as a reduction in contract and casual employment. The proportion in a full-time position increased to nearly three quarters (34 per cent permanent, 38 per cent contract).

24.2. Of those who were in part-time contract or casual employment in their first year, approximately half of them remained employed in this capacity in their second year of employment. Approximately 30 per cent of graduates were in part-time contract or casual employment by their second year of employment.

24.3. Teacher interviews indicated that:

24.3.1. Casual or relief employment was a factor hindering career progression and professional learning and development.

24.3.2. Those with a full-time position reported qualitatively that greater classroom experience supported them to be more effective in the classroom.

25. Attrition of graduates from teaching (i.e. leaving/ not continuing in a teaching position) was 7 per cent over the data collection period.

25.1. Attrition was higher than average in schools in outer regional and very remote areas but lower than average for Aboriginal and Torres Strait Islander focus schools.

25.2. In terms of schooling level, the highest attrition rate was in secondary schools

26. Many new graduates stayed to teach in the state or territory in which they completed their teacher preparation program.

26.1. About a third were teaching in schools in areas where they had lived prior to their teacher preparation, and about two thirds were teaching in schools located in areas similar in socio-economic and cultural diversity to those in which they lived prior to their teacher preparation.

26.2. A majority (almost 60 per cent) stayed teaching in their initial school over the survey period. A fifth changed school, with a preference for more stable employment being the main reason for doing so. Other reasons evidenced from the free text survey data included lack of support in their initial school and family or personal reasons.

27. Three-quarters of principals agreed that they liked to employ graduate teachers, often citing their desirable personal attributes such as enthusiasm, energy, passion for teaching and willingness to learn. In survey free text responses, principals indicated that employing graduates was their professional responsibility to help build the next generation of teachers.

28. According to principals, schools were attractive to new graduates when they offered better location and accessibility, reputation for performance or use of technologies, newer facilities, and partnership arrangements with universities.

29. More than 82 per cent principals planned to keep some or all of their graduate teachers. Less than 11 per cent stated that they would not wish to continue to employ them.

30. Most new graduates who were teaching remained committed to their career over the next three years (whether teaching or in a school leadership position) and to remaining in the education sector. The percentage

who saw themselves as a teacher in a school in three years' time decreased from 71 per cent to 64 per cent during the data collection period. This is partly accounted for by the number of these teachers who intended to seek school leadership positions (an increase from 10 to 14 per cent). Very few (7 per cent) planned to leave the education sector altogether during that time.

30.1. Slightly fewer graduates with masters or graduate diploma qualifications saw themselves teaching in three years' time and a higher percentage with masters degrees saw themselves in an education policy or research position in the future.

30.2. Secondary teacher graduates saw themselves as less likely to be teaching in three years' time and more likely to be in leadership positions, when compared to early childhood or primary teachers.

30.3. The greatest influence on plans for the future was whether or not graduates had a teaching position during the time of the survey. Graduates who had a teaching position were more likely to see themselves teaching in three years' time than graduates without a teaching position. This was evident for all three rounds.

31. Employment outside teaching rose significantly in the first year after graduation. In particular, the data show that graduates with masters degrees taking employment outside teaching almost doubled over this period (from 32 to 61 per cent).

Thus, the *Longitudinal Teacher Education Workforce Study* (LTEWS) provides a comprehensive picture of graduate teachers' and principals' perceptions on the relevance and quality of teacher education, and also graduates' employment as new teachers and their career progression during the first year and a half after graduation. Considerations for improving teacher education can be drawn in relation to: selection into teacher education; length and level of the qualification; content, foci and features of effective programs; and, effective practicum, internships, and partnerships. Consistent with the LTEWS brief to also investigate beginning teaching and career progression, the findings highlight a continuum of learning to teach involving pre-service teacher education, induction into the profession and then ongoing professional learning and development. This underpins the importance of teacher education providers, regulatory authorities and employers working together in relation to supply and demand issues as well as in determining specific knowledge and skills for highly effective beginning teaching that provides a foundation for ongoing learning and professional growth. Further longitudinal large-scale mixed-methods research building on LTEWS methodologies and findings and incorporating the Productivity Commission (2012) recommendations will contribute in a valuable and ongoing way to our collective knowledge base on effective teacher education and transition into the profession.

1. Introduction

Teacher education quality has become a hallmark of education reforms in many countries around the world (Schleicher, 2011). The Global Education Reform Movement (Sahlberg, 2011) recognizes a key role of teachers in improving outcomes for children and young people in the increasingly competitive and globalized world. The reforms seek to create world-class education systems in which the quality of student learning would essentially rest on the quality of teachers. Recognizing the relationship between teaching quality and learning excellence, teacher preparation and its effectiveness have received an unprecedented attention both from policy-makers and educational researchers in the last two decades (Darling-Hammond & Bransford, 2005). In particular, policy-makers have concentrated on policy settings in order to improve the preparation of graduate teachers, as well as increasing the productivity of the existing teaching workforce and its participation in educational reforms (Schleicher, 2011). Educational researchers, in their turn, have focused on how teachers learn and develop and on how effectively education programs can enable teachers to acquire the professional knowledge, skills and dispositions that allow them to succeed.

As a result of the cooperation between policy-makers and educational researchers, numerous international reports on teacher education and effective teaching practices have been published (Organization for Economic Cooperation & Development (OECD), 2005, 2009). Other reports and reviews have covered various aspects of teacher preparation programs and their effects on the quality of the teaching workforce (D. Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006; Cochran-Smith & Zeichner, 2005; Darling-Hammond et al., 2005; Grossman, 2005; Wilson, Floden, & Ferrini-Mundy, 2001). This international research has provided some answers to the pressing questions about initial teacher education, examining relationships between teacher attributes and student outcomes (D. Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2008; Darling-Hammond, 2009; Rivkin & Hanushek, 2005). This type of inquiry has also revealed that it is not possible to investigate issues about the value and effectiveness of teacher preparation without conceptualising it within a 'learning to teach' continuum and the prospect of ongoing professional growth. For example, the longitudinal study by Brouwer and Korthagen (2005) demonstrated that variables relating to school context had a larger impact on the formation of new teachers than the program effects. In the UK, the *Becoming a Teacher* (BaT) study (Hobson et al., 2009), a six-year longitudinal research project (2003-2009), similarly found the crucial importance of the school context with respect to the graduates' capacity to engage in ongoing professional learning.

In this regard, international research into teacher education has demonstrated that there is no clear consensus on how best to prepare graduate teachers for work. It appears that the determinants of teacher quality should be perceived relationally. That is, the effectiveness of beginning teachers should be linked to their employment conditions and teacher preparation should be connected to other determinants of teaching quality such as improved recruitment and incentive structures, making teaching a more attractive profession, better in-service teacher development and career progression (Schleicher, 2011). From this perspective, the quality of teaching is considered as the relationship between teacher education and teacher productivity or as a nexus between the teacher experiences of professional learning and the conditions of their work in schools.

Reflecting international debates about the utility of teacher education, the quality of initial teacher preparation in Australia is a matter of ongoing concern. There have been more than 100 government inquiries of various types into teacher education since 1979 (e.g. Caldwell & Sutton, 2010; Education and Training Committee, 2005; House of Representatives Standing Committee on Education and Vocational Training, 2007; Productivity Commission, 2012; Ramsey, 2000). More than 400 teacher education programs are currently offered across Australia,

graduating about 17,000 teachers each year. Eighty-one per cent of all the programs are offered in public universities. Recently, some private institutions as well as some state funded institutions of further education have been accredited to offer teacher preparation – often in early childhood education. Teachers are prepared in multiple study pathways including: (i) four-year undergraduate Bachelor of Education degrees, (ii) four-year double degrees comprising a degree in the subject discipline area and a degree in education, and (iii) one-year Graduate Diploma in Education or two-year Master of Teaching degrees after an initial three-year bachelor's degree in a discipline other than education. From 2013, all graduate teacher education programs must be two years in length in order to be accredited (Australian Institute of Teaching and School Leadership, 2011a). Most pre-service teachers are 'Commonwealth supported' under the Higher Education Contribution Scheme (HECS).

Initial teacher education programs aim to prepare teachers with the knowledge and skills to begin teaching in today's rapidly changing contexts. The Organisation for Economic Co-operation and Development Report (OECD), *Preparing Teachers and Developing Leaders,* highlights what it takes to be teacher:

> … the kind of education needed today requires teachers to be high-level knowledge workers who constantly advance their own professional knowledge as well as that of their profession. Teachers need to be agents of innovation not least because innovation is critically important for generating new sources of growth through improved efficiency and productivity. This is also true in the education sector, where innovation applied to both curricula and teaching methods can help to improve learning outcomes and prepare students for the rapidly changing demands of the 21st-century labour market. (Schleicher 2012, p.36)

In the pursuit of a high quality teaching workforce, teacher education has been the subject of changing state and federal policy reforms. The Australian Government's *Smarter Schools – Improving Teacher Quality National Partnership* (TQNP) program provided $550 million over five years to drive a broad range of agendas designed to improve the quality of teaching and teacher education, including:

- attracting the best graduates to teaching through additional pathways into teaching;
- improving the quality and consistency of teacher training in partnership with universities;
- developing the Australian Professional Standards for Teachers to promote excellence in the profession, including requirements for teachers to have knowledge and understanding of the learning needs of Indigenous students;
- national consistency in the registration of teachers to support improved mobility in the teaching workforce;
- developing and enhancing the skills and knowledge of teachers and school leaders through improved performance management and professional learning;
- increasing retention through improved in-school support and rewarding quality teachers and school leaders in rural/remote and hard-to-staff schools; and,
- improving the quality and availability of teacher workforce data.

The TQNP reform agenda has so far resulted in the introduction of alternative or employment based pathways into teaching such as Teach for Australia and Teach Next, and the establishment School Centres for Teaching Excellence (SCTE). In addition, the Australian Institute for Teaching and School Leadership (AITSL) has been established as a national agency with responsibility for developing and implementing Australian Professional Standards for Teachers (Australian Institute of Teaching and School Leadership, 2011c) and principals (Australian Institute of Teaching and School Leadership, 2011b), and for regulating national accreditation of teacher education programs and teacher registration (Australian Institute of Teaching and School Leadership, 2011a).

1.1 Purpose of the Study

This study, titled the *Longitudinal Teacher Education Workforce Study* (LTEWS), is part of the *Smarter Schools – Improving Teacher Quality National Partnership* (TQNP) initiative. A key goal of the TQNP is to improve the quality and availability of teacher workforce data to better inform workforce planning. Two main priorities associated with this goal are the development of a national teaching workforce dataset and a longitudinal teacher workforce study. The work required for both priorities is being overseen by the Australian Education, Early Childhood Development and Youth Affairs Senior Officials Committee (AEEYSOC) Teaching Workforce Dataset Working Group. LTEWS is the second component of this work.

The purpose of LTEWS was to investigate the career progression of graduate teachers from teacher education into teaching employment in all states and territories across Australia and tracked their perceptions, over time, of the relevance and effectiveness of their teacher education program, specifically:

- Career Progression: Tracking the career progression of the 2011 cohort of teacher education graduates from teacher education into, and possible exit from, teaching employment, including data on their utilisation into teaching, their retention and attrition in teaching in their early years, and their geographic and schools sector mobility.

- Teacher Education Relevance and Quality: The views of teacher education graduates over time on the relevance and effectiveness of their teacher education for their teaching employment, including the relationship between their views of their teacher education and their early career teaching career.

The LTEWS study tracked the perceptions of graduate teachers' level of preparedness and effectiveness in the seven Australian Professional Standards for Teachers (Australian Institute of Teaching and School Leadership, 2011c):

1. Know the students and how they learn
2. Know the content and how to teach it
3. Plan for and implement effective teaching and learning
4. Create and maintain supportive and safe learning environments
5. Assess, provide feedback and report on student learning
6. Engage in professional learning
7. Engage professionally with colleagues, parents/carers and the community

The LTEWS Graduate Teacher Surveys and Principal Surveys included nine other teaching areas that were the themes that had emerged from an extensive review of the research literature, conducted as part of the SETE study. These nine other themes were developed for the purpose of the SETE study. For the LTEWS study, analysis addressed the seven Australian Professional Standards for Teachers and three other key teaching areas specified in the contract:

1. Teaching culturally, linguistically and socio-economically diverse learners
2. Use of information and communications technologies (ICT)
3. Literacy and numeracy

The structure of the surveys recognises the central role of standards in defining what teachers are expected to know and be able to do upon graduation. The perceptions of graduate teachers and principals have provided a comprehensive picture of the effectiveness of teacher preparation programs. The longitudinal aspect of the surveys has offered a perspective on the process of *becoming a professional*, as teachers transition from the in-service education to work. From the point of view of transition, teacher preparedness becomes tantamount to their employability and/or suitability for work in particular contexts. Graduate teacher effectiveness, from the longitudinal perspective, can be perceived as their progressive orientation towards quality teaching – a form of practice that is based on professional knowledge and skills, and constructed from a set of attributes, such as traits, behaviours, abilities or dispositions viewed as relevant to their work in diverse schools.

1.2 Structure of the Main Report

Chapter 2, Methodology reports the research focus of this study and the mixed method design, process, data collection and analysis of the graduate teacher and principal surveys, the mapping of teacher education programs and the graduate teacher interviews. The mapping of Initial Teacher Education Programs provides a point-in-time review of the initial teacher education programs across Australia as relevant for the 2011 graduate cohort of this study.

Chapter 3 presents findings related to the early career progression of graduate teachers who completed their teacher education programs in 2011. Career progression in this study refers to the entry into teacher education and possible exit from, teaching employment, including data on the utilisation of graduate teachers, their retention and attrition in the early years of teaching, and their geographic and schools sector mobility. Incorporated into this chapter of the report are survey data on early career progression, including employment, mobility and retention, with complementary qualitative data from the free text responses and the telephone follow-up interviews. Three rounds of surveys provide data to explore teacher early career pathways and progression. The data is analysed in two ways: firstly as three separate snapshots over the period March 2012 to March 2013; and, secondly from a longitudinal perspective on graduate teachers who were followed across this time period. The findings are also informed by the interview data collected between May 2012 and May 2013 after each survey round.

Chapter 4 reports findings on the relevance and effectiveness of teacher education. It situates itself within the context of ever-changing demands relating to the knowledge and skills of teachers that signals the need to continually review teacher education programs in order to show evidence that programs and procedures are effective and that they stay relevant to current and future needs. The chapter examines the nature of teacher education programs and the influence of the program structures and approaches on graduates' career retention and advancement in the teaching profession. It begins by discussing the impact of teacher education programs on graduates' decisions whether or not to seek teaching employment. This analysis is followed by the investigation of program structures, approaches and content considered by graduates and principals as being effective in preparing teachers for initial employment. These findings are cross-examined with the findings of the initial teacher education mapping in order to develop a sense of how the views of the three groups – graduate teachers, principals, teacher educators – correspond with respect to the purpose of initial teacher education. The chapter proceeds with the detailed discussion of the influence of the teacher education programs on graduates' career retention and advancement. This is done through the examination of the type and measures of entry into teacher education programs and their influence on the graduate career pathway, the relevance and effectiveness of the practicum component, disciplines studied in teacher education programs and taught in schools, and preparation to teach culturally, linguistically and socially diverse learners, ICT and numeracy and literacy.

Chapter 5 provides a summary of the findings discussed in the main report and draws implications for policy and further research. It discusses the broad relevance of findings for teacher education reforms in Australia.

This main report is supported by an Appendices document which includes the Mapping of Initial Teacher Education Programs in Australia in 2011 report, the Graduate Teacher Survey instruments (Rounds 1, 2 and 3), the Principal Survey instruments (Rounds 1, 2 and 3), the teacher interview protocols (Rounds 1, 2 and 3), as well as standard error – margin of error information and information on the analysis of the data including factor analyses on the attraction to teaching scale and the preparation scale.

2. Methodology

LTEWS built on the existing SETE research framework to track 2011 teacher education graduates through a series of three surveys and follow-up telephone interviews over an eighteen-month period (early 2012 to mid-2013), generating data relating to employment of newly-graduated teachers, career trajectories and aspirations, and the impact of initial teacher education on their preparation to teach across key areas. A mapping of initial teacher education programs was also conducted and completed to provide a point-in-time overview of initial teacher education in Australia as relevant for the 2011 graduates.

2.1 Research Focus

The two main research foci of LTEWS were:

i. The career progression of teacher education graduates from teacher education into, and possible exit from, teaching employment, including data on their utilisation into teaching, their retention and attrition in teaching in their early years, and their geographic and schools sector mobility.

ii. The views of teacher education graduates over time on the relevance and effectiveness of their teacher education for their teaching employment, including the relationship between their views of their teacher education and their early career teaching career.

These dimensions overlap:

i. **Career progression** encompasses the retention or attrition of early career teachers, as well as their geographic and school sector mobility within the profession. The data generated in this study provide a complex picture of the various ways in which graduate teachers negotiate the career pathways available to them within the education sector.

ii. **Relevance and effectiveness of teacher education** is both an international as well as a national concern. LTEWS undertakes a national study of all initial teacher education programs, and cross-reference this information with graduate teachers' opinions on their preparation for teaching. This data provides the groundwork for an analysis of the relevance and effectiveness of the teacher education programs currently on offer in Australia.'

The study is significant to the national and international policy and practice contexts of education. The overlap of career progression into teaching and the relevance and effectiveness of teacher education is found in recent policy attention aimed at improving teaching and teaching workforces (e.g. Caldwell & Sutton, 2010; Darling-Hammond, 2013; Organisation for Economic Co-operation and Development (OECD), 2013).

2.2 Research Design

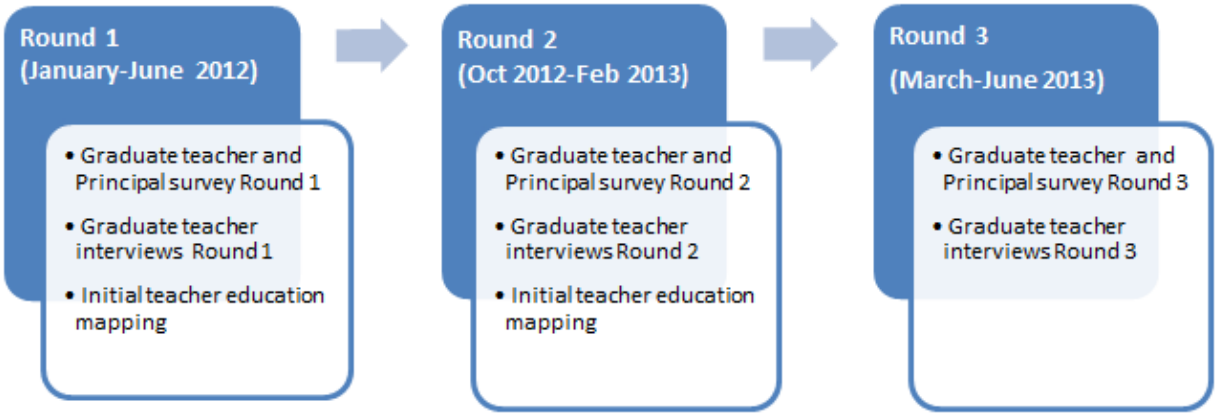
Methodologically, LTEWS featured the interplay between large-scale quantitative data collection methods and small-scale qualitative interviews. Mixed methods research is typically used to broaden understanding by incorporating both qualitative and quantitative research, 'or to use one approach to better understand, explain, or build on the results from the other approach' (Creswell, 2009, p.204). By utilising this mixed-methods approach, a deeper understanding was constructed of early career teachers' movements into, through, and possibly out of the teaching workforce, and how this experience is linked to their pre-service teacher education programs.

The main target population was new teacher education graduates from higher education institutions in all states and territories in Australia in 2011. The secondary target population was the school principals in those schools where the graduate teachers were employed. The project followed the graduate teachers at three time-points from time of graduation and into their second year of teaching. There were three rounds of surveys of the graduate teachers, three rounds of surveys of their school principals, and three rounds of teacher interviews with a small sample of graduate teachers who responded to the teacher surveys.

The study employed an iterative strategy with Round 1 survey instruments and telephone interviews informing Round 2 survey instruments, and so on. Each of the quantitative and qualitative components of the study produced stand-alone findings, but the quantitative survey data and its analysis formed the primary data for the study, with the interviews and the mapping informing and/or expanding on these findings.

The data collection process is shown in Figure 1 and specified further below.

Figure 1. LTEWS data collection process



Round 1

- *Graduate Teachers*
  - March 2012: First survey with 2011 teacher education graduates
  - May 2012: First series of follow-up telephone interviews with selected respondents
- *Principals*
  - May 2012: First survey of principals of 2011 teacher education graduates who responded to the March 2012 survey

Round 2

- *Graduate Teachers*
  - October 2012: Second survey with graduate teachers
  - December 2012: Second series of follow-up telephone interviews with selected respondents
- *Principals*
  - November 2012: Second survey of principals of graduate teachers who responded to the October 2012 survey

Round 3

- *Graduate Teachers*
  - March 2013: Third survey with graduate teachers

- May 2013: Third series of follow-up telephone interviews with selected respondents

- *Principals*
  - May 2013: Third survey of principals of graduate teachers who responded to the March 2013 survey

A national mapping of initial teacher education programs across all tertiary institutions in Australia was also conducted. The findings of the LTEWS mapping was also used in the analysis of the teacher and principal survey responses and telephone interviews with graduate teachers and referred to in various sections of the findings in this report. Key data from this mapping were used to cross-tabulate with survey data. These data included length of the teacher education program, the number of practicum days in each program, the distinguishing features of programs (features of their teacher education program that set them apart from other programs), and whether preparation in key areas[1] of teaching was undertaken as part of stand-alone or embedded units in the teacher education program.

The LTEWS study is the first national data set on the career progression of Australian graduate teachers from initial teacher education to be compiled. As noted in the conclusion to this report LTEWS is only a beginning response to these issues.

The multiple components of the study can be seen in the project timeline at Appendix 12. Even though aiming to be longitudinal, the project contract meant that the graduates were only followed for a little over one year after graduation. Full details of the data sources, survey instruments and explanations of the data sources, reliability and validity of these data are detailed in the appendices to the main report. These detailed appendices provide the lens to the data quality generated over the course of the study.

Statistics computed on the LTEWS survey responses provide accurate accounts of the respondents to which they refer. But they can only provide *estimates* of what the summary statistics would be if data could be gathered from the whole population. These estimates can never be perfectly precise, and the degree of imprecision they contain is captured by a statistic known as the *standard error*.

Appendix 11, provides the standard error – margin of error information and reliability of estimates. As noted the standard errors shown in Table 1: Standard error calculations, to one standard deviation are calculated for seven different proportions – from 50 down to five per cent.

The standard errors calculated show these proportions for varying total responses in the survey, from ten to 2,760. The standard error is not identical from one measure to another. It is known, however, that the variation from measure to measure, in percentages, is typically quite small.

The greatest contributor to standard errors is the sample size. Small sample sizes result in high standard errors and wide confidence intervals. Readers of the LTEWS report must consider sample size when interpreting the data. This is particularly important when looking at data using demographic characteristics (i.e. teachers, schools, ITE programs) as a filter.

2.2.1 Graduate Teacher Surveys and Principal Surveys

The graduate teacher survey was designed to collect graduate teachers' perception of their preparation for teaching and their early career experiences over time. The target population for the Graduate Teacher Survey was

[1] Discipline knowledge, teaching culturally, linguistically and socio-economically diverse learners, ICT, numeracy, literacy, assessment, pedagogy, curriculum, classroom management

all teachers who had graduated from an initial teacher education program in 2011, and included those who had registered with a state/territory teacher regulatory authority and those who had chosen not to. In order to reach both groups of graduates it was necessary to utilise two different approaches. Registered teachers were contacted through the teacher regulatory authorities in each jurisdiction to invite them to participate in the survey. In order to capture participants who had not registered with a teacher regulatory authority, higher education institutions with teacher education programs were approached to inform potential participants of the study through alumni networks.

All teacher regulatory authorities agreed to send emails to 2011 graduate teachers inviting them to participate in the survey. For Rounds 2 and 3 graduate teacher surveys, higher education institutions with teacher education programs were approached to publicise the graduate teacher survey through their alumni networks. This was to capture those graduates who did not register with any state/territory registration authorities. The *Study of the Effectiveness of Teacher Education* (SETE) project already had Victorian and Queensland teacher regulatory authorities working closely with the researchers, so the LTEWS project needed to approach the remaining six teacher regulatory authorities across Australia.

The principal survey was designed to collect principals' perceptions on the preparedness and effectiveness of their graduate teachers, the types of induction and support offered to them in schools, and the challenges they perceived that the new teachers faced. The target population for the Principal Survey was principals of schools who employed 2011 graduate teachers who had responded to the teacher survey. Thus, the total number of principals asked to participate in the Principal Survey was dependent on the number of responses to the graduate teacher survey.

Survey development

The graduate teacher and principal surveys had already been developed for the SETE study. They were modified slightly for LTEWS and then implemented in all jurisdictions around Australia. Subsequent surveys were developed in response to data gathered from earlier rounds.

National and international survey instruments informed question construction in the surveys. These included:

- Australian Council for Educational Research Staff in Australia's Schools teacher questionnaire 2007 and 2010 (McKenzie, Kos, Walker, Hong, & Owen, 2008; McKenzie et al., 2011);
- Australian Education Union new educators survey 2008 (Australian Education Union, 2009)
- Victorian Institute of Teaching Future Teachers Project (Survey instrument) (Ingvarson, Beavis, & Kleinhenz, 2004);
- Australia Government, Department of Education, Science and Training (DEST) survey of final year teacher education students: 2006
- Australian Graduate Survey

  (http://www.graduatecareers.com.au/research/surveys/australiangraduatesurvey/
- Teaching Australia – Study of the effectiveness of teacher education: 2008-2010 (Louden, Heldsinger, House, Humphry, & Darryl Fitzgerald, 2010); and,
- Teacher Pathways Project (Survey instruments) (D. J. Boyd et al., 2006).

Drawing on the surveys listed above and informed by relevant research literature, survey items and free text questions about effectiveness and preparedness were framed around the over-arching themes of curriculum, pedagogy, assessment, behaviour management, engagement with school stakeholders and local community, professional ethics, ongoing professional learning, relationships with students, and catering for diverse learners.

The survey of the school principals collected descriptive data on the school, its students and community, and data on the responsibilities of the early career teacher. Likert-scale questions were asked of principals' perceptions of beginning teacher performance across the themes identified above. The survey data from principals was merged with that of their graduate teachers to complete analyses using school characteristics and teacher performances as variables in the research.

Each subsequent teacher and principal survey had the advantage of being informed by the data from the immediately preceding surveys, and from the telephone interviews. These data were used to refine survey questions and to develop new ones that enabled the exploration of beginning teacher experiences as their time in the workforce progressed. Although there was some variation in the questions asked in each survey, a number of key questions were constant to enable analysis of trends longitudinally.

See Appendices 2–4 for the Graduate Teacher Survey questions in Rounds 1 to 3 and Appendices 5–7 for the Principal Survey questions in Rounds 1 to 3.

The study sample

The main target population was teachers who graduated in 2011 from higher education institutions in all states and territories in Australia. The secondary target population was the school principals in those schools where the graduate teachers were employed.

The Department of Industry, Innovation, Science, Research and Tertiary Education (DIIRSTE) award course completion figures for 2011 show that 28,069 students completed a program in the field of education in that year. This figure, however, includes all program levels, from higher doctorate to diploma. Of these 28,069 graduates, 16,533 initial teacher education program completions are recorded (DIISRTE, Award Course Completions 2011, Table 19)[2].

Table 1. Award course completions in initial teacher education – by state/territory, 2011

State/Provider	N
New South Wales	5,486
Victoria	3,602
Queensland	2,542
Western Australia	1,666
South Australia	1,116
Tasmania	225
Northern Territory	398

[2] http://www.innovation.gov.au/HigherEducation/HigherEducationStatistics/StatisticsPublications/Pages/default.aspx. Accessed June 2012.

Australian Capital Territory	277
Multi-state	1,221
Total Australia	16,533

Permission to conduct research in schools was sought and given from education departments in each jurisdiction. Permission to conduct research in schools in Catholic dioceses was obtained from all Catholic education offices except two. Another Catholic education office gave permission under the provision that the report would not contain any analysis of data across school sectors.

Responses from teacher surveys were not weighted. There was insufficient publicly available data on the characteristics of the population to enable weighting to be calculated.

Response rates

Response rates were calculated on the state or territory of respondents' teacher education program. It was necessary to calculate the response rate this way as the survey was open to graduates who had registered as a teacher with a state/territory registration authority, and also those who had not registered. The majority of responses were from graduates who had teacher registration. The response rates per jurisdiction, and overall is shown in Table 2 below.

Table 2. LTEWS graduate teacher survey response

		Round 1		Round 2		Round 3	
State/Territory	2011 graduates/state	No. responding	Response rate	No. responding	Response rate	No. responding	Response rate
NSW	5,486	306	5.6	461	8.4	409	7.5
VIC[1]	3,602	384	10.7	649	18.0	626	17.4
QLD[1]	2,542	317	12.5	420	16.5	436	17.2
SA	1,116	46	4.1	67	4.0	94	5.6
WA	1,666	149	8.9	187	16.8	113	10.1
TAS	225	30	13.3	30	13.3	43	19.1
NT	398	28	7.0	49	12.3	112	28.1
ACT	277	11	4.0	69	24.9	55	19.9
Multi-state	1,221	63	5.2	131	10.7	111	9.1
Other[2]		41		702		249	
TOTAL	16,533	1,375	8.3	2,765	16.7	2248	13.6

NOTE: 1. The number of responses to the three surveys was dependent on the number of invitations to participate in the survey, sent by teacher regulatory authorities in each jurisdiction, to 2011 graduates only. The accuracy of the response rate is dependent on the accuracy of their 2011 graduate lists.
2. 'Other' includes respondents who completed a teacher education program outside Australia or did not indicate an institution.

The longitudinal analysis involved three groups of respondents to the LTEWS surveys. The first group consists of those who responded to Rounds 1 and 2 of the graduate teacher surveys. Throughout the report, this group is referred to as Cohort 1. The second group consists of those who responded to Rounds 2 and 3 graduate teacher

surveys, and are referred to in the report as Cohort 2. The third group consists of those who responded to the first and third graduate teacher surveys, and are referred to as Cohort 3. The numbers in each cohort are shown in Table 3 below.

Table 3. Respondents who participated in more than one LTEWS graduate survey

	Number in each cohort	Survey rounds included in each cohort	Period of time
Cohort 1	717	1 & 2	6 months
Cohort 2	1,105	2 & 3	6 months
Cohort 3	574	1 & 3	12 months

Response rates to LTEWS principal surveys

The number of principals contacted in each round of the LTEWS surveys was dependent on the number of graduate teachers in each round who were employed as a teacher in a school and who named a school in their survey response.

The table below shows the number of principals that were contacted in each round of LTEWS to invite them to participate in the study, the number of principals who completed a survey and the corresponding response rate for that round of principal survey.

Table 4. LTEWS principal survey response rates

	Schools contacted	Principal responses	Response rate
Survey Round	N	n	%
Round 1	781	580	74.3
Round 2	1,478	373	25.2
Round 3	1,282	369	28.8

Analysis of the survey data

Analysis of the survey data consisted of five components. The first is descriptive statistics, presented in table and/or graph format. The second is cross-tabulation of teacher and school demographic data with career and teacher education data to show key trends. The third is longitudinal analysis across the three surveys. The fourth is factor analysis of constructs within the surveys: attraction to teaching and preparation for teaching. Likert-scale responses for these items are used to ensure amenability to parametric statistical testing. Analyses on the Likert-scale responses include analysis of each item in relation to the overall scale with the object of data reduction (i.e. principal components analysis) in order to explore the potential use of these constructs as new dependent variables to test for differences and interactions as a function of appropriately selected independent variables. The fifth component is regression analysis, which is an assessment of the factors that influence the rates of movement through and out of the teaching profession. Development of the datasets used for analysis is provided in Appendix 13**.** The key areas of investigation and analyses related to the survey and teacher education mapping data are outlined in Appendix 14. The survey data included free text responses that were coded for overarching themes and used to support the analysis of the teacher and principal survey responses and the telephone interview data with graduate teachers. Information about the margin of errors and reliability of estimates for the LTEWS survey

responses are at Appendix 11. The greatest contributor to standard error is the sample size. It is particularly important to consider sample size when interpreting data using demographic characteristics as a filter.

Survey data limitations

Response rates to the Graduate Teacher Surveys ranged between 8.3 per cent and 16.7 per cent as a proportion of the relevant national initial teacher education award course completion data (Department of Industry, Innovation, Science, Research and Tertiary Education, 2011) while the proportion of graduates who participated across all three survey rounds was less. Across the rounds, between 87 and 91 per cent of the returned surveys were completed and were able to be used in the analysis.

The distribution of survey respondents (e.g. based on demographic characteristics) compares well with data from other existing collections which include teacher graduates. An indication of sample representativeness is provided by comparing the distribution of the LTEWS cohorts to existing collections including higher education statistics from the former Department of Industry, Innovation, Science, Research and Tertiary Education (2011), the Staff in Australia's Schools (SiAS) survey 2010 (McKenzie, Rowley, Weldon, & Murphy, 2011) and Australian Bureau of Statistics Census (2011a) and Australian Bureau of Statistics, Schools Australia (2011b). Further, standard errors, which provide a measure of how accurately survey responses represent the whole population, have been provided to assist the interpretation of individual survey estimates.

The survey results report response frequencies alongside valid percentages to enable the reader to consider margins of error when interpreting the data. Concerns about data quality are few in number and are highlighted in the relevant sections to ensure that these findings are read with caution. Specifically, where participant demographics such as school location were used as a filter for analyses, consideration must be given to standard error (see Appendix 11).

Box 1 on p.38 provides a summary profile of the graduate teacher respondent cohort. However, particular aspects of the data in relation to the respondent group which should be considered when interpreting the analysis of findings. Teacher graduate response varies across states and territories. NSW and SA response is under-represented while Victoria and Queensland response is over–represented (see Table 9) reflecting the inclusion of findings from the *Study of the Effectiveness of Teacher Education* (SETE) in Victoria and Queensland.

2.2.2 Mapping of Initial Teacher Education Programs in Australia, 2011

One component of the LTEWS project was a point-in-time review of initial teacher education programs in Australia between late 2011 and early 2012. These are the programs of most relevance for the graduating teacher cohort being tracked for LTEWS. The data was collected first by desktop analysis of the undergraduate and postgraduate teacher education programs accredited by the relevant teacher regulatory authority. Data was then verified with the providers, and telephone interviews were conducted with personnel from each provider. A total of 551 programs from 47 providers across Australia that enable graduate teachers to apply for teacher registration in the relevant state or territory, were mapped (See Appendix 1: Attachment C for list of providers).

The mapping collected data on:

i. Teacher education structures
   - length, structure, content and delivery of institution or campus programs
   - length, structure and diversity of teaching practice incorporated into teacher preparation programs

- practicum and linkages with schools

ii. Teacher education approaches

- the focus on disciplined-based expertise
- the focus on developing discipline-based expertise
- preparation to teach culturally, linguistically, socio-economically diverse learners; ICT; and literacy and numeracy
- the development of pedagogical and assessment expertise

iii. Measures of entry into the teacher preparation programs

In addition to providing a point-in-time overview of initial teacher education across Australia, the main purpose of the LTEWS mapping data was in the analysis of the Graduate Teacher and Principal Survey responses and follow-up telephone interviews with graduate teachers. A separate and final report for the Mapping of Initial Teacher Education Programs in Australia in 2011 is available in Appendix 1, but for completeness in this report, a brief overview of this component of the project is included here.

Design of the mapping of initial teacher education programs

The teacher education graduates followed for the LTEWS study graduated from accredited teacher preparation programs at the end of 2011. Therefore, the initial teacher education mapping examined initial teacher education programs listed on Australian teacher education provider websites between October 2011 and March 2012, these being the programs most relevant for the target population.

The mapping was conducted in phases. During the first phase, publicly available online information was accessed to examine undergraduate and postgraduate teacher education programs across Australia that were recognised as accredited teacher preparation programs by the relevant teacher regulatory authority. For this desktop mapping, information was accessed from the websites of the teacher regulatory authorities, the tertiary admissions centres, and the teacher education providers.

The second phase involved verification of the program data collected as part of the desktop research in the first phase. Each teacher educator provider was sent the collated information about their programs and asked to verify it. In addition, telephone interviews were conducted with teacher education personnel from each provider between March and July 2012. The questions asked in these telephone interviews are provided in Appendix 1: Attachment A. Participation in the verification process was by invitation and voluntary. Even though multiple requests were sent, not all providers responded in full during this verification process.

The following characteristics and dimensions of the initial teacher education programs were sourced and collated during the desktop mapping and sent to each teacher education provider for verification.

- Provider and campus
- Program title
- Duration (FTE years)
- Availability of accelerated mode
- Availability of intensives
- Scope
- Enrolment options (part-time, full-time, off-campus)
- Fee type
- Entry requirements
    - Undergraduate/graduate entry
    - Australian Tertiary Admissions Rank (Y/N)

  - IELTS requirement (Y/N)
  - Additional requirements and program pre-requisites
- Professional experience
  - Overview of professional experience program
  - Number of observation days
  - Number of days of supervised practicum in schools
  - Number of days in community
  - Organisation of practicum (1 to 2 days a week, blocks, internships)
  - Practicum offered in first year (Y/N/NA)
- Subject specialisations offered
- Intake cycles
- Program overview
- Additional comments

The third and last phase of the initial teacher education mapping between August 2012 - January 2013 involved cross-checking, consolidation and further verification as needed, and then final analysis and reporting. It must be noted however that initial teacher education programs are continually being reviewed and updated by providers as part of their continuous program improvement processes and in response to changing accreditation requirements. Moreover, new programs are introduced and others discontinued. Thus, the teacher education picture across Australia is ever-changing, making the task of providing an accurate point-in-time snapshot somewhat challenging.

Data Collection

Desktop mapping was done for 47 providers of initial teacher education across Australia. Representatives in 44 of those institutions agreed to review and verify their program data and 45 took part in telephone interviews. More than one interview was conducted with some providers with multiple campuses when the programs were quite different on each campus. Table 5 provides an overview.

Table 5. Verification of teacher education program data – by state/territory

State/ Territory	Teacher education providers	Interviews conducted	Verified matrixes received
Tasmania	1	1	1
South Australia	4	4	4
Northern Territory	1	0	1
Victoria*	11	11	11
Western Australia #	5	5	5
New South Wales *#	16	14	14
Australian Capital Territory*	2	1	1
Queensland*	10	9	7
Total	**47**	**45**	**44**

*Australian Catholic University has campuses in VIC, NSW, QLD and ACT and is only counted once for the total. The matrix was verified for all campuses but only the VIC campus was counted. The interview was conducted with the ACU (VIC) campus.
The University of Notre Dame has campuses in WA and NSW but is only counted once in the total. The matrix was

verified for the WA campus. The interview was conducted with the WA campus. Southern Cross University has campuses in NSW and QLD but is also counted once, with matrix verified by and interview conducted with the NSW campus. The UNSW College of Fine Arts and the University of Sydney Conservatorium of Music are not considered separate providers.

Profile of initial teacher education 2011

The following tables show accredited initial teacher education programs by program type as listed by teacher regulatory authorities and teacher education providers. At the time of this mapping, there were 551 initial teacher education programs offered by 47 providers across 103 campuses. The list of teacher education providers can be found in Appendix 1.

As Table 6 shows, the majority of programs were offered at the bachelor's degree level, followed by graduate diploma and masters. Though the teacher regulatory authorities list only 443 accredited programs, these were delivered in flexible ways and, at the provider level, the various delivery options were commonly listed as separate programs.

Table 6. Initial teacher education programs – by type

	Teacher Regulatory Authorities – listed programs (n=443)	Provider-listed Programs (n=551)
Bachelor Degree	306 (69%)	397 (72%)
Graduate Diploma/ Postgraduate Diploma	80 (18%)	96 (17%)
Masters Degree	57 (13%)	58 (11%)

Table 7 below shows the programs by type and state. The two states that graduate the largest number of teachers, New South Wales and Victoria, are also the ones with the largest number of masters degree initial teacher education programs.

Table 7. Provider-listed initial teacher education programs – by type and state

State/Territory	Bachelor Degree	Graduate Diploma/ Postgraduate Diploma	Masters Degree	Total
Tasmania	10	-	6	**16**
South Australia	31	2	8	**41**
Northern Territory	31	2	-	**33**
Victoria	66	30	13	**109**
Western Australia	40	14	5	**59**
New South Wales	98	16	18	**132**
Australian Capital Territory	19	3	2	**24**
Queensland	103	29	5	**137**
TOTAL	**397***	**96**	**58**	**551**

*Including double degrees and embedded programs that incorporate Diplomas

2.2.3 Telephone Interviews with Graduate Teachers

Follow-up teacher interviews were conducted after each survey round with a sample of graduate teachers. The aim of the interviews was to track a group of graduate teachers to develop a rich and detailed understanding of their early teaching experiences at and across three time-points from the time of their graduation into their second year of teaching.

The graduate teachers from Round 1 were interviewed for the second and third time in January and May 2013 respectively, to learn whether they were still teaching and, if so, their experiences and progress in schools. These interviews were about an hour long and were conducted by telephone. A major purpose of the interview findings was to provide an evidence base for triangulation with the graduate teacher survey findings. This data source triangulation ensures accuracy and alternative explanations to confirm the validity of the methodological process (Stake, 1995).

The teacher interviews examined:

- the graduate teachers' perceptions about their readiness to teach in classrooms;
- the school environment;
- the extent to which attributes and features of teacher education prepared them for teaching; and
- the graduate teachers' early career progression in the teaching profession.

The interview protocols for the three rounds are provided in Appendices 8–10: Teacher Interviews Protocol Rounds 1 to 3. The survey and interviews findings built on each other to inform the design of subsequent interview questionnaires. The questions ranged from questions about an individual participant's role and experience in their school setting, to questions about their level of preparedness, and the successes and challenges they faced at the particular point-in-time.

Sampling procedure

Strategic and convenience sampling procedures were employed to select the interview participants. Sampling procedures involved a selection criterion based on their teacher registration jurisdictions, program type, campus location (e.g. off-campus, metropolitan, outer-metropolitan and regional) and employment type (full-time/part-time, relief/permanent contracts). Only teachers who had indicated their interest, in the survey rounds, to participate in a follow-up interview were contacted. Although the initial plan was to interview 20 graduate teachers per jurisdiction, the call-up response rate of willing participants meant that this was not achievable within the specified time-frame of the interview round. There was also a lower response call-up rate for some jurisdictions when compared to the others. In view of these challenges, 13 new participants were selected and contacted from the graduate teacher survey Round 2. Twenty-two narratives were also incorporated from the SETE project for a national representation of all states and territories.

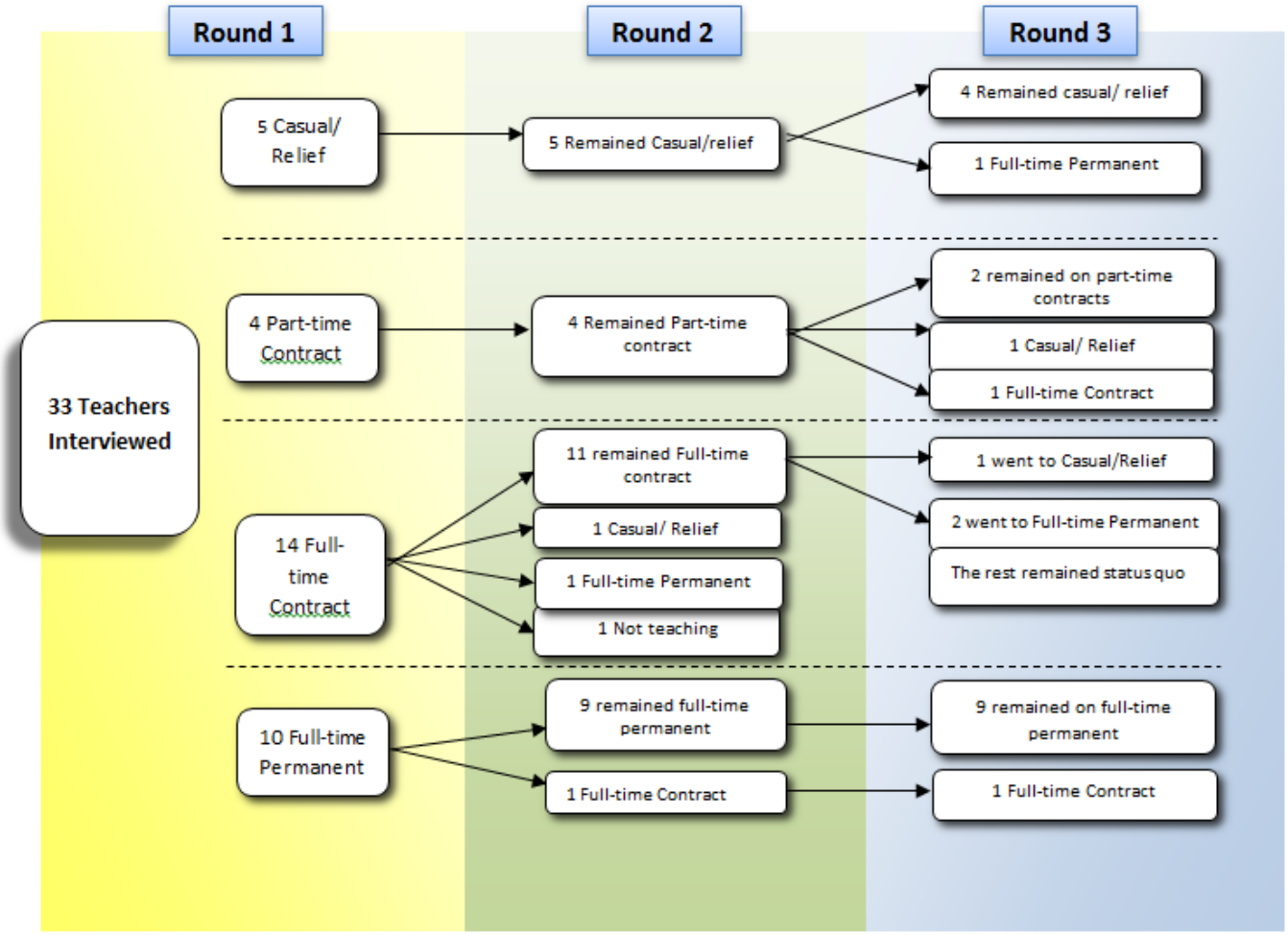
Table 8. Sample of graduate teachers interviewed – by state/territory

State/ Territory	No. of participants in Round 1	No. of participants in Round 2	No. of participants in Round 3
ACT	1	3	2
NSW	17	9	12

NT	1	4	2
SA	2	6	3
TAS	7	5	7
WA	16	9	9
VIC	-	-	10
QLD	-	-	12
Total	**44**	**36**	**57**

As shown in Table 8, 44 interviews with graduate teachers were conducted in Round 1 (July 2012), 36 in Round 2 including 13 new participants (January 2013), and 57 in Round 3 (May 2013). At each point, the research team followed up with the same group of graduate teachers to gain a picture of various aspects of their early career experiences including their career progression, mobility, perceptions of their preparedness for teaching and how they were coping in school and classroom contexts.

Figure 2. Career progression of interview respondents who participated in all three rounds



Overall, 33 teachers participated in all three rounds of the interviews over the period from March 2012 to March 2013 (See Figure 2). Of the original sample of 44 graduate teachers from the first round, only 22 graduate teachers participated in the follow-up interview in Round 2. The remaining 22 did not respond to the email invitations and phone calls. Some of the graduate teachers had left the teaching profession by the second and third interviews because they were not able to find a teaching position. A few of them decided to obtain teaching employment overseas. The following figure illustrates the employment profile of the graduate teachers across all three rounds.

Analysis of graduate teacher Interview data

The interview data were audio-taped, transcribed and later analysed using narrative analytic techniques and analysed in the following ways.

Within-case analysis

Within-case analysis seeks to evoke the contextual richness of the individual cases (Ayres, Kavanaugh, & Knafl, 2003). Each case was treated as a whole account to explore how graduate teachers make sense of their early career experiences at each time-point as well as the sequential unfolding of their experiences over time. A case narrative for each teacher-participant was written after the three rounds of interviews, guided by an organising structure to draw key aspects of the graduate teachers' overall early career experiences. An organising structure was developed based on the questionnaire design and emerging themes from the three rounds of Interviews. The themes of the organising structure include:

1. mobility and backgrounds of schools they teach in;
2. career orientations, progression and employability;
3. level of preparedness: pedagogy, curriculum and practice;
4. sense of efficacy in relation to teaching practice and student learning and
5. retrospective perception of quality and relevance of teacher education.

Cross-case analysis

The goal of cross-case analysis is not only to maintain the particularity of each case but to develop themes that represent multiple accounts (Ayres et al., 2003). At this stage, the analytical framework employed an iterative process of discussions to develop meta-narratives across the cases. The main objective of the cross-case analysis was to build linkages across the cases. This allowed the team to draw insights into the similarities between, and variations of, the narratives, and to build a multi-level and information-rich data set.

3. Career Progression

This chapter presents findings relating to the early career progression of graduate teachers who completed their teacher education programs in 2011. Career progression in this project refers to the entry into teacher education and possible exit from, teaching employment, including data on graduates' utilisation into teaching, their retention and attrition in teaching in their early years, and their geographic and schools sector mobility.

The LTEWS has collected comprehensive information about Australian graduate teachers' career progression and workforce data not captured elsewhere. The challenge of obtaining accurate and comprehensive data on the current teaching workforce for purposes of planning and forecasting is not new. The main challenge lies in the lack of a consistent and coherent effort to map teacher demographic profiles on a national level for workforce planning. The Australian Government report *Australia's Teachers: Australia's Future* (Committee for the Review of Teaching and Teacher Education, 2003) concluded that 'more comprehensive statistics relating to teachers, teacher workforce trends generally and specific fields of teaching and teacher education need to be consistently, reliably and regularly collected on a national and collaborative basis' (p.95).

There have been a number of attempts to generate data for this purpose. Since its inception in 2006, the national online survey *Staff in Australia's Schools* (SiAS) has provided a comprehensive overview of the national teacher workforce in Australia[3]. Commissioned by the Australian Government and conducted by the Australian Council for Educational Research (ACER), this biennial survey investigates the main characteristics of the demographic profile of both qualified and 'out-of-field' teachers in Australia to inform issues relating to career pathways, professional learning and school staffing issues. In addition, the Beyond Graduation Survey investigates the experiences including employment trajectories of graduates from Australian higher education institutions, re-surveying respondents to the Australian Graduate Survey three years post award completion[4].

Incorporated into this section of the report are survey data on early career progression, including employment, mobility and retention, with complementary qualitative data from the free text responses and the telephone follow-up interviews. Three rounds of surveys of 2011 graduates teachers and their principals provide data to explore their early career pathways and progression. The data is analysed in two ways: firstly as three separate snapshots over the period March 2012 to March 2013; and, secondly from a longitudinal perspective on graduate teachers who were followed across this time period. The findings are also informed by the interview data collected between May 2012 and May 2013 after each survey round.

To evidence who were the 2011 cohort; their entry into teacher education and possible exit from, teaching employment; data on their utilisation into teaching, their retention and attrition in teaching in their early years, and their geographic and schools sector mobility, the data is represented by five categories: Demography; Utilisation; Teacher mobility; Attraction retention and attrition; and Career pathways and progression. Each section is preceded by a summary of the main findings relevant to the category.

[3] See http://www.acer.edu.au/sias
[4] See http://www.graduatecareers.com.au/research/surveys/beyondgraduationsurvey/

3.1 Profile of Graduate Teacher Respondents and their Schools

Box 1 provides a summary of the profile of the 2011 graduate teachers who responded to the Graduate Teacher Surveys.

BOX 1. Summary profile of the graduate teacher respondent cohort

- The average age of the 2011 graduate teacher respondents early in their first year after graduation was 32 years, with 53 per cent under 30 years of age and 81 per cent female. Eighty-six per cent came from English-speaking backgrounds, 1 per cent identified as Aboriginal or Torres Strait Islander, and 42 per cent identified as the first in their immediate family to gain a tertiary qualification.

- Fifty-two per cent of graduate teacher respondents had graduated from a graduate entry teacher education qualification (including 12 per cent from masters programs), while 46 per cent had graduated with a four-year undergraduate bachelor's degree. The majority were qualified to teach secondary school (44 per cent) and primary school (37 per cent). More than three-quarters had completed their teacher preparation in Victoria (29 per cent), Queensland (24 per cent) and New South Wales (23 per cent).
- The proportion of graduate teacher respondents in teaching employment grew from 74 per cent to 84 per cent during the first-year-and-a-quarter after graduation. The largest percentage of employed graduates was in Victoria (29 per cent), followed by New South Wales (25 per cent) and Queensland (23 per cent). Most were employed in the government sector (about 70 per cent). Forty-six per cent were teaching in primary schools, while 48 per cent were teaching in secondary schools. Across the period of data collection, the percentage of graduate teacher respondents employed in schools located in major cities remained fairly constant (approximately 60 per cent), as did those in inner regional areas (between 20 to 23 per cent).

The following sections provide the statistical detail informing the summary in Box 1 above.

3.1.1 Demographic and professional characteristics of graduate teacher respondents

The Graduate Teacher Surveys asked respondents about their age, sex, Australian Aboriginal and/or Torres Strait Islander status, location of the initial teacher education institution, and language background. Table 9 reports the characteristics of the 2011 graduate teachers who responded to each of the three survey rounds. Rounds 2 and 3 of the Graduate Teacher Survey also asked if they were the first in their family to gain a tertiary qualification. Where appropriate and possible, the results of the analysis in this section has been compared to the teaching population in Australia.

Table 9. Demographic characteristics of graduate teacher respondents

	Round 1		Round 2		Round 3	
Teacher characteristics	n	%	N	%	N	%
Age groups						
20-24	404	29.4	814	29.4	480	21.4
25-29	317	23.1	779	28.2	709	31.5
30-34	154	11.2	322	11.6	288	12.8
35-39	127	9.2	232	8.4	199	8.9
40-44	158	11.5	264	9.5	234	10.4
45-49	119	8.7	182	6.6	180	8.0

50+	75	5.5	151	5.5	146	6.5
Not stated	21	1.5	21	0.8	12	0.5
Sex						
Male	265	19.4	594	21.5	504	22.4
Female	1,102	80.6	2,171	78.5	1,744	77.6
Aust Aboriginal, Torres Strait						
No	1357	98.8	2,233	98.9	1,789	98.7
Yes	17	1.2	25	1.1	23	1.3
Location of initial teacher education institution[2]						
NSW	306	22.7	461	22.0	409	20.3
VIC	384	28.5	649	30.9	626	31.0
QLD	317	23.6	420	20.2	436	21.6
SA	46	3.4	67	3.2	94	4.7
WA	149	11.1	187	8.9	113	5.6
TAS	30	2.2	30	1.4	43	2.1
NT	28	2.1	49	2.3	112	5.6
ACT	11	0.8	69	3.3	55	2.7
Multiple states	63	4.7	131	6.2	111	5.5
Overseas	12	0.9	36	1.7	18	0.9
First in family						
Yes	n/a		1,157	41.9	911	40.7
No	n/a		1,603	58.1	1,325	59.3
Language background						
English speaking	1,173	85.9	2,111	93.5	1,665	91.1
Northern European	7	0.5	13	0.6	16	0.9
Southern European	4	0.3	4	0.2	4	0.2
Eastern European	0	0.0	1	0.0	9	0.5
Middle Eastern	1	0.1	7	0.3	7	0.4
Central Asian	13	1.0	24	1.1	26	1.4
South Asian	22	1.6	31	1.4	37	2.0
Eastern Asian	20	1.5	29	1.3	30	1.6
Other	125	9.2	37	1.6	34	1.9
TOTAL[1]	1,375	100.0	2,765	100.0	2,248	100.0

NOTES 1.Total is for age groups and may vary for other variables. Percentage is calculated on valid responses.

2. In Round 1, SETE data contributed 774 graduate teachers out of the 1,375, which is 56.3% of the total responses. Of these, 457 were from Victoria and 317 from Queensland. In Round2, SETE data contributed 1,652 graduate teachers out of the 2,765, which is 59.7% of the total responses. Of these, 1,071 were from Victoria and 581 from Queensland. In Round 3, SETE data contributed 1,280 graduate teachers out of the 2,248, which is 56.9% of the total responses. Of these 1,280 from SETE, 779 were from Victoria and 501 were from Queensland. These figures do not match exactly to those of Vic and Qld in the table above because these the responses from these two states were calculated from registration as a teacher in these two states rather than place of preparation.

The SiAS 2010 report (McKenzie et al., 2011) showed that across the whole teaching profession in Australia, there are a high proportion of female teachers (81 per cent of primary teachers, 57 per cent of secondary teachers). In

Victoria, women make up about 70 per cent of the teaching workforce (State of Victoria (Department of Education and Early Childhood Development), 2012). The LTEWS results support these findings, with females making up 84 to 87 per cent of primary teachers across the three survey rounds and 68 to 71 per cent of secondary teachers. The proportion of females in secondary teaching is higher than that found by SiAS but SiAS looks at the whole teaching population, whereas LTEWS tracked new teachers only. Teaching has long attracted substantial numbers of women, and the number of men teaching in primary schools in particular has declined (Richardson & Watt, 2006).

Australian Aboriginal and/or Torres Strait Islander teachers in the LTEWS cohort make up a little over one per cent in all three rounds. This is about the same as the proportion in the SiAS 2010 sample (McKenzie et al., 2011) and less than the proportion of people who identify as Australian Aboriginal and/or Torres Strait Islander in the Australian population, which is 2.5 per cent (Australian Bureau of Statistics, 2011a). According to the Australian Institute for Teaching and School Leadership report (2013), initial teacher education programs have a slightly higher proportion of Indigenous students (2 per cent) when compared with the percentage across all fields of higher education (1 per cent), but that the representation of Indigenous students in initial teacher education does not yet match the proportion of Indigenous school students (4.9 per cent). Again, the LTEWS cohort is low in representation by comparison.

The data for Victoria and Queensland came from the SETE study. SETE's high survey response rates meant that the national data show an over-representation from these two states for the location of the teachers' initial teacher education institution, across all three rounds. According to the 2011 Award Course Completions data published by DIISRTE, initial teacher education figures show Victoria and Queensland having 22 and 15 per cent, respectively, of total teacher graduates. In LTEWS, NSW is under-represented in all rounds compared to the DIISRTE data (DIISRTE shows NSW had 33 per cent of teacher education completions in 2011). The percentage of completions for all other states and territories, as shown in the 2011 Award Course Completions, is indicated below:

- SA – 6.8 per cent
- WA – 10.1 per cent
- Tasmania – 1.4 per cent
- Northern Territory – 2.4 per cent
- ACT – 1.7 per cent

South Australian graduates were under-represented in LTEWS rounds. Western Australian graduates were well represented in Round 1 (11 per cent), but under-represented in the following two rounds. Tasmanian, Northern Territory and ACT graduates were proportionately represented across the three rounds with one exception. In Round 3, there were more than double the responses from Northern Territory graduates than there had been in previous rounds (5.6 per cent of all responses). Respondents who nominated 'overseas' initial teacher education institutions could be those with teaching qualifications from other countries which gave them teacher registration in Australia or could be those who completed initial teacher education in another country and then had to complete some more study in Australia in order to be eligible for teacher registration.

Respondents were asked if they were the first in their immediate family to get a tertiary qualification. Forty-two per cent stated that they were in Round 2, and 41 per cent in Round 3. The Australian Institute for Teaching and School Leadership (2013) reported that compared with all fields of higher education, a greater proportion of students commencing initial teacher education programs come from a lower socio-economic status and/or from regional areas. These are arguably those more likely to come from backgrounds with family members not well represented in terms of higher degree qualifications, but certainly those that would contribute to a diverse teaching workforce reflective of the student body. Certainly the report highlights that 'The diversity of entrants to

initial teacher education programs is a feature of the initial teacher education landscape, providing schools with qualified teachers from a range of backgrounds and histories' (p.8).

In the LTEWS study, 86 per cent of graduate teachers came from an English-speaking background in Round 1, which is slightly higher than for the general Australian population (Australian Bureau of Statistics, 2011a). LTEWS Rounds 2 and 3 had 94 and 91 per cent, respectively, of English-speaking background graduate teachers. This was a close match to SiAS 2010, which had 92 per cent of graduates from an English-speaking background. The Australian Institute for Teaching and School Leadership initial teacher education data report (2013) reports that the proportion of pre-service teachers with language backgrounds other than English (1 per cent) is smaller than the proportion for tertiary education programs generally (4 per cent).

The age group with the highest percentage of respondents in LTEWS Rounds 1 and 2 was the 20 to 24 year olds (both with 29 per cent). For Round 3, it was the 25 to 29 year olds (32 per cent). The average age for each round of the Graduate Teacher Survey is as follows:

- Round 1 – 32.1 years
- Round 2 – 31.5 years
- Round 3 – 32.6 years

The average age of graduate respondents who are employed as teachers is shown in the Table 10 below, disaggregated by the key characteristics of gender, level of teaching, and geographic location of the school.

Table 10. Characteristics of graduate teachers with a teaching position – by average age

Teacher characteristics	Round 1	Round 2	Round 3
Sex			
Male	32.8	32.6	33.1
Female	30.6	30.8	31.7
Level of teaching			
Early Childhood	30.1	34.7	34.1
Primary	30.8	31.3	32.2
Secondary	31.2	30.8	31.7

The average age for males is approximately two years older than females across all three rounds of the LTEWS survey. Round 1 showed that secondary teachers have the oldest average age, at 31. In Rounds 2 and 3, the average age of graduate teachers in early childhood is two to three years older than for those at the primary and secondary levels.

The professional characteristics of the graduate teachers in the three rounds of surveys are shown in Table 11 below. It shows the qualification level of the graduates and the area of teaching in which their teacher education took place.

Table 11. Graduates – by qualification level and teaching area

Professional characteristics	Round 1 N	%	Round 2 n	%	Round 3 n	%
Qualification level						
Masters	168	12.2	359	13.0	299	13.3
Bachelor	626	45.5	1,266	45.8	944	42.0
Grad Dip	547	39.8	949	34.3	767	34.1
Other	5	0.4	12	0.4	7	0.3
Not stated	29	2.1	179	6.5	231	10.3
Teaching area						
Early Childhood (EC)	53	3.9	100	3.9	61	3.0
EC/Primary	84	6.2	155	6.0	136	6.8
Primary	496	36.9	972	37.8	729	36.4
Primary/Secondary	110	8.2	242	9.4	177	8.8
Secondary	587	43.6	1,105	42.9	875	43.7
Other	15	1.1	n/a	-	26	1.3
TOTAL[1]	1,375	100.0	2,765	100.0	2,248	100.0

NOTES 1.Total is for qualification level and may vary for other variables. Percentage is calculated on valid responses.

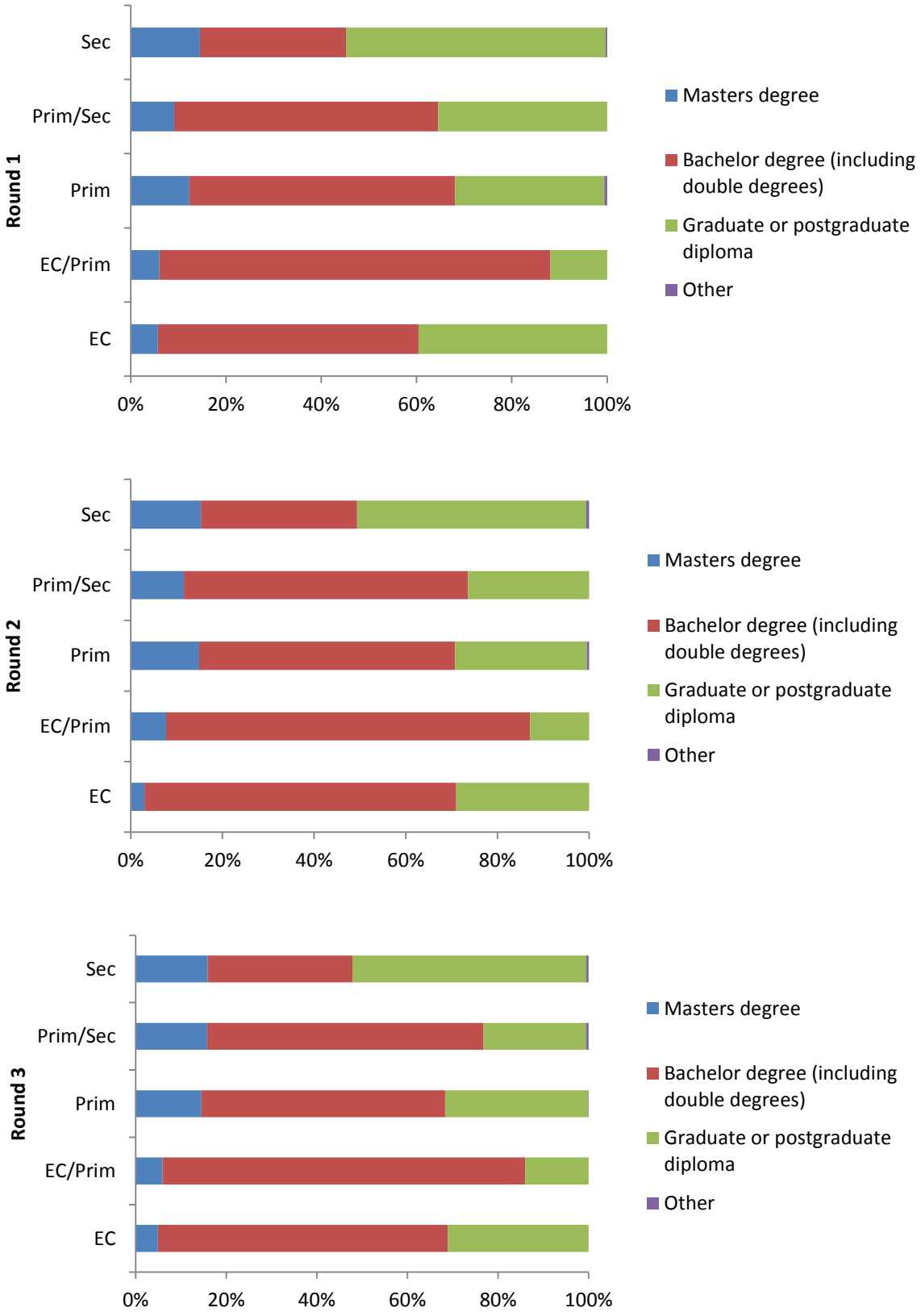
For all three rounds, the most common qualification level was a bachelor's degree (42 to 46 per cent of respondents over the three rounds), followed by a graduate diploma (34 to 40 per cent over the three rounds). Masters made up the smallest proportion of graduate qualifications, with 12 to 13 per cent.

The teaching area with the largest proportion of respondents over all three rounds was secondary teaching (43 to 44 per cent), then primary (36 to 38 per cent). The smallest proportion of respondents undertook their teacher education in the early childhood area (3 to 4 per cent).

The three figures below show graphically graduates' teaching area by the qualification level they gained in this area. The teaching areas, as in the table above, are constructed to capture information on those teaching at the intersection of two teaching areas, such as middle school (primary/secondary) as well as the distinct areas of primary and secondary teaching.

The teaching area with the largest proportion of graduates gaining a bachelor's degree is early childhood/primary. Along with this group, the early childhood, primary and primary/secondary areas all had a bachelor's degree as their main qualification level. The majority of graduates in the secondary area had a graduate or postgraduate diploma qualification across all three rounds.

Figure 3. Graduate teaching area – by qualification level



Longitudinal datasets of graduate teacher characteristics

As outlined in Chapter 2, the LTEWS Graduate Teacher Surveys were administered at three points in time – March 2012, October 2012, and March 2013. Having three discrete points in time when data was collected allowed for longitudinal analysis of the data collected from graduate teachers who participated in more that one survey.

Data from respondents who participated in more than one survey round was used to construct three longitudinal datasets:

- **The first dataset** shows changes for respondents from Round 1 to Round 2 (from early 2012 to late 2012). This is a six-month longitudinal view of these graduates in their first year, and is named Cohort 1 in Table 12.
- **The second dataset** shows changes for respondents from Round 2 to Round 3 (from late 2012 to early 2013). This is a six-month longitudinal view of these graduates from the end of their first year of teaching into their second year of teaching, and the dataset is named Cohort 2 in the table.
- **The third dataset** shows changes for respondents from Round 1 to Round 3 (from early 2012 to early 2013). This is a 12-month longitudinal view of these graduates from their first year of teaching to their second year and is named Cohort 3 in the table below.

Table 12 below shows the demographic characteristics of each of these cohorts, including age group, gender, Australian Aboriginal and/or Torres Strait Islander status, location of initial teacher education institution, whether the respondent is the first in their immediate family to gain a tertiary qualification, and their language background.

Table 12. Demographic characteristics of graduate teachers in the longitudinal datasets

	Cohort 1		Cohort 2		Cohort 3	
Teacher characteristics	**n**	**%**	**N**	**%**	**n**	**%**
Age groups						
20-24	172	24.0	236	21.4	101	17.6
25-29	151	21.1	321	29.0	154	26.8
30-34	89	12.4	142	12.9	70	12.2
35-39	68	9.5	88	8.0	56	9.8
40-44	96	13.4	138	12.5	78	13.6
45-49	78	10.9	108	9.8	67	11.7
50+	62	8.6	70	6.3	47	8.2
Not stated	1	0.1	2	0.2	1	0.2
Sex						
Male	144	20.1	241	21.8	118	20.6
Female	573	79.9	864	78.2	456	79.4
Aust Aboriginal, Torres Strait						
No	707	98.6	913	99.3	566	99.0
Yes	8	1.1	6	0.7	6	1.0
Location of initial teacher education institution						
NSW	149	21.1	227	21.8	117	20.7
VIC	219	31.5	319	30.7	160	28.4
QLD	168	23.8	231	22.2	142	25.2

SA	23	3.3	36	3.5	21	3.7
WA	71	10.0	71	6.8	55	9.8
TAS	18	2.5	16	1.5	16	2.8
NT	16	2.3	31	3.0	17	3.0
ACT	5	0.7	37	3.6	7	1.2
Multiple states	34	4.8	62	6.0	27	4.8
Overseas	4	0.6	10	1.0	2	0.4
First in family						
Yes	306	42.7	434	39.4	233	40.6
No	410	57.3	668	60.6	337	59.1
Language background						
English speaking	673	94.1	850	92.4	525	91.8
Northern European	5	0.7	7	0.8	5	0.9
Southern European	2	0.3	1	0.1	1	0.2
Eastern European	0	0.0	3	0.3	1	0.2
Middle Eastern	1	0.1	1	0.1	2	0.3
Central Asian	6	0.8	12	1.3	5	0.9
South Asian	3	0.4	9	1.0	6	1.0
Eastern Asian	9	1.3	10	1.1	4	0.7
Other	16	2.2	27	2.9	23	4.0
TOTAL[1]	717	100.0	1,105	100.0	574	100.0

NOTES 1.Total is for age groups and may vary for other variables. Percentage is calculated on valid responses.

The characteristics of the three groups are similar to each other, and also do not vary significantly from the characteristics of graduates at the three discrete points in time. There was a higher proportion of those aged 40 and over who responded to multiple surveys, so their proportion in the three longitudinal datasets varies from 27 to 34 per cent, compared to 22 to 26 per cent in the three discrete datasets. There was also a smaller proportion of those aged 20 to 24 responding to multiple surveys (18 to 24 per cent) than to the discrete surveys (21 to 29 per cent).

Gender, Australian Aboriginal and/or Torres Strait Islander status, language background and first in family to gain tertiary qualification characteristics do not differ significantly from the discrete datasets. There was a small, but not significant, difference in the location of graduates' initial teacher education institution in the 12-month dataset compared to the Round 3 discrete dataset. The proportion of responses from WA was slightly higher (10 per cent compared to 6 per cent), and the proportion of responses from NT was slightly lower (3 per cent compared to 6 per cent).

3.1.2 Characteristics of the schools in which graduate teacher respondents were employed

Table 13 below shows the number and percentage of graduate respondents who were teaching at the time of the three LTEWS Graduate Teacher Surveys. The proportion of those with a teaching position in schools grew from 74 per cent in Round 1 to 83.9 per cent in Round 3.

Table 13. Graduate teachers with a teaching position

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Teaching	980	74.0	2,217	84.7	1,830	83.9
Not teaching	344	26.0	401	15.3	350	16.1
TOTAL	1,324	100.0	2,618	100.0	2,180	100.0

The following tables show information on the schools in which these graduate teachers were employed. Table 14 shows the jurisdiction in which the graduate teachers were employed as teachers.

Table 14. Schools employing graduates – by state/territory

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
NSW	239	24.4	407	18.4	333	18.2
VIC	282	28.8	862	38.9	629	34.4
QLD	221	22.6	456	20.6	396	21.6
SA	39	4.0	72	3.2	76	4.2
WA	105	10.7	163	7.4	89	4.9
TAS	15	1.5	29	1.3	33	1.8
NT	22	2.2	69	3.1	151	8.3
ACT	9	0.9	107	4.8	79	4.3
In a school outside Australia	17	1.7	40	1.8	44	2.4
Not stated	31	3.2	12	0.5	1	0.1
TOTAL	980	100.0	2,217	100.0	1,831	100.0

Note: Australian Bureau of Statistics figures for percentage of schools across Australia by state/territory for 2011 are as follows: NSW 32.8 per cent; VIC 23.7 per cent; QLD 18.1 per cent; SA 8.0 per cent; WA 11.4 per cent; TAS 2.7 per cent; NT 2.0 per cent; ACT 1.4 per cent (Australian Bureau of Statistics, 2011b).

The largest percentage of employed graduate teachers in each of the three surveys is from Victoria (Round 1, 28.8 per cent; Round 2, 38.9 per cent; Round 3, 34.4. per cent). As noted earlier, the graduate teachers from this jurisdiction and from Queensland are part of the Australia Research Council funded SETE study. The SETE study was able to gather more responses to the survey, perhaps due to greater promotion of the project as a result of close links with the jurisdictional bodies who were partners in the project.

Table 15 shows the school sector in which graduate teachers are employed.

Table 15. Schools employing graduates – by school sector

	Round 1		Round 2		Round 3	
	N	%	n	%	n	%
Government	683	71.4	1,503	68.0	1,247	68.2
Catholic	120	12.6	300	13.6	212	11.6
Independent	140	14.6	304	13.8	276	15.1
Other	13	1.4	102	4.6	94	5.1
TOTAL	956	100	2,209	100.0	1,829	100.0

The largest sector of employment for graduate teachers is the government sector, with 71.4 per cent of respondents in Round 1, and 68 per cent in Rounds 2 and 3.

Table 16 shows the type of schools in which graduate teacher respondents were employed. Schools are categorised as early childhood (which includes kindergartens), primary, secondary, and combined primary and secondary.

Table 16. Schools employing graduates – by school type

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Early Childhood	59	6.2	94	4.3	75	4.2
Primary	436	45.7	997	45.6	780	43.5
Secondary	459	48.1	833	38.1	678	37.8
Combined	n/a	-	264	12.1	260	14.5
TOTAL	954	100.0	2,188	100	1,793	100

Note: Australian Bureau of Statistics figures for percentage of schools types across Australia are as follows: primary 67.1 per cent; secondary 14.9 per cent; combined 13.6 per cent; special schools 4.4 per cent (Australian Bureau of Statistics, 2011b).

The proportions of school types in the LTEWS survey results show an over-representation of secondary schools compared to their proportion of the total number of schools in Australia – 37.8 per cent of respondents' schools are secondary in Round 3 compared to 15 per cent of all schools across Australia. Primary schools are under-represented in the survey results compared to their proportion of total schools – 43.5 per cent in the Round 3 survey compared to 70 per cent of all Australian schools (Australian Bureau of Statistics, 2011b).

Table 17 shows the geographic location of schools where graduate respondents were employed during the three rounds of the LTEWS survey, as well as whether or not the school was a 'focus school' in the Aboriginal and Torres Strait Islander Education Action Plan 2010-2014. Geographic location is categorised according to the Australia Bureau of Statistics *Accessibility/Remoteness Index of Australia* (ARIA) in five categories for areas within Australia: major cities, inner regional, outer regional, remote and very remote (Australian Bureau of Statistics, 2011a).

Table 17. Schools employing graduates – by geographic location (ARIA) and Aboriginal and Torres Strait Islander focus schools as defined in the 2010–2014 Education Action Plan

	Round 1		Round 2		Round 3	
	n	%	n	%	N	%
Geographic location (ARIA)						
Major city	516	59.4	1120	61.2	935	60.1
Inner regional	189	21.7	417	22.8	310	19.9
Outer regional	123	14.2	199	10.9	207	13.3
Remote	26	3.0	48	2.6	47	3.0
Very remote	15	1.7	45	2.5	56	3.6
Aboriginal and Torres Strait Islander Focus school						
Yes	109	12.5	214	11.7	204	13.1
No	760	87.5	1615	88.3	1351	86.9

TOTAL	869	100	1,829	100	1,555	100

Across the three Graduate Teacher Survey rounds, the proportion of graduate respondents employed in schools located in major cities remained fairly constant (approximately 60 per cent), as did those in inner regional areas (between 20 to 23 per cent). The biggest change was the increase of graduate respondents in schools in very remote areas (which grew from 1.7 per cent in Round 1 to 3.6 per cent in Round 3). This can be accounted for by the increase in the number of responses from graduates located in the Northern Territory in Round 3.

Staff in Australia's Schools 2010 data for graduate teachers (McKenzie et al., 2011) does not show geographic location of schools by Australia Bureau of Statistics ARIA classification. It has three categories: metropolitan, provincial and remote. The percentages of LTEWS graduates in these three categories are as follows:

- Metropolitan – 72.6 per cent
- Provincial – 24.4 per cent
- Remote – 3.0 per cent

In comparison to this SiAS 2010 data, there are more employed graduates in the LTEWS data who are venturing further away from highly populated areas.

Graduate teacher respondents in schools with an Aboriginal and Torres Strait islander focus were between 12 and 13 per cent of all respondents in each of the three LTEWS surveys. The Australian Government Department of Education (formerly Department of Education Employment and Workplace Relations-DEEWR) does not have publicly available data on the proportion of Australian schools that have an Aboriginal and Torres Strait Islander focus, and so it is not possible to report here whether the LTEWS figures are in proportion.

Table 18 shows the level of teaching for employed graduate teachers, according to age groups across Rounds 2 and 3 (October 2012 and March 2013). Across the two rounds, the largest percentage of graduates were teaching at the primary level, irrespective of age. The age groups with the highest percentage who were teaching at the early childhood level were the 40–44 and 45–49 year-old group. The age group with the highest percentage employed at the secondary level is the 25–29 year-old group (40 per cent in Round 2, and 41 per cent in Round 3). The age group with the highest percentage employed at the primary level is the 40–44 year-old group in both rounds (50 per cent in Round 2 and 49 per cent in Round 3).

Table 18. Graduate teachers with a teaching position – by level of teaching percentages in each age group

	20-24	25-29	30-34	35-39	40-44	45-49	50+	Total	
	%	%	%	%	%	%	%	%	N
Round 2									
EC	3.0	3.9	2.4	4.8	8.1	8.2	5.9	4.3	94
Primary	46.3	42.9	48.6	45.5	50.7	46.9	41.6	45.8	995
Secondary	39.0	40.2	37.5	37.4	32.1	33.3	38.6	38.0	825
Comb K-12	11.6	13.1	11.5	12.3	9.1	11.6	13.9	11.9	259
TOTAL									2,173
Round 3									
EC	2.0	4.7	4.0	3.0	6.6	7.4	4.4	4.2	75
Primary	47.5	39.7	41.0	41.5	48.9	45.9	45.1	43.5	777
Secondary	37.3	41.1	35.2	37.2	35.2	31.9	39.6	37.7	674

Comb K-12	13.2	14.5	19.8	18.3	9.3	14.8	11.0	14.6	260
TOTAL									1,786

The percentages show that for every age group, a similar proportion of graduate teacher respondents was teaching in primary and secondary, but those teaching early childhood are a little older. One explanation of this could be that this group of people are already early childhood practitioners with sub-bachelor qualifications and are updating their qualifications to a bachelor's level in line with national reforms aiming for higher qualification requirements for early childhood professionals.

Table 19 below shows the teaching level for graduates with a teaching position by the proportion of age groups in each, across Rounds 2 and 3.

Table 19. Graduate teachers with a teaching position – by age percentages in each level of teaching

	Early Childhood	Primary	Secondary	Combined K-12	Total	
	%	%	%	%	%	n
Round 2						
20-24	21.3	30.6	31.0	29.3	30.2	656
25-29	25.5	26.7	30.2	31.3	28.5	620
30-34	6.4	12.4	11.5	11.2	11.6	253
35-39	9.6	8.5	8.5	8.9	8.6	187
40-44	18.1	10.7	8.1	7.3	9.6	209
45-49	12.8	6.9	5.9	6.6	6.8	147
50+	6.4	4.2	4.7	5.4	4.6	101
TOTAL						2,173
Round 3						
20-24	10.7	25.0	22.6	20.8	22.8	408
25-29	36.0	29.6	35.3	32.3	32.4	579
30-34	12.0	12.0	11.9	17.3	12.7	227
35-39	6.7	8.8	9.1	11.5	9.2	164
40-44	16.0	11.5	9.5	6.5	10.2	182
45-49	13.3	8.0	6.4	7.7	7.6	135
50+	5.3	5.3	5.3	3.8	5.1	91
TOTAL						1,786

At the early childhood level, the largest proportion of graduate teachers was aged under 30 (47 per cent in Rounds 2 and 3), although this level, along with primary, also has a high proportion of graduate teachers in older age groups (both have 19 per cent of new graduate teaching employment in the 40–49 year-old bracket). At the primary, secondary and combined levels, the majority of graduate teaching employment is in the under-30 age group. This is similar to results from the SiAS 2010 report (McKenzie et al., 2011), although SiAS results showed a higher proportion of employment for graduates under 30 than did LTEWS (SiAS: 69 per cent for primary; LTEWS: 57 and 55 per cent over the two rounds. SiAS: 63 per cent for secondary; LTEWS: 61 and 56 per cent over the two rounds).

The LTEWS project had more graduate teachers aged over 40 at the primary level than did SiAS. For LTEWS, this was 22 and 25 per cent over the two rounds, and for SiAS it was 13 per cent. LTEWS and SiAS showed a similar proportion aged over 40 at the secondary level. For LTEWS, this was 19 and 21 per cent over the two rounds, and for SiAS it was 17 per cent. For LTEWS, at all three levels, there is a higher proportion aged 25–29 than there is 20–24: 30 per cent of graduates employed at the primary level are aged 25–29 compared to 25 per cent aged 20–24; and, 35 per cent of graduates employed at the secondary level are aged 25–29 compared to 23 per cent aged 20–24.

Table 20 below shows the distribution of employment for the 2011 graduate teachers by school type. Teachers were asked if their school was primary, secondary or combined, or if they were employed in an early childhood setting in Rounds 2 and 3 (October 2012 and March 2013 respectively).

Table 20. Graduate teachers with a teaching position – by school type

	Round 2		Round 3	
	n	%	n	%
Early Childhood	86	3.9	75	4.2
Primary	992	45.2	780	43.5
Secondary	818	37.3	678	37.8
Combined K-12	298	13.6	260	14.5
TOTAL	2,194	100.0	1,793	100.0

Graduate teacher respondents show similar proportions of employment across the four school types for both rounds. Just over a third of graduates were employed in a secondary school, and approximately 45 per cent were employed in a primary school.

3.2 Utilisation of New Graduate Teachers

Teaching is one of the single largest professions in Australia. The Productivity Commission reports that there are about 16,000 domestic graduate teachers completing initial teacher preparation course each year. At the same time, total number of students in Australia is forecasted to increase by around 26 per cent (or about 900,000) over the next decade, with the highest rates of growth expected to be in Queensland (45 per cent) and Western Australia (40 per cent) (Productivity Commission, 2012).

These present competing demands on teacher workforce, schools and the broader labour market. Current and relevant survey work and teacher workforce data is crucial for identifying key issues that need to be addressed to improve the utilisation of the teaching workforce. The data presented in this section particularly investigates the distribution of graduate teachers across teaching areas and their intentions whether or not to seek teaching employment from the point of their graduation from teacher education program to early in the second year post-graduation. This is examined for graduate teachers who have teaching employment and those who did not enter teaching.

Box 2 lists the main findings discussed in more detail in this Section 3.2: 3.2.1 Distribution of graduate teachers across teaching areas; 3.2.2 Utilisation of graduates in teaching employment; and 3.2.3 Graduates who did not enter teaching.

Box 2. Main Findings: Utilisation of new graduate teachers

Distribution of graduate teachers across teaching areas

- Of the graduate teachers with a specialist teaching qualification, a large percentage was teaching in at least one of their specialist areas (77 per cent during early in the first year after graduation; 86 per cent early in the second year).
- High proportions of special needs, mathematics, English, technology, science, and languages other than English (LOTE) teachers were teaching in their area of specialisation.
- Graduate teachers with specialist qualifications in society and the environment, the arts and health and physical education were least likely to be teaching in their specialist areas and therefore more likely to be teaching out of field.

Utilisation of graduates in teaching employment

- A majority of graduate teachers moved into teacher employment after graduation (increasing from 74 per cent early in their first year after graduation to 84 per cent early in the second year). Almost 60 per cent were on a contract while just under a quarter were employed casually.
- Only 18 to 20 per cent of the graduate teachers had full-time permanent employment in their first year of teaching. This, however, increased to 34 per cent early in the second year.
- Nearly two thirds commenced teaching in a full time position, either permanently (18 per cent) or on contract (46 per cent).
- There was a higher proportion of males in full-time permanent teaching positions during the first year and a half after graduation than females (7 per cent higher in Rounds 1 and 3 and 5 per cent in Round 2). Female graduate teachers were more likely to be in casual and part-time contract position.

(continued on the next page)

Box 2. (continued)

- Approximately 30 per cent of graduates who were in part-time contract or casual employment in their first year remained employed in this capacity in their second year post graduation.
- In interviews, graduate teachers cited casual or relief employment as a factor hindering their career progression and professional learning and development. Having inadequate access to induction programs and professional development resources and networks, and the lack of classroom opportunities to put their skills and knowledge into practice contexts, were cited as obstacles for professional development.
- Three-quarters of principals agreed that they liked to employ graduate teachers, often citing their desirable personal attributes such as enthusiasm, energy, passion for teaching and willingness to learn. In survey free text responses, principals indicated that employing graduates was their professional responsibility to help build the next generation of teachers.

Graduates who did not enter teaching

- Of those graduate teachers who were not in teaching positions and who taken up other employment, more than 40 per cent were working in education-related industries such as tutoring, working in the tertiary sector, in early childhood settings or as teachers' aides and in outside school hours care at the beginning of their first year post graduation. A similar proportion was working in education-related industries at the beginning of their second year.
- Teaching seemed to remain a desirable career, with the findings showing how graduates who had registered with their Teacher Registration Authorities and had not secured teaching positions persisted in seeking a teaching position over the three rounds. By their second year after graduation, more than 60 per cent of graduate teachers without a teaching position were still seeking teaching employment.

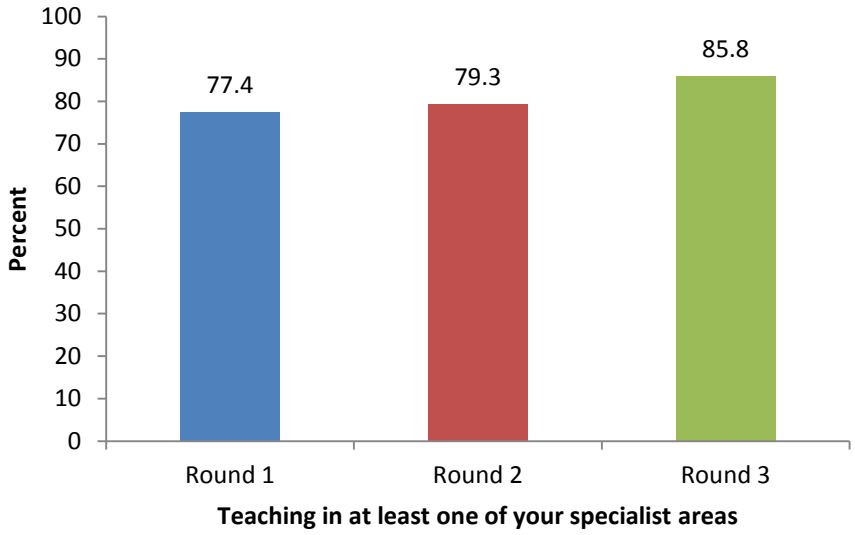
3.2.1 Distribution of graduate teachers across teaching areas

Of the graduate teacher respondents who were teaching, the percentage with a specialist qualification (such as, for example, in health and physical education, mathematics, science, the arts, LOTE) is as follows:

- Round 1 – 58 per cent
- Round 2 – 56 per cent
- Round 3 – 52 per cent

Figure 4 shows the percentage of graduate teachers with a teaching position who had a specialist qualification and were teaching in their specialist area. There is a slight increase in the percentage of graduates teaching in their specialist area from Round 1 to Round 3. Approximately 78 per cent were teaching in their specialist area in Round 1, 79 per cent in Round 2, and 86 per cent in Round 3.

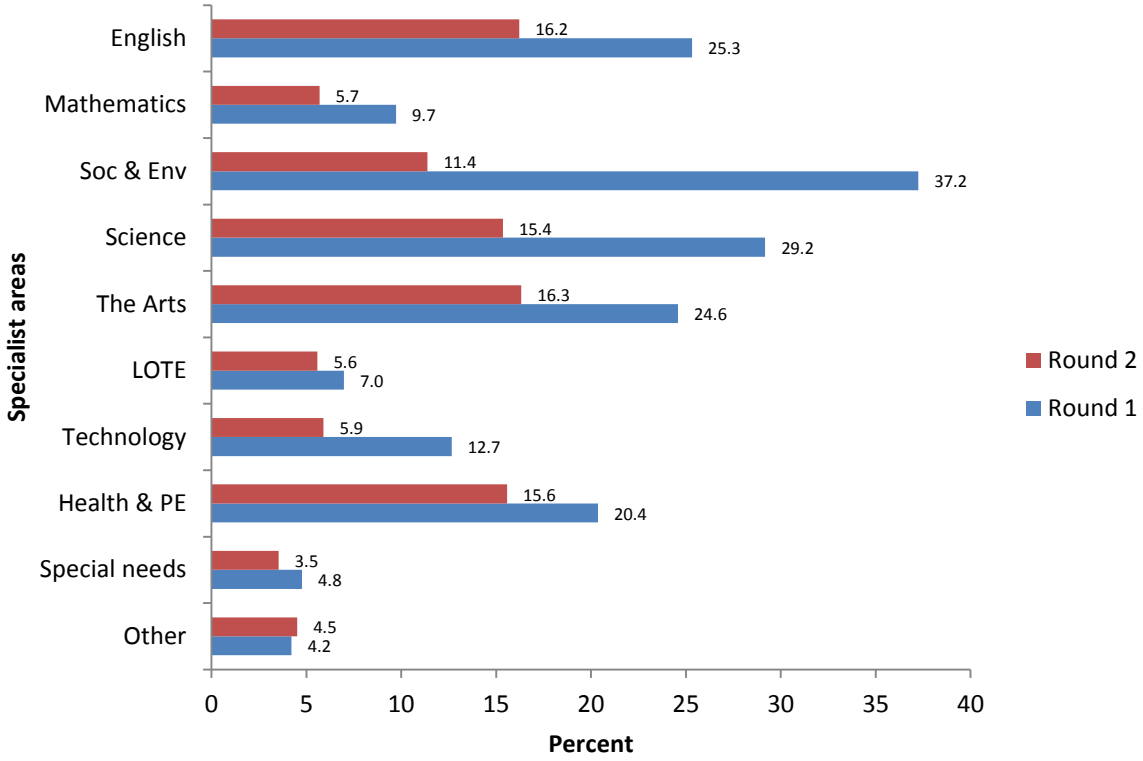
Figure 4. Graduate teachers with a teaching position who have a specialist qualification – by currently teaching in their specialist area



(Round 1 n=545; Round 2 n=931; Round 3=933)

Figure 5 illustrates the distribution of employed graduate teachers across their teaching areas. In Rounds 1 and 2 of the LTEWS Graduate Teacher Survey, respondents were asked to name the areas in which they had completed specialist qualifications in their teacher education program. These results include all those who stated that they were teaching and have qualifications in a specialist area, regardless of their main area or level of teaching (i.e. early childhood, primary, secondary).

Figure 5. Graduate teachers with a teaching position who are qualified to teach in a specialist area – by their area of specialisation, Rounds 1 and 2



The figure shows that the highest proportion of graduate teachers with a qualification in a specialist area is in society and the environment in Round 1 (37.2 per cent) and the arts in Round 2 (16.3 per cent). Other specialist areas with high percentages of graduates in Round 1 include science (29.2 per cent), English (25.3 per cent) and the arts (24.6 per cent). In Round 2, areas with a high percentage of trained specialists include English, (16.2 per cent), health and physical education (15.6 per cent) and science (15.4 per cent). In the priority areas of mathematics, LOTE and technology, the percentage of graduates with formal qualifications were as follows:

- Mathematics – 9.7 per cent in Round 1; 5.7 per cent in Round 2
- LOTE – 7 per cent in Round 1; 5.6 per cent in Round 2
- Technology – 12.7 per cent in Round 1; 5.9 per cent in Round 2

In Round 3 (the beginning of the second year post-graduation), respondents were asked to state the specialisation area in which they were qualified to teach and if they were currently teaching in their specialist area. Table 21 shows the number of graduate teachers who were qualified to teach in a specialist area and the proportion of them who were currently teaching in their area of specialisation. These results include all those who stated their area of teaching and had qualifications in a specialist area, regardless of their main area or level of teaching (i.e. early childhood, primary, secondary).

Table 21. Graduate teachers with a teaching position who are qualified to teach a specialist area – by percentage, who are teaching in their area of specialisation, Round 3

	Qualified to teach	Currently teaching	
	n	n	%
English	301	264	87.7
Mathematics	232	229	98.7
Society and the Environment	349	232	66.5
Science	288	230	79.9
The Arts	263	158	60.1
LOTE	110	85	77.3
Technology	194	163	84.0
Health and Physical Education	229	142	62.0
Special Needs	80	98	122.5
Other	27	23	85.2
TOTAL[1]	933		85.8

Note: 1. Graduates could select as many specialist areas as were applicable, therefore the number of responses is not equal to the total

The table shows that the specialist area with the highest number of graduate teachers with that qualification was society and the environment (349) followed by English (301). The area that had the highest uptake of specialist teachers was special needs where there were more graduates teaching in this are than the number of graduates qualified to teach it. The area with the next highest uptake of specialist-trained graduates is in mathematics (99 per cent). The data show that graduate teachers with specialist qualifications in society and the environment, the arts, and health and physical education were least likely to be teaching in their specialist areas at the beginning of the second year after graduation. For instance only 60 per cent of graduate teachers qualified in the arts and 62 per cent graduate teachers qualified in health and physical education were teaching in their specialist areas. Section 4.5 further discusses graduate teachers' qualifications to teach in a specialist area and the extent to which they taught the subjects they studied, longitudinally across all three surveys.

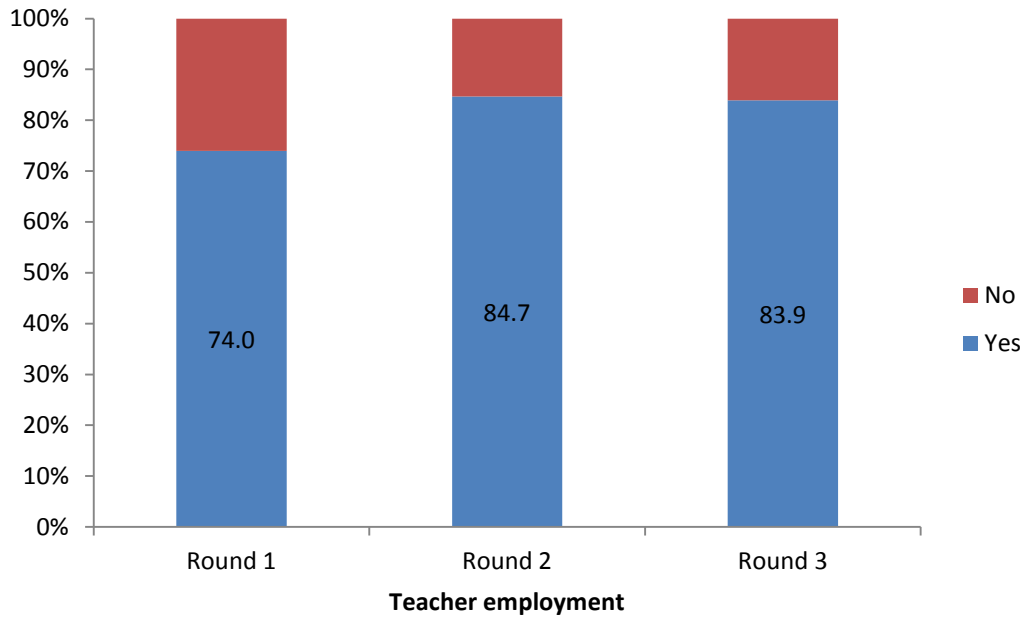
3.2.2 Utilisation of Graduates in Teaching Employment

In this section, analysis is provided for discrete points linked to each survey round and for longitudinal analyses of the employment levels of graduate teachers and changes of employment type. The views of principals in relation to attracting and retaining graduate teachers are also examined.

A. Employment in schools: Discrete Points in Time

Figure 6 shows the percentage of graduate teachers in the LTEWS sample employed as a teacher in a school across all three rounds of the Graduate Teacher Survey (Round 1: March 2012, Round 2: October 2012, and Round 3: March 2013). A majority of graduate teachers moved into teacher employment over the year after graduation. In Round 2, 85 per cent of respondents are working as teachers in schools, compared to 74 per cent in Round 1. The percentage of graduate teachers employed as a teacher remained consistent for the next two rounds with about 84 per cent of respondents working as teachers in schools in Round 3.

Figure 6. Graduate teachers' employment in schools



Length of teaching employment

Table 22 shows the length of time graduate teachers had been in their current teaching position at the time of each of the three survey rounds.

Table 22. Graduate teachers with a teaching position – by length of current teaching employment

	Round 1		Round 2		Round 3	
Length of employment	n	%	n	%	N	%
Under 1 month	34	3.7	61	2.9	63	3.5
1–3 months	367	39.8	314	14.8	461	25.7
4–6 months	331	35.9	294	13.9	102	5.7

7–12 month	150	16.3	1,257	59.3	210	11.7
13–18 months	39	4.2	98	4.6	724	40.3
19–24 months	-		95	4.5	83	4.6
Over 2 years	-		-		154	8.6
TOTAL	921	100.0	2,119	100.0	1,797	100.0

In Round 1, the largest proportion of the 2011 graduates had been employed in their current teaching position for 1 to 3 months (40 per cent). In Round 2, the majority of respondents had been in their current teaching position from between 7 to 12 months (59 per cent). In Round 3 (March 2013) the data shows two distinct groups of employed graduate teachers: one group who have been in their current position for 1–3 months (26 per cent), and another who have been in their current position for 13 to 18 months (40 per cent). The timing of the three LTEWS Graduate Teacher Surveys, and the results in the above Table, shows that a large proportion of graduates gained their employment at the beginning of the school year. Those teaching for some time before they had actually graduated are likely to be those registered with permission to teach.

Employment type

Table 23 shows graduate teachers who are in a teaching position by their employment type in the three rounds of surveys.

Table 23. Graduate teachers with a teaching position – by employment type

	Round 1		Round 2		Round 3	
	n	n	n	%	n	%
Full time – Permanent	168	17.5	441	20.1	613	34.1
Part time – Permanent	30	3.1	57	2.6	59	3.3
Casual	209	21.7	512	23.3	299	16.6
Full time – Contract	441	45.8	945	43.1	679	37.8
Part time – Contract	114	11.9	239	10.9	147	8.2
TOTAL	962	100.0	2,194	100.0	1,797	100.0

In Rounds 1 and 2, nearly half of graduate teachers (46 and 43 per cent, respectively) were employed on a full-time contract basis. The next largest employment type in the first two rounds is casual employment (22 and 23 per cent, respectively), followed by full-time permanent employment (18 and 20 per cent). In Round 3, the proportion of graduates in each employment type had changed. There were 34 per cent of graduates with full-time permanent positions (an increase of 14 percentage points from Round 2), and there were 17 per cent of graduates in casual positions (a decrease of 6 percentage points from Round 2).

By the beginning of the second year after graduation, almost 72 per cent were in full-time employment, either permanently or on contract. This is lower than for the whole teaching profession in the SiAS 2010 data (McKenzie et al., 2011) which suggests that full-time employment is the most common type of employment for both primary (77 per cent) and secondary teachers (82 per cent). In Scotland, the General Teaching Council for Scotland (GTCS) *Probation Teachers Survey* October 2009–2010 (Donaldson, 2010) showed that only 16.1 per cent of those who responded had full-time permanent positions. A further 19.5 per cent had full-time temporary contracts. According to the Australian Institute for Teaching and School Leadership Initial Teacher Education Data Report (2013), 14 per cent of 2011 primary teaching graduates were not working, 55 per cent were working full-time and 31 per cent

part-time. For 2011 secondary teaching graduates, 16 per cent were not working, 56 per cent were working full-time and 28 per cent part-time.

Table 24 illustrates the cross-tabulation of graduate teachers with a current teaching position by gender and employment type.

Table 24. Graduate teachers with a teaching position – by gender and employment type

	Males		Females	
Employment type	n	%	n	%
Round 1				
Full-time permanent	43	22.8	125	16.2
Part-time permanent	6	3.2	24	3.1
Casual	31	16.4	178	23.0
Full-time contract	98	51.9	343	44.4
Part-time contract	11	5.8	103	13.3
TOTAL	189	100.0	773	100.0
Round 2				
Full-time permanent	116	24.3	325	18.9
Part-time permanent	13	2.7	44	2.6
Casual	95	19.9	417	24.3
Full-time contract	217	45.4	728	42.4
Part-time contract	37	7.7	202	11.8
TOTAL	478	100.0	1,716	100.0
Round 3				
Full-time permanent	157	39.5	456	32.6
Part-time permanent	14	3.5	45	3.2
Casual	51	12.8	248	17.7
Full-time contract	149	37.5	530	37.9
Part-time contract	26	6.5	121	8.6
TOTAL	397	100.0	1,400	100.0

In all three rounds, there is a higher proportion of males in full-time permanent positions than females (7 per cent higher in Rounds 1 and 3, 5 per cent in Round 2). There is also a higher proportion of males in full-time contract positions than females in the first two Rounds (8 and 3 per cent more, respectively), but this changes for Round 3 where both 38 per cent of males and females are in full-time contract positions. There is a higher proportion of females than males in casual positions across all three Rounds (7 per cent higher in Round 1, 4 per cent higher in Rounds 2 and 3) and a higher proportion of females than males in part-time contract positions (7 per cent more in Round 1, 4 per cent more in Round 2, and 2 per cent in Round 3).

B. Employment in schools: Longitudinal analysis

As indicated in Section 3.1.1, data from respondents who participated in more than one survey round were used to construct three longitudinal datasets; respondents were named as Cohort 1, 2 and 3.

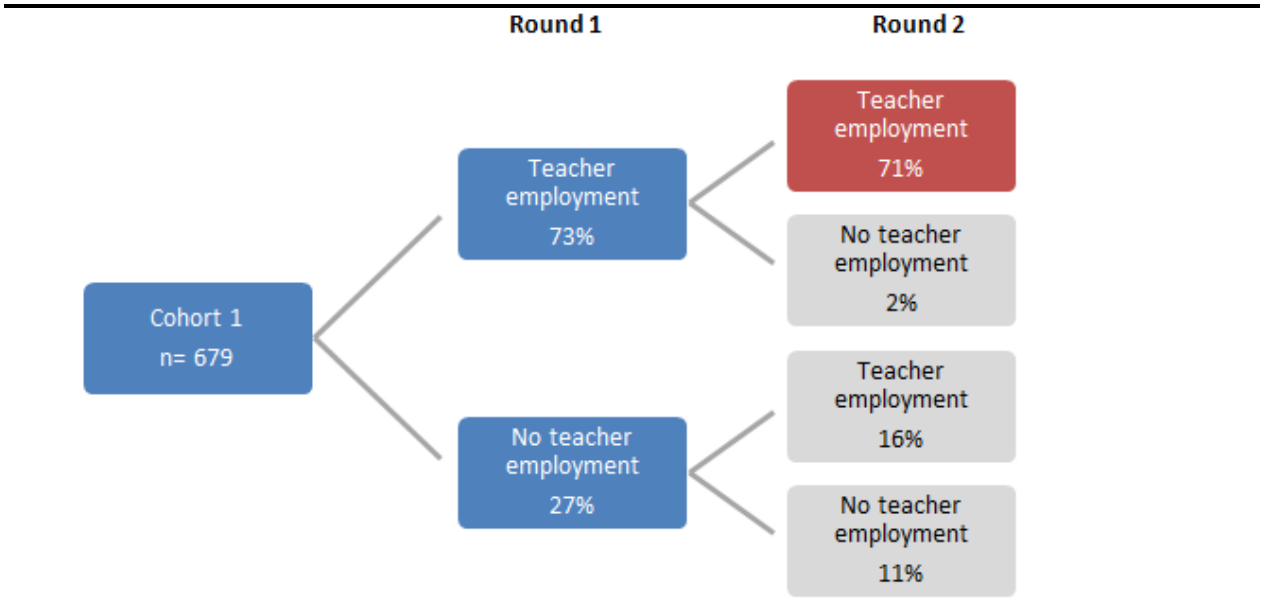
- **Cohort 1 (able to be followed from March 2012 – October 2012. N=679)**
- **Cohort 2 (able to be followed from October 2012 – March 2013. N=1,050)**
- **Cohort 3 (able to be followed from March 2012 – March 2013. N=544)**

This section examines the employment levels of graduate teachers over time and the changes in employment types for these respondents.

Cohort 1 (Round 1 to Round 2): Employment in schools

Figure 7 shows the 679 graduates whose teacher employment status can be followed from Round 1 to Round 2, known as Cohort 1. It shows the changes in teaching employment status for these 679 respondents over the six-month period from March to October 2012.

Figure 7. Cohort 1 – by employment as a teacher



In Round 1, 73 per cent of Cohort 1 is teaching at the time of data collection. In Round 2, the percentage of Cohort 1 in teaching employment rose to 87 per cent. Two per cent of Cohort 1, who had been teaching in March 2012, was no longer teaching in October 2012, but 16 per cent of Cohort 1 without teaching positions in March had found employment by October.

An overview of employment type for those in Cohort 1 who had teaching employment is represented in Table 25. This table illustrates the employment type of the 71 per cent with teaching employment over the first two rounds of surveys (See Figure 7 above).

Table 25. Cohort 1 with a teaching position in Rounds 1 and 2 – by employment type

	Employment type in Round 2					
	Full-time permanent	Part-time permanent	Casual	Full-time contract	Part-time contract	**Total**
Employment type in Round 1						
	Row percentages (percentage based on Round 1 activity)					
Full-time permanent	88.9	2.2	1.1	7.8	0.0	100.0
Part-time permanent	5.9	47.1	17.6	11.8	17.6	100.0
Casual	0.0	2.3	59.1	21.6	17.0	100.0
Full-time contract	10.0	0.0	2.7	82.6	4.6	100.0
Part-time contract	5.4	1.8	3.6	17.9	71.4	100.0
TOTAL	22.6	2.8	13.6	46.6	14.5	100.0
	Column percentages (percentage based on Round 2 activity)					
Full-time permanent	75.5	15.4	1.6	3.2	0.0	19.1
Part-time permanent	0.9	61.5	4.7	0.9	4.4	3.6
Casual	0.0	15.4	81.3	8.7	22.1	18.7
Full-time contract	20.8	0.0	9.4	82.6	14.7	46.6
Part-time contract	2.8	7.7	3.1	4.6	58.8	11.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

The first panel presents row percentages, which are the percentages relative to Cohort 1's employment type in Round 1. That is, taking the first percentage of employed Cohort 1 graduates with full-time permanent teaching positions in Round 1, 89 per cent were still employed in a full-time permanent capacity six months later, in Round 2. A further 8 per cent had moved to a full-time contract position.

Similarly, of those in a full-time contract position in Round 1, 83 per cent were still employed in this capacity in Round 2. Ten per cent of this group had moved to a full-time permanent position.

This was not the case for those with part-time permanent or casual positions in Round 1. By Round 2, 47 per cent of those in Cohort 1 employed in a part-time permanent position had made no change. Eighteen per cent of them were employed casually and 18 per cent on a part-time contract. For those employed in a casual position in Round 1, 59 per cent were still employed in this capacity in Round 2. Twenty-two per cent had moved to a full-time contract and 17 per cent had moved to a part-time contract.

The second panel presents the figures as column percentages, that is, the percentages expressed in terms of Cohort 1's employment in Round 2. Therefore, while 22.6 per cent of employed Cohort 1 were in a full-time permanent teaching position in Round 2 (as shown in the Totals row in the first panel), 75.5 per cent had been in a full-time permanent position in Round 1. A further 20.8 per cent of those in a full-time position in Round 2 had been in a full-time contract position in Round 1.

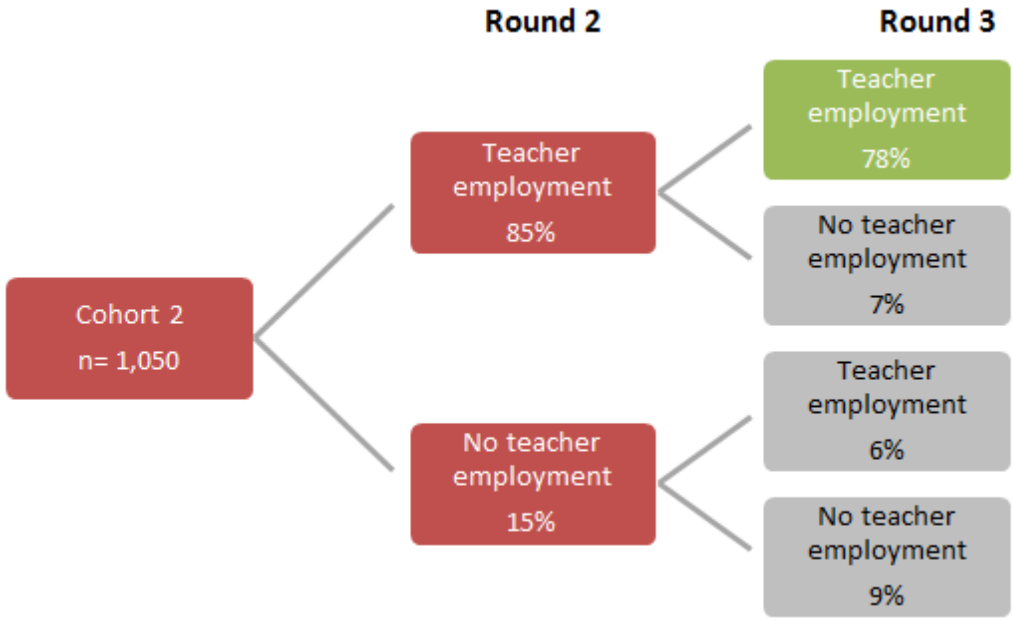
Just over 46 per cent of Cohort 1 was in full-time contract teaching positions in Round 2. Of this group, 82.6 per cent had been in full-time contract positions in Round 1, 8.7 per cent had been employed as casual teachers, and 4.6 per cent had been in a part-time contract.

Less than three per cent of this cohort of graduates was employed in a permanent part-time role in Round 2. Just over 61 per cent had also been in part-time permanent employment in Round 1, just over 15 per cent had been in full-time permanent employment and the same percentage had been employed casually.

Cohort 2 (Round 2 to Round 3): Employment in schools

Figure 8 shows the 1,050 graduates whose teacher employment status can be followed from Round 2 to Round 3, known as Cohort 2. It shows the changes in teaching employment status for these 1,050 respondents over the six-month period from October 2012 to March 2013.

Figure 8. Cohort 2 – by employment as a teacher



In Round 2, 85 per cent of Cohort 2 was teaching. In Round 3, the percentage of Cohort 2 in teaching employment remained steady, at 84 per cent. Seven per cent of Cohort 2 who had been teaching in October 2012 were no longer teaching in March 2013, and six per cent without teaching in October had found employment by the following March.

Cohort 2's employment type is represented in Table 26. This table illustrates the employment type of the 78 per cent with teaching employment in Rounds 2 and 3.

Table 26. Cohort 2 with a teaching position in Rounds 2 and 3 – by employment type

	Employment type in Round 3					
	Full-time permanent	Part-time permanent	Casual	Full-time contract	Part-time contract	**Total**
Employment type in Round 2						
	Row percentages (percentage based on Round 2 activity)					
Full-time permanent	97.8	0.0	0.0	1.6	0.5	100.0
Part-time permanent	15.8	68.4	5.3	10.5	0.0	100.0
Casual	4.0	2.0	54.7	26.7	12.7	100.0
Full-time contract	20.5	1.1	5.5	67.6	5.3	100.0
Part-time contract	9.7	7.5	14.0	30.1	38.7	100.0
TOTAL	33.9	3.3	14.3	39.2	9.3	100.0
	Column percentages (percentage based on Round 3 activity)					
Full-time permanent	66.4	0.0	0.0	0.9	1.3	23.0
Part-time permanent	1.1	48.1	0.9	0.6	0.0	2.3
Casual	2.2	11.1	70.7	12.6	25.3	18.5
Full-time contract	27.0	14.8	17.2	77.0	25.3	44.6
Part-time contract	3.3	25.9	11.2	8.8	48.0	11.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

The first panel presents row percentages, which are the percentages relative to Cohort 2's employment type in Round 2. The first percentage shows that of those in Cohort 2 with full-time permanent teaching positions in Round 2, 97.8 per cent were still employed in a full-time permanent capacity six months later, in Round 3. Just under two per cent had moved to a full-time contract position.

Of those in a full-time contract position in Round 2, 67.6 per cent were still employed in this capacity in Round 3. Just over 20 per cent of this group had moved to a full-time permanent position.

In the case of those with a casual position in Round 2, 54.7 per cent had made no change by Round 3, but 26.7 of this group were in a full-time contract position and 12.7 per cent in a part-time contract role. For those employed in a part-time permanent position in Round 2, 68.4 per cent were still employed in this capacity in Round 3. Just under 16 per cent had moved to a full-time permanent position and just under 11 per cent into full-time contracts.

The second panel presents the figures as column percentages, that is, the percentages expressed in terms of Cohort 2's employment in Round 3. Therefore, while 33.9 per cent of employed Cohort 2 was in a full-time permanent teaching position in Round 3 (as shown in the Totals row in the first panel), 66.4 per cent of this group had been in a full-time permanent position in Round 2. A further 27 per cent of those in a full-time position in Round 3 had been in a full-time contract position in Round 2.

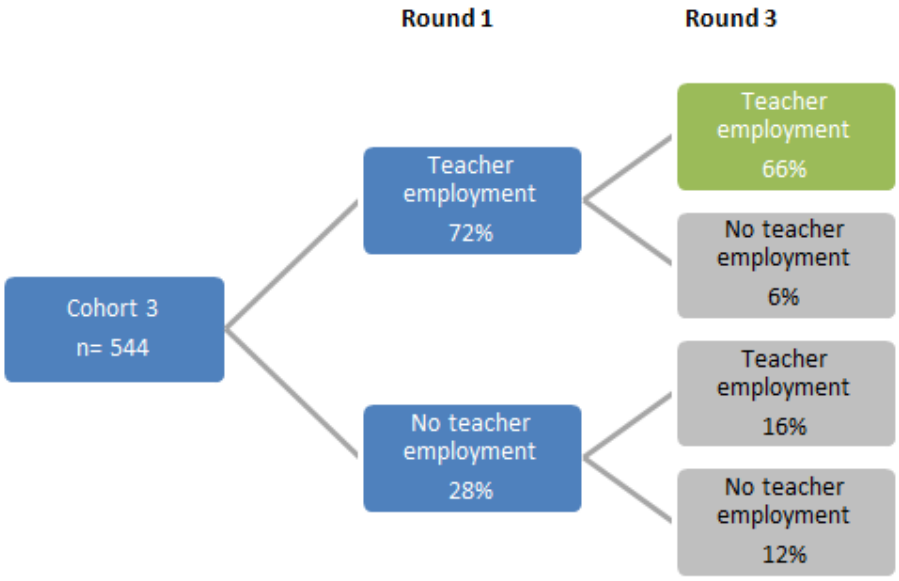
Just under 40 per cent of employed Cohort 2 graduates were in full-time contract teaching positions in Round 3. Of this group, 77 per cent had been in full-time contract positions in Round 2, 12.6 per cent had been employed as casual teachers, and 8.8 per cent had been on a part-time contract.

Just over three per cent of employed Cohort 2 graduates were employed in a part-time permanent role in Round 3. Just over 48 per cent had also been in part-time permanent employment in Round 2, 25.9 per cent had been in part-time contract employment and 14.8 per cent had been in a full-time contract role.

Cohort 3 (Round 1 to Round 3): Employment in schools

Cohort 3 refers to the 544 graduates whose teacher employment status can be followed from Round 1 to Round 3. Figure 9 shows the changes in teaching employment status for these 544 respondents over the 12-month period from March 2012 to March 2013.

Figure 9. Cohort 3 – by employment as a teacher



In Round 1, 72 per cent of Cohort 3 was teaching. In Round 3, the percentage of Cohort 3 in teaching employment had risen to 82 per cent. Six per cent of Cohort 3 who had been teaching in March 2012 was no longer teaching in March 2013, but 16 per cent without teaching in early 2012 had found employment by early 2013.

Cohort 3's employment type is represented in Table 27. This table illustrates the 66 per cent employed as teachers in Rounds 1 and 3, as shown in Figure 9 above.

Table 27. Cohort 3 with a teaching position in Rounds 1 and 3 – by employment type

			Employment type in Round 3			
	Full-time permanent	Part-time permanent	Casual	Full-time contract	Part-time contract	**Total**
Employment type in Round 1						

Row percentages (percentage based on Round 1 activity)

Full-time permanent	90.0	0.0	2.9	5.7	1.4	100.0
Part-time permanent	18.2	54.5	0.0	18.2	9.1	100.0
Casual	7.7	4.6	44.6	30.8	12.3	100.0
Full-time contract	24.8	0.6	6.1	65.5	3.0	100.0
Part-time contract	12.8	7.7	5.1	23.1	51.3	100.0
TOTAL	33.1	3.7	12.3	40.9	10.0	100.0

Column percentages (percentage based on Round 3 activity)

Full-time permanent	54.3	0.0	4.7	2.8	2.9	20.0
Part-time permanent	1.7	46.2	0.0	1.4	2.9	3.1
Casual	4.3	23.1	67.4	14.0	22.9	18.6
Full-time contract	35.3	7.7	23.3	75.5	14.3	47.1
Part-time contract	4.3	23.1	4.7	6.3	57.1	11.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

The first panel presents row percentages, which are the percentages relative to Cohort 3's employment type in Round 1. The first percentage shows that of those in Cohort 3 with full-time permanent teaching positions in Round 1, 90 per cent were still employed in a full-time permanent capacity 12 months later, in Round 3. Just under six per cent had moved to a full-time contract position and 2.9 per cent to a casual position.

Of those in a full-time contract position in Round 1, 65.5 per cent were still employed in this capacity in Round 3. Just under 25 per cent of this group had moved to a full-time permanent position. In the case of those with a casual position in Round 1, 44.6 per cent had made no change by Round 3, but 30.8 of this group were in a full-time contract position and 12.3 per cent in a part-time contract role. For those employed in a part-time permanent position in Round 1, 54.5 per cent were still employed in this capacity in Round 3. Just over 18 per cent had moved to a full-time permanent position and the same percentage to a full-time contract position.

The second panel presents the figures as column percentages, that is, the percentages expressed in terms of Cohort 3's employment in Round 3. Therefore, while 33.1 per cent of employed Cohort 3 graduates were in a full-time permanent teaching position in Round 3 (as shown in the Totals row in the first panel), 54.3 per cent of this group had been in a full-time permanent position in Round 1. A further 35.3 per cent of those in a full-time position in Round 3 had been in a full-time contract position in Round 1.

Just over 40 per cent of employed Cohort 3 graduates were in full-time contract teaching positions in Round 3. Of this group, 75.5 per cent had been in full-time contract positions in Round 1, 14 per cent had been employed as casual teachers, and 6.3 per cent had been on a part-time contract.

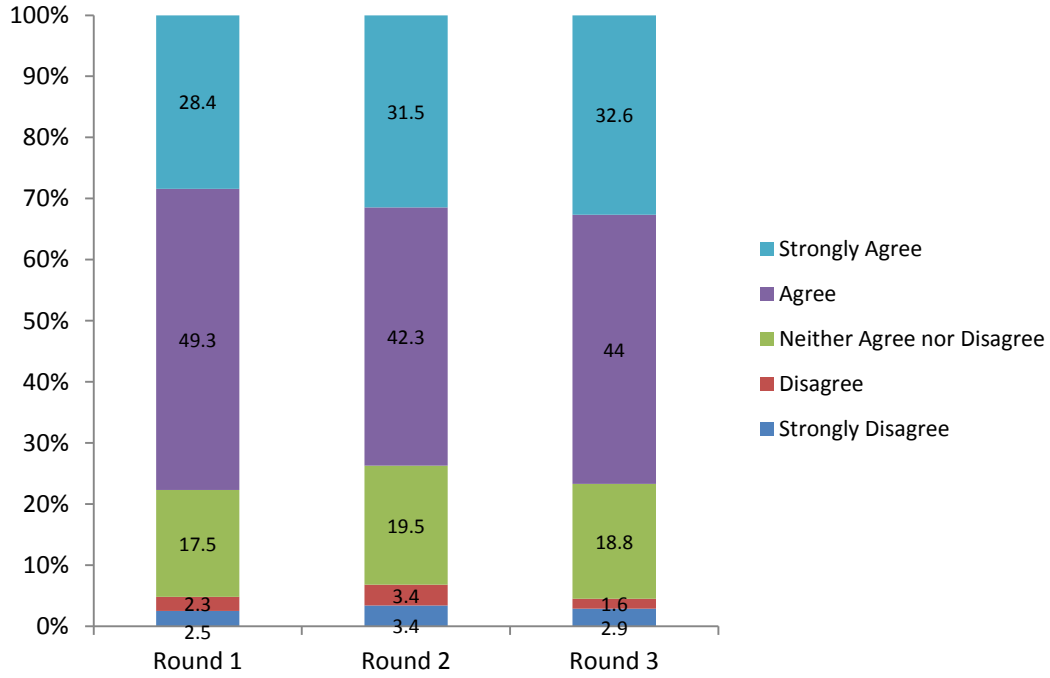
Ten per cent of employed Cohort 3 graduates were employed in a part-time contract role in Round 3. Just over 57 per cent had also been in part-time contract employment in Round 1, 22.9 per cent had been in casual employment and 14.3 per cent had been in a full-time contract role.

Principals' views on employing graduates

Principals were asked in their surveys if they liked to employ graduate teachers. Their responses are shown in Figure 10 below. In all three rounds of principal surveys, about 75 per cent of principals agreed or strongly agreed

that they liked to employ graduate teachers. Between 18 and 20 per cent neither agreed nor disagreed, and between five and seven per cent strongly disagreed.

Figure 10. Principals' willingness to employ first-year graduate teachers



In many of the free text responses, principals and school leaders wrote about feeling a professional responsibility to employ graduate teachers to provide the next generation of teachers opportunities to build their knowledge and practices, e.g. 'I am passionate about this profession and see it as my responsibility to assist new teachers to grow and value add to this profession'. However, many also highlighted the need to ensure they had a balanced staffing profile in their schools, and thus decisions about who to employ often meant 'the best person for the job', and this might include consideration of experience, cultural diversity and age.

While it was noted that some graduates have 'poor interview and (job) application skills', graduates are regularly seen by these principals and school leaders as enthusiastic, energetic, passionate, open to new ideas, willing to learn, and bringing fresh ideas particularly in ICT and e-learning, as well as recent knowledge of current trends in pedagogy. They are also seen as bringing 'a reasonably clean slate' able to be 'moulded' or 'shaped' to the needs of the school, and with no need to 'unlearn' a suite of irrelevant habits and assumptions. While some principals and school leaders said graduates are attractive because they are less expensive to employ, others highlighted the financial and time burden of induction and mentoring, professional development and time release. The decision to employ a graduate was made easier if they had seen them in the classroom and interacting with colleagues in the school context during a final practicum or internship.

Some principals and school leaders in remote schools highlighted the fact that due to their remoteness the only applicants for their positions are graduates, often lure by the offer of a permanent position. However, the difficulties of these postings are also stressed, e.g. 'In our small community it can sometimes be a difficult posting for some teachers who have never left home before. It can be isolating if they do not engage in the community'. Moreover, the work that the remote schools invest in the development of these new teachers often had short-

term benefits: 'First year teachers are always sent out because experienced teachers are not prepared to travel out. It takes two years for them to grow to a strong standard and [then] they transfer out. The school has to start again with a graduate who has little teaching experience and understanding of curriculum'.

3.2.3 Graduates who did not enter teaching

This section presents data on graduates who do not enter teaching; firstly, at discrete points in time – Round 1 (March 2012), Round 2 (October 2012) and Round 3 (March 2013) – and then a longitudinal analysis of changes over time.

Graduates without teaching employment: Discrete Points in Time

Table 28 shows the number and percentage of graduate respondents without a teaching position seeking employment as a teacher. There were 371 graduate teachers who did not have teaching employment in Round 1. Of these, 84 per cent were seeking a teaching position. There were 402 graduate teachers who were not employed as a teacher in a school in Round 2, and of these, 68 per cent were seeking a teaching position. Six months later, in Round 3, of the 352 graduate respondents without a teaching position, 62 per cent were still seeking teaching employment.

From Round 1 to Round 2 (March to October, 2012) there were 16 per cent less unemployed graduates seeking a teaching position. From Round 2 to Round 3 (October 2012 to March 2013) there was 4 per cent less unemployed graduates seeking to be a teacher in a school.

Table 28. Graduate teachers without a teaching position – by seeking employment as a teacher

	Round 1		Round 2		Round 3	
	N	%	N	%	n	%
Yes	310	83.6	275	68.4	217	61.6
No	61	16.4	127	31.6	135	38.4
TOTAL	371	100.0	402	100.0	352	100.0

Graduates without teaching employment: Length of time seeking teaching work

Table 29 shows those respondents who answered 'Yes' in the table above – graduate teachers without a teaching position and seeking employment as a teacher in a school. The table shows the length of time that these graduates had been seeking work.

In Round 1, the highest percentage of unemployed graduates had been seeking a teaching position for between 4–6 months (38 per cent). The Round 2 respondents had the highest percentage seeking teaching from between 1–3 months (52 per cent), then for more than 6 months (40 per cent). In Round 3, the majority of unemployed graduates had been seeking a teaching position for more than 6 months (54 per cent), with the majority of this group (93 out of 117, or 79 per cent) looking for more than 12 months.

Table 29. Graduate teachers seeking employment as a teacher – by length of time seeking this employment

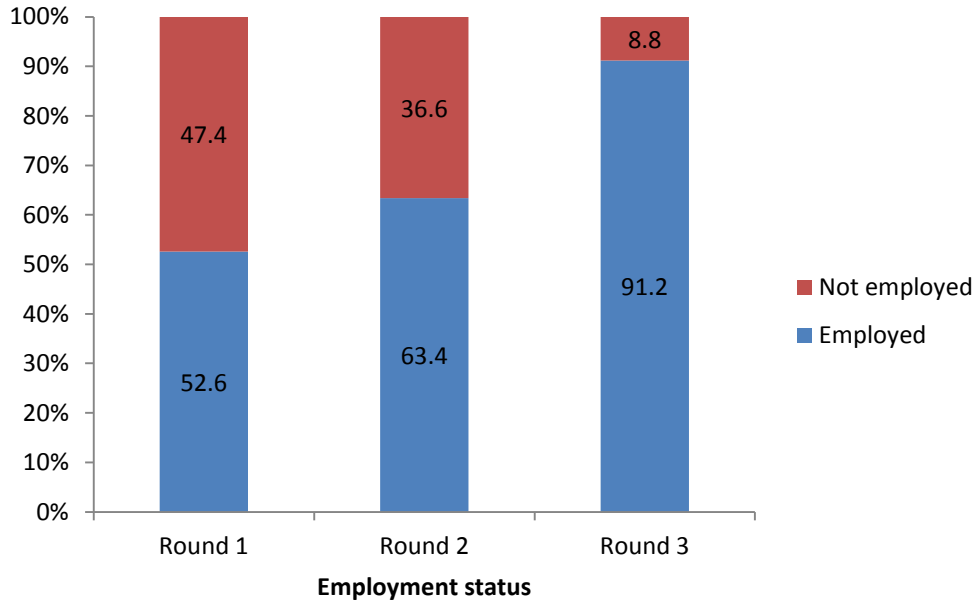
	Round 1		Round 2		Round 3	
			n	%	n	%
1-3 months	112	36.1	141	51.6	56	25.8
4-6 months	118	38.1	22	8.1	44	20.3
More than 6 months	80	25.8	110	40.3	117	54.0
[7-12 months][1]					[24][2]	[11.1]
[More than 12 months]					[93][2]	[42.9]
TOTAL	310	100.0	273	100.0	217	100.0

Note: 1. Bracketed categories and numbers apply to Round 3 only

2. Of the number looking for work for more than 6 months (117), 79 per cent of this group had been seeking teaching employment for more than 12 months and 21 per cent for 7-12 months.

Figure 11 shows graduates without a teaching position and the employment status of these graduates in jobs other than school teaching. A majority of these graduates in all three rounds did have a job outside teaching, rising from 53 per cent in Round 1 to 63 per cent in Round 2, and then to 91 per cent in Round 3.

Figure 11. Graduate teachers without a teaching position – by current employment status



Graduate teachers working outside teaching – by industry sector

Table 30 shows the industry sector where the graduates without a teaching position were working at the time of the three surveys. The largest percentage were working in the broader education sector. This is consistent in all three rounds (43 per cent in Round 1, 34 per cent in Round 2, and 41 per cent in Round 3). Other sectors where a high percentage of graduate teachers gained employment included Retail Trade (18 per cent in Round 1, 14 per cent in Round 2, and 10 per cent in Round 3), and Health and Community Services (11 per cent in Round 1, 12 per cent in Round 2, and 14 per cent in Round 3).

Table 30. Graduate teachers without a teaching position – by industry sector of current employment

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Agriculture, Forestry and Fishing	2	1.0	4	1.6	5	1.6
Mining	2	1.0	6	2.4	2	0.6
Manufacturing	3	1.5	3	1.2	5	1.6
Electricity, Gas and Water supply	1	0.5	1	0.4	1	0.3
Construction	1	0.5	3	1.2	3	0.9
Wholesale trade	0	0.0	3	1.2	1	0.3
Retail trade	34	17.5	36	14.2	32	10.0
Accommodation, Cafes and Restaurants	6	3.1	21	8.3	18	5.6
Transport and storage	1	0.5	2	0.8	4	1.2
Communications services	10	5.2	6	2.4	8	2.5
Finance and Insurance	3	1.5	3	1.2	9	2.8
Property and business services	1	0.5	4	1.6	3	0.9
Govt. Administration and Defence	8	4.1	16	6.3	15	4.7
Education	84	43.3	86	34.0	131	40.8
Health and Community Services	21	10.8	30	11.9	46	14.3
Cultural and Recreational services	6	3.1	17	6.7	22	6.9
Personal and other services	11	5.7	12	4.7	16	5.0
TOTAL	194	100.0	253	100.0	321	100.0

Since Round 1 results showed that many graduates without a teaching job were still working in the education sector, we asked participants in Round 2 to elaborate on their specific role in the education sector. The results are shown in Table 31.

Table 31. Graduate teachers without a teaching position currently employed in the education sector –by role

	Round 2	
	n	%
Tutoring/private teaching	17	19.5
Early childhood education	15	17.2
Teacher's aide	14	16.1
'Outside school hours' child care	11	12.6
Formal tertiary education	10	11.5
Community-based adult education	1	1.1

Education administration	9	10.3
Public service	3	3.4
Education Department – Head office	1	1.1
Education Department – Regional office	1	1.1
Other	5	5.7
TOTAL	87	100.0

The highest percentage of graduates were employed as tutors, almost 20 per cent. The next most common role was working in early childhood education (17 per cent), followed by being a teacher's aide (16 per cent), and working in 'outside school hours' child care centres (13 per cent).

Graduate teachers currently working outside teaching – by employment type

Figure 12 shows the percentages for employment type for those graduates with employment outside of teaching in a school. From March 2012 to March 2013 (Round 1 to 3) the percentage of graduate respondents with full-time work outside of teaching rose from 27 per cent to 41 per cent. The percentage of graduates with casual work outside of teaching fell from 47 per cent to 39 per cent.

Figure 12. Graduate teachers currently employed outside teaching in a school – by current employment type

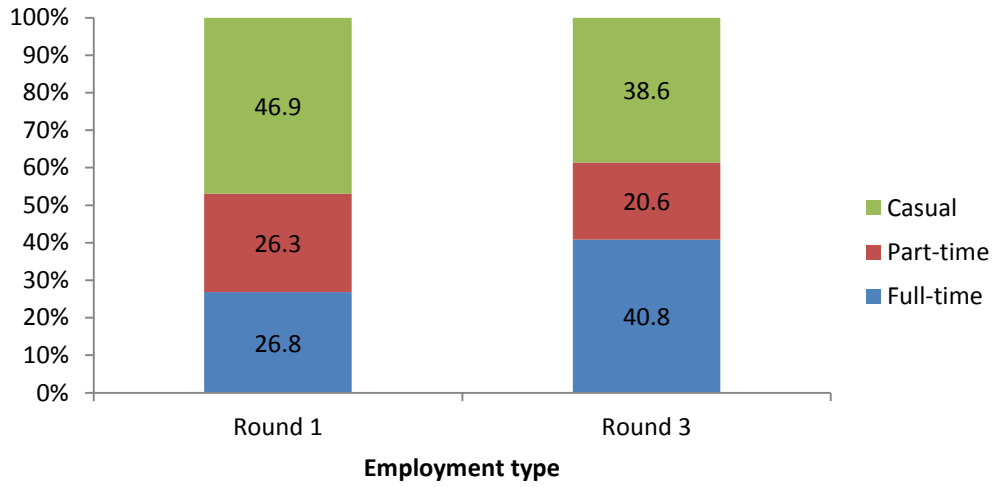


Table 32 shows the type of employment for those employed in the three sectors with the highest percentage of graduate teacher employment outside of teaching

Table 32. Graduate teachers currently employed outside teaching in a school – by key employment sectors and current employment type

Employment type	Round 1 %	Round 3 %
Full-time		
Retail trade	17.6	9.4
Education	22.6	65.6
Health and Community services	23.8	26.1
Part-time		
Retail trade	32.4	25.0
Education	20.2	8.4
Health and Community services	38.1	26.1
Casual		
Retail trade	50.0	65.6
Education	57.1	26.0
Health and Community services	38.1	47.8

In Round 1, the three industry sectors showed similar patterns for the percentage in full-time employment (from 18-24 per cent). Part-time employment was lower for those in the education sector (20 per cent) than for those in Retail (32 per cent) and Health (38 per cent). Casual employment was highest for those in the education sector (57 per cent) and lowest for those in Health (38 per cent).

In Round 3, there was a clear difference in employment type for those in the education sector from the other two sectors. The majority of graduates without a teaching position, employed in another capacity in the education sector, had full-time work (66 per cent). In the Retail Trade sector, two-thirds of graduates were employed on a casual basis. In Health and Community Services, nearly half were employed on a casual basis (48 per cent) and the other half equally divided between full-time and part-time employment (26 per cent each).

Graduates without teaching employment: Longitudinal analysis

The numbers in each cohort who were not employed as a teacher in a school are as follows:

- **Cohort 1 (able to be followed from March 2012 – October 2012. N=74)**
- **Cohort 2 (able to be followed from October 2012 – March 2013. N=92)**
- **Cohort 3 (able to be followed from March 2012 – March 2013. N=67)**

Cohort 1 (Round 1 to Round 2): Graduates without teaching employment, seeking teaching employment

Figure 13 shows the changes in the percentages of the 74 unemployed graduate teachers seeking teaching employment in Rounds 1 or 2 (Cohort 1).

Of Cohort 1 who had not secured a teaching position over the two rounds of surveys, there was a slight decrease in the percentage who were seeking teaching employment – from 70 per cent in Round 1 to 68 per cent in Round 2. Of Cohort 1 not seeking teaching employment, in Round 1 this was 30 per cent, and in Round 2 it had risen slightly to 32 per cent. For the majority of this cohort, their inclination or disinclination to secure a teaching position had not changed over the period of the two surveys.

Figure 13. Cohort 1 without teaching employment – by seeking teaching employment

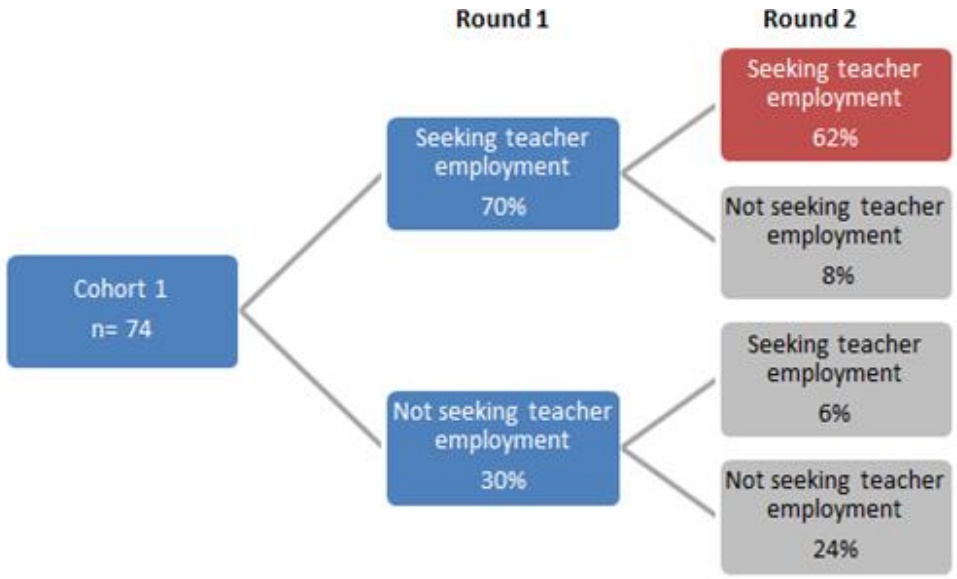


Table 33 shows the change in outside of teaching employment status for Cohort 1 – graduate teachers who did not have a teaching position over the two rounds of the survey.

Table 33. Cohort 1 without teaching employment – by employment outside teaching

	Employed outside of teaching in Round 2		
	Yes	No	**Total**
Employed outside of teaching in Round 1			
Row percentages (percentage based on Round 1 activity)			
Yes	89.7	10.3	100.0
No	37.1	62.9	100.0
TOTAL	64.9	35.1	100.0
Column percentages (percentage based on Round 2 activity)			
Yes	72.9	15.4	52.7
No	27.1	84.6	47.3
TOTAL	100.0	100.0	100.0

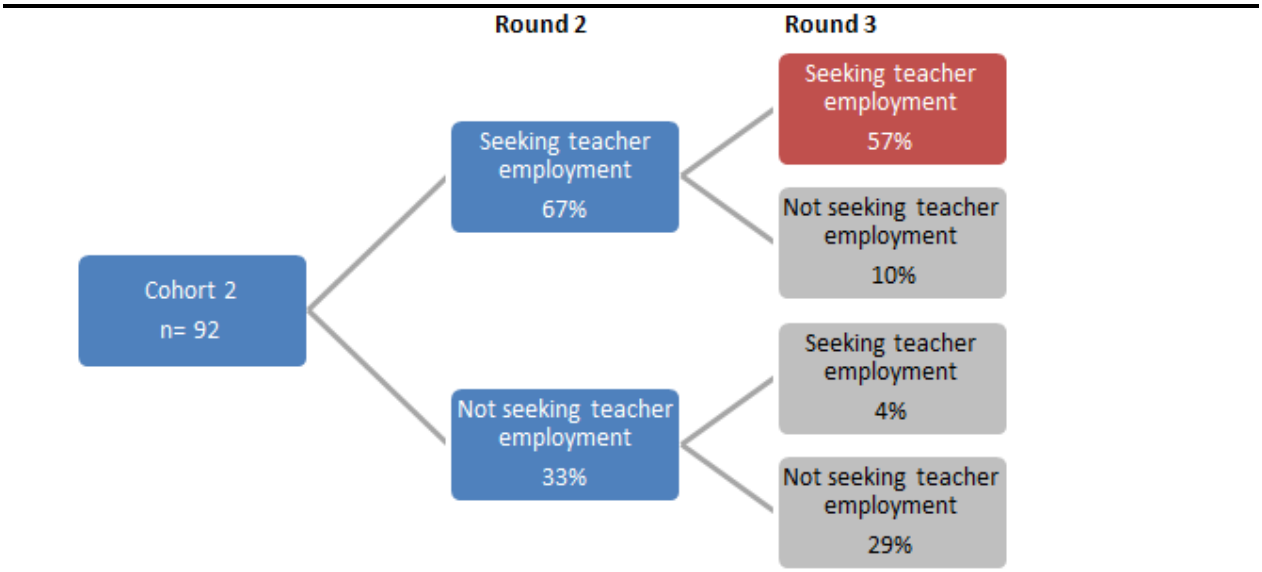
The first panel presents row percentages, which are the percentages relative to Cohort 1's employment outside of teaching in Round 1. The table shows that of those with a job outside teaching in Round 1, 89.7 per cent still had a job outside of teaching in Round 2. The first panel also shows that of those who were unemployed in Round 1, 62.9 per cent were still unemployed in Round 2.

The second panel presents the figures as column percentages, that is, the percentages expressed in terms of Cohort 1's employment outside teaching in Round 2. The table shows that of those with a job outside teaching in Round 2, 72.9 per cent had a job outside of teaching earlier in the year, in Round 1. The second panel also shows that of those who were unemployed in Round 2, 84.6 per cent were unemployed in Round 1.

Cohort 2 (Round 2 to Round 3): Graduates without teaching employment, seeking teaching employment

The following table shows the changes in the percentages of the 92 graduates (Cohort 2) seeking teaching employment. This group of graduates were not employed in Rounds 2 or 3.

Figure 14. Cohort 2 without teaching employment – by seeking teaching employment



For Cohort 2, there was a fall in the percentage of graduates who were seeking teaching employment – from 67 per cent in Round 2 to 61 per cent in Round 3. In Round 2, 33 per cent of Cohort 2 were not seeking employment but this had risen to 39 per cent by Round 3. For the majority of this cohort, their inclination or disinclination to secure a teaching position did not change over the period of six months in Round 2.

Table 34 shows the change in employment status for Cohort 2 who did not have a teaching position over the two rounds of the survey, Rounds 2 and 3.

Table 34. Cohort 2 without teaching employment – by employment outside of teaching

	Employed outside of teaching in Round 3		
	Yes	No	**Total**
Employed outside of teaching in Round 2			
Row percentages (percentage based on Round 2 activity)			
Yes	50.0	50.0	100.0
No	22.2	77.8	100.0
TOTAL	38.1	61.9	100.0
Column percentages (percentage based on Round 3 activity)			
Yes	75.0	46.2	57.1
No	25.0	53.8	42.9
TOTAL	100.0	100.0	100.0

The first panel presents row percentages, which are the percentages relative to Cohort 2's employment outside of teaching in Round 3. The table shows that of those with a job outside of teaching in Round 2, 50 per cent still had a job outside of teaching in Round 3. The first panel also shows that of those who were unemployed in Round 2, 77.8 per cent were still unemployed in Round 3.

The second panel presents the figures as column percentages, that is, the percentages expressed in terms of Cohort 2's employment outside teaching in Round 3. The table shows that of those with a job outside of teaching in Round 3, 75 per cent had a job outside of teaching late in the previous year, in Round 2. The second panel also shows that of those who were unemployed in Round 3, 53.8 per cent were unemployed in Round 2.

Cohort 3 (Round 1 to Round 3): Graduates without teaching employment, seeking teaching employment

Cohort 3 refers to the 67 unemployed graduate teachers who participated in Round 1 to Round 3 of the Graduate Teacher Survey. Figure 15 shows that, of Cohort 3 who had not secured a teaching position over the two rounds of surveys, there was again a fall in the percentage of those who were seeking teaching employment – from 72 per cent in Round 1 to 64 per cent in Round 3.

Of Cohort 3 not seeking teaching employment, in Round 1 this was 28 per cent and in Round 3 it had risen to 36 per cent. For the majority of this cohort, their inclination or disinclination to secure a teaching position had not changed over the period of 12 months.

Figure 15. Cohort 3 without teaching employment – by seeking teaching employment

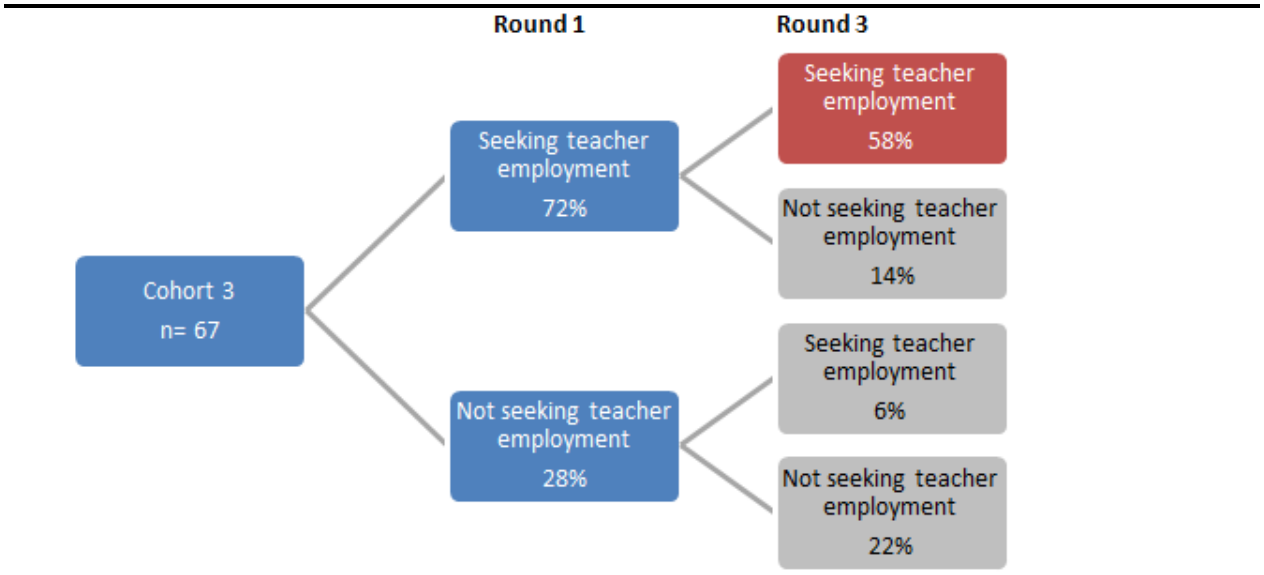


Table 35 shows the change in employment status for Cohort 3 who did not have a teaching position over the two rounds of the survey.

Table 35. Cohort 3 without teaching employment – by employment outside of teaching

	Employed outside of teaching in Round 3		
	Yes	No	**Total**
Employed outside of teaching in Round 1			
Row percentages (percentage based on Round 1 activity)			
Yes	57.8	42.2	100.0
No	28.0	72.0	100.0
TOTAL	42.1	57.9	100.0
Column percentages (percentage based on Round 2 activity)			
Yes	65.0	34.5	47.4
No	35.0	65.5	52.6
TOTAL	100.0	100.0	100.0

The first panel presents row percentages, which are the percentages relative to Cohort 1's employment outside of teaching in Round 1. The table shows that of those with a job outside teaching in Round 1, 57.8 per cent still had a job outside of teaching in Round 3. The first panel also shows that of those who were unemployed in Round 1, 72 per cent were still unemployed in Round 3. This is a higher percentage than for the other two cohorts, and it measures a 12-month period, whereas the other two cohort datasets are measured over six month periods. The second panel presents the figures as column percentages, that is, the percentages expressed in terms of Cohort 3's employment outside of teaching in Round 3. The table shows that of those with a job outside teaching in Round 3, 65 per cent had a job outside of teaching in the previous year, in Round 1. The second panel also shows that of those who were unemployed in Round 3, 65.5 per cent were unemployed in Round 1.

3.3 Teacher Mobility

This section addresses the issue of teacher mobility, first, by briefly defining this phenomenon and then by looking at the types and causes of early career teacher movement revealed by this study. Teacher mobility has received more comprehensive attention only recently in a broader attempt to understand and manage teacher turnover.

Previous large-scale studies into the teaching workforce have captured some key mobility patterns relevant to this study. For example, McKenzie et al. (2011) explored career paths in teaching and reported that 40 per cent of primary teachers and 36 per cent of secondary teachers surveyed in 2010 spent less than two years at their first school (as compared to 42 per cent and 40 per cent in 2007 respectively). On average, movers spent about 3 years in their first school, with only 5 per cent spending more than 10 years at their first school. They also looked at the patterns of teacher mobility across school sectors, states and in/outside metropolitan cities. In comparison to 2007, movement between sectors appears to have slowed in 2010, with 81 per cent of primary teachers and 67 per cent of secondary teachers working in the same sector as their first school (71 per cent of primary and 60 per cent of secondary in 2007).

Similarly, there was some decrease in moving away from government schools from 20 per cent in 2007 to 13 per cent in primary in 2010 and from 28 per cent to 22 per cent in secondary. The data showed that about 80 per cent of teachers who had moved schools were teaching in the same state or territory as their first school. Compared to 2007, a higher percentage of primary teachers began teaching in a school outside of a capital city (61 per cent in 2010, 55 per cent in 2007).

Mobility and attrition, according to Imazeki (2005), are the biggest challenges that many education systems face. Ingersoll (2004) estimated that both types of teacher turnover have approximately the same percentage in the USA. It has been recognised that teacher turnover has both significant financial and education implications and, in particular, the attrition of beginning teachers (Darling-Hammond, 2003; Imazeki, 2005). Early attrition and mobility have an impact on education quality in certain schools (e.g. disadvantaged, rural and remote), as well as affecting school staffing more broadly. In both cases teachers need to be replaced. However, mobility has a more direct impact on schools than on systems, and hence is a less problematic issue for governments.

From the point of view of school administration, teachers who move to another school, system or place pose various retention and turnover issues. From the perspective of state or federal governments, movers are not leaving the profession and thus do not contribute to overall teacher shortages. Therefore, if movers are not considered and examined along with leavers, total teacher turnover appears far less problematic than it is for those viewing this issue from a school management perspective (R. Ingersoll, 2004).

In relation to early career teachers, (Cochran-Smith, 2004, p.846) argue that stayers and leavers are not a homogenous group: 'rather there are multiple variations of practice-coupled-with-career decisions, some of which are desirable and some are not.' Some attrition is desirable, for example if beginning teachers perceive themselves, or are perceived by others, as not well-suited to teaching, but some attrition is not (e.g. the attrition of highly-qualified graduates).

Some attrition is temporary (e.g. teachers leaving to complete a post-graduate degree, raise a family, or take a long period of leave before returning to teach), and some is inevitable (e.g. teachers retiring). Teacher mobility, however, is related more to workplace issues such as student discipline problems, lack of support and mentoring arrangements, poor working conditions, conflicts with administration, lack of participatory opportunities in school decision-making and governance (Cochran-Smith, 2004; Darling-Hammond, 2003; R. Ingersoll, 2004).

LTEWS and the analysis discussed in this section explores the mobility of graduates across only one year and so drawing similar generalisations about the patterns of mobility is not feasible.

Box 3 lists the main findings for Section 3.3.

Box 3. Main Findings: Teacher mobility

- Most graduate teachers stayed to teach in the state/territories in which they completed their teacher preparation. For example, most of the graduates of teacher education programs in New South Wales, Victoria, Queensland and South Australia were employed in those states, and at the end of the data collection period, about 85 per cent of graduates in these four states had been teaching there for more than one year.
- Thirty-two per cent of graduates taught in schools in areas where they lived prior to entering the university program and 68 per cent taught in schools that were located in other suburbs or areas.
- Two-thirds reported teaching in schools located in areas with a similar population size, socio-economic size, socio-economic and cultural diversity profile as that in which they lived prior to their teacher preparation.
- Of those who were employed as a teacher early in their first year after graduation, 57 per cent of them remained employed in the same school 12-months later, early in their second year. Twenty per cent of these graduate teachers moved to another school usually to secure full-time, often more permanent employment. Other reasons included lack of support in their initial school and family/personal reasons.

How mobile are graduates in their early teaching career?

Table 36 shows the movement of graduates from Round 1 to Round 2, across states and territories. The total number of graduates who had teaching positions at both points-in-time, and who could be tracked across the two survey rounds (a six-month period) numbered 458.

Table 36. Graduate mobility between schools from Round 1 to Round 2 – state/territory

	Round 2									
	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Outside Aus	Total
Round 1										
NSW	96.9	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1.0	100.0
VIC	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
QLD	0.0	0.0	98.0	0.0	0.0	0.0	1.0	0.0	1.0	100.0
SA	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
WA	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
TAS	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
NT	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0
O/Aust.	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.7	100.0

Note: n=458

The table shows that for those graduates with teaching positions in Round 1 in Victoria, SA, WA, Tasmania, the Northern Territory and the ACT, all of them were still in that same state or territory in Round 2. There was a small percentage of change from Round 1 to Round 2 for NSW, with two per cent going to Queensland and one per cent obtaining an overseas teaching position. For Round 1 graduates from Queensland, 98 per cent were still in Queensland in Round 2, one per cent moved to a school in the Northern Territory and one per cent overseas. As the numbers represented in each cell in the table above are very small, the small percentage of graduates who have moved actually totals less than ten, so these state/territory changes should be treated with caution. Overall, the data shows that nearly all graduates did not move state/territory between the beginning and the end of their first year in teaching.

Table 37 shows the movement of graduates from time two (Round 2) to time three (Round 3) across states and territories. The total number of graduates who had teaching positions at both points in time and who could be tracked across the two survey rounds (a six month period) numbered 819.

Table 37. Graduate mobility between schools from Round 2 to Round 3 – by state/territory

	Round 3									
	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Outside Aust.	Total
Round 2										
NSW	96.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	1.3	100.0
VIC	0.0	99.3	0.0	0.0	0.0	0.0	0.0	0.0	0.7	100.0
QLD	0.0	0.5	98.9	0.0	0.0	0.5	0.0	0.0	0.0	100.0
SA	0.0	0.0	0.0	94.1	0.0	0.0	2.9	0.0	2.9	100.0
WA	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
TAS	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
NT	0.0	0.0	0.0	0.0	3.1	0.0	93.8	3.1	0.0	100.0
ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.6	2.4	100.0
O/Aust.	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	93.3	100.0

Note: n=819

The table shows that for those graduates with teaching positions in Round 2 in WA and Tasmania, there was no movement between states in Round 3. There was less than a four per cent change from Round 2 to Round 3 for graduate teachers in NSW, Victoria, Queensland and ACT. Of the graduates teaching in South Australian in Round 2, 2.9 per cent were in the Northern Territory in Round 3 and 2.9 per cent had a teaching position overseas. Of the graduates teaching in the Northern Territory in Round 2, 3.1 per cent were teaching in WA in Round 3 and 3.1 per cent in the ACT. Graduates who were teaching overseas in Round 2 showed the greatest mobility, with 6.7 per cent changing their location from Round 2 to Round 3 – all these graduates were in Queensland in Round 3. Overall, the data shows that nearly all graduates did not move state/territory between the end of their first year and the beginning of their second year in teaching.

Table 38 below shows the movement of graduates from Round 1 to Round 3, across states and territories. The total number of graduates who had teaching positions at both points in time and who could be tracked across the two survey rounds (a 12-month period) numbered 354.

Table 38. Graduate mobility between schools from Round 1 to Round 3 – state/territory

	Round 3									
	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Outside Aust.	Total
Round 1										
NSW	94.8	0.0	2.6	0.0	0.0	0.0	0.0	0.0	2.6	100.0
VIC	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
QLD	0.0	1.1	97.9	0.0	0.0	0.0	1.1	0.0	0.0	100.0
SA	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
WA	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
TAS	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
NT	0.0	0.0	0.0	0.0	7.1	0.0	92.9	0.0	0.0	100.0
ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0
O/Aus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

Note: n=354

The table shows that for those graduates with teaching positions in Round 1 in Victoria, SA, WA, Tasmania and the ACT there was no movement between states in Round 3. The number of graduates who did change schools across states and territories in the 12-month period was less than 10, so overall nearly all graduates remained in the same state/territory from the beginning of their first year of teaching to the beginning of their second year.

Discrete point-in-time of graduate teachers with a teaching position – by characteristics of school location: Round 3 (March 2013)

In Round 3, graduate respondents with a teaching position were asked for some information about the area in which their school was located. They were asked if they were teaching in a school where they had lived prior to enrolling in their teacher education program. They were also asked if they had lived in an area similar to where their current school was located in terms of: population size, socio-economic make-up, and cultural diversity. Graduate responses are shown in Table 39.

Table 39. Graduates with a teaching position in Round 3 – by characteristics of school location

	Yes		No		Total	
Lived in:	n	%	n	%		
The suburb/town where your school is located	578	32.2	1,219	67.8	1,797	100.0
Similar population size	1,161	64.6	636	35.4	1,797	100.0
Similar socio-economic make-up	1,120	62.3	677	37.7	1,797	100.0
Similar cultural diversity	1,118	62.2	679	37.8	1,797	100.0

The data show that 32 per cent of graduates taught in schools in the area where they had lived prior to entering their teacher education program. Sixty-eight per cent taught in schools that were located in other suburbs or areas. This pattern reflects their geographic preferences as graduate teachers and the availability of jobs. Graduates decided to move to other geographic areas or schools for a wide range of reasons. These reasons are discussed in more details the following sections (See Section 3.5). When looking at graduates' schools with similar location characteristics to where graduates had lived prior to their teacher education program, two-thirds of

graduates stated that they were in areas with similar population size, socio-economic make-up, or cultural diversity.

Longitudinal analysis of teacher mobility

The following tables show information from graduates who responded to more than one Graduate Teacher Survey. As outlined in Chapter 2, these respondents formed three cohorts for the purpose of data analysis and are grouped as follows:

- Cohort 1 (able to be followed from March 2012 – October 2012)
- Cohort 2 (able to be followed from October 2012 – March 2013)
- Cohort 3 (able to be followed from March 2012 – March 2013)

Cohort 1 (Round 1 to Round 2): Mobility between schools

Table 40 shows all Cohort 1 respondents who indicated whether or not they were currently teaching in the Round 1 survey. As can be seen from the totals at the bottom, there were 499 respondents who were teaching and 186 respondents without a teaching position in Round 1. The data are based on teaching status and the name of the school given by respondents in each round. The rows in the table show where Cohort 1 respondents were in Round 2, in terms of teaching employment and movement between schools.

Table 40. Cohort 1 mobility between schools

	Employment in Round 1					
	Teaching		Not teaching		All	
	n	%	n	%	n	%
Employment in Round 2						
Same school	377	75.6			377	55.0
Different school	65	13.0			65	9.5
Newly employed			68	36.6	68	9.9
No longer employed	15	3.0			15	2.2
Not teaching			72	38.7	72	10.5
Insufficient information	42	7.2	46	24.7	88	12.8
TOTAL	499	100.0	186	100.0	685	100.0

It can be seen that of those who were employed as a teacher in Round 1, 75.6 per cent were still in the same school six months later. Thirteen per cent had moved to a different school over this period and 3 per cent were no longer teaching (and therefore did not have a school).

For those who were not employed as a teacher in Round 1, 36.6 per cent had gained teaching employment by Round 2 and 38.7 per cent were still not employed as a teacher. Just under a quarter of Cohort 1 who were not employed in Round 1 had named schools that were not able to be matched to the school data provided by the former Department of Education Employment and Workplace Relations-DEEWR.

Cohort 2 (Round 2 to Round 3): Mobility between schools

Table 41 below shows Cohort 2 respondents who indicated whether they were currently teaching in the Round 2 survey. As can be seen from the totals, there were 894 respondents who were teaching and 156 respondents without a teaching position in Round 2. The rows in the table show where Cohort 2 respondents were in Round 3, in terms of teaching employment and movement between schools.

Table 41. Cohort 2 mobility between schools

	Employment in Round 2					
	Teaching		Not teaching		All	
	n	%	n	%	n	%
Employment in Round 3						
Same school	496	55.5			496	47.2
Different school	164	18.3			164	15.6
Newly employed			46	29.5	46	4.4
No longer employed	50	5.6			50	4.8
Not teaching			92	59.0	92	8.8
Insufficient information	184	20.6	18	11.5	202	19.2
TOTAL	894	100.0	156	100.0	1,050	100.0

Of those who were employed as a teacher in Round 2, 55.5 per cent were still in the same school six months later. For Cohort 2, these six months ran from the end of the school year in 2012 to early in the school year in 2013. Because of this, it is to be expected that the movement between schools for Cohort 2 will be higher than for Cohort 1, and it is: 18. 3 per cent had changed schools compared to 13.0 per cent of Cohort 1. Just under 6 per cent were no longer teaching and there was insufficient information for just over 20 per cent of Cohort 2 who were teaching in Round 2. For those who were not employed as a teacher in Round 2, 29.5 per cent had gained teaching employment by Round 3 and 59.0 per cent were still not employed as a teacher.

For all of Cohort 2 who could be tracked in terms of school employment and/or school name, at the time of Round 3, 47.2 per cent were still in the same school as they had been in Round 2, 15.6 per cent had moved to a different school, 4.4 per cent had gained employment as a teacher, 4.8 per cent had left teaching and 8.8 per cent were not teaching in Round 2 or Round 3.

Cohort 3 (Round 1 to Round 3): Mobility between schools

Table 42 shows all Cohort 3 respondents who indicated whether or not they were currently teaching in the Round 1 survey. As can be seen from the totals, there were 392 respondents who were teaching and 152 respondents without a teaching position in Round 1. The rows in the table show where Cohort 3 respondents were in Round 3, in terms of teaching employment and movement between schools.

Table 42. Cohort 3 mobility between schools

	Employment in Round 1					
	Teaching		Not teaching		All	
	n	%	n	%	n	%
Employment in Round 3						
Same school	224	57.1			224	41.2
Different school	78	19.9			78	14.3
Newly employed					60	11.0
No longer employed	29	7.4	60	39.5	29	5.3
Not teaching			64	42.1	64	11.8
Insufficient information	61	15.6	28	18.4	153	16.4
TOTAL	392	100.0	152	100.0	608	100.0

Of those who were employed as a teacher in Round 1, 57.1 per cent were still in the same school 12-months later. Just under 20 per cent had moved to a different school over this period and 7.4 per cent were no longer teaching

(and therefore did not have a school). For those who were not employed as a teacher in Round 1, 39.5 per cent had gained teaching employment by Round 3 and 42.1 per cent were still not employed as a teacher.

For all of Cohort 3 who could be tracked in terms of school employment and/or school name, at the time of Round 3, 41.2 per cent were still in the same school as they had been in Round 1, 14.3 per cent had moved to a different school, 11.0 per cent had gained employment as a teacher over the 12 month period, 5.3 per cent had left teaching and 11.85 per cent were not teaching in Round 1 or Round 3.

In more general terms, the analysis of the qualitative data demonstrates that the main reason for teacher mobility revealed in this study, was better employment opportunities. Most of the movers were employed on short-term contracts or in casual relief positions and moved to different schools, systems or geographic areas as soon as they secured full-time positions. Based on the interviews data, 40 per cent of the respondents (N=33) who participated in all three interview rounds remained on short-term contracts or casual relief positions by the third round of interviews, conducted within 12-months over two calendar years.

The data also show that a majority of early career teachers remained on short-term contracts, and this will continue to be the major cause of mobility and teacher turnover in the future. This pattern of beginning teacher mobility is reflective of the marketplace and system changes that have reduced demand for teachers in certain geographic areas and prompted different recruitment patterns. The following graduate teacher's reflection echoed that of several others who have made, or are considering, the option to move interstate or overseas for better teaching prospects.

All my efforts to find permanent employment as a secondary school teacher in my field have failed. I have been either unemployed or a casual teacher for over a year and a half and it is very frustrating. I am now seeking work with NGOs and considering moving overseas so that I can work as a teacher.

Graduate teacher, casual relief teaching, metropolitan area

From the interviews and survey free text responses, both graduate teachers and principals attribute the difficulty in finding employment to the perceived overproduction of teachers and the lack of full-time jobs (*'there are too many graduates for primary teachers, and not enough jobs'*). Contributing factors in this regard are retirement delays, an 'out of service' pool of teachers, public sector cutbacks (e.g. freezing salaries), affordability of private education, etc. As some studies of teacher employability show, the supply of new teachers is closely affected by the economic cycle. However, it does not reflect the cycle directly but rather lags behind it, contributing to some increase in teacher casualization or unemployment when the economy starts to perform better. The interview and free text responses illustrate four types of mobility (See Box 4).

Respondents to the survey indicated that many were employed as replacement teachers filling short-term vacancies. The age-profile of the teaching profession, and consequently both retirement levels and maternity leave, either temporary or semi-permanent, affect the demand for replacement teachers. Another reason is the uneven level of economic activity in urban and rural locations that creates an over-supply of teachers in some geographical areas and an undersupply in others. The interplay of such factors was mentioned by participants in

Box 4. Four types of early career teacher mobility

- **Transnational mobility.** This type involves beginning teachers who seek work opportunities overseas or return/migrate to Australia to teach.
- **Transfers between systems.** This type of mobility occurs due to multiple reasons, including work conditions, the state of teacher support, student behaviour, levels of job satisfaction, availability of professional development opportunities, or due to the commuting distance between the school and the home.
- **Transfers within the system.** This type of mobility reflects how beginning teachers perceive their work conditions, and can be related predominantly to the casualization of the teaching workforce and the increase of contract positions. In addition, the respondents name some of the reasons mentioned in the above point.
- **Exits from the system.** This type of mobility can be considered as attrition. However, it can also be perceived as mobility in cases when beginning teachers plan to return to teaching later on. Such teachers explain their decision to exit the profession in order to gain more experience in allied jobs (administrative, teaching aides, etc.). Others decided to study further and return to teaching thereafter.

this study, particularly by beginning teachers who were mature, mid-career changers, and were from dual-income families that lack mobility. The patterns of mobility also show that some schools suffer more from the effects of shortages than others, most notably those with large numbers of low socio-economic status students. Free text comments taken from each of the survey rounds show the contextual variation that occurs across Australia:

- 'There are few full-time/part-time employment positions on the Central Coast (my residence) and Sydney regions within my preferences. How do I get experience if no one will give me a go?' [Round 1]
- 'Availabilities in my KLA' [Round 1]
- 'The rural location of positions, which I am not able to pursue'. [Round2]
- 'Availability of HPE positions' [Round2]

In this regard, teacher mobility is as relevant to the retention of qualified teachers as attrition. Evidence suggests that teachers tend to move away from low-performing and low socio-economic schools (Hanushek, Kain, & Rivkin, 2004). Beginning teachers generally require three to five years of teaching experience to become entirely effective at improving student learning outcomes (Rivkin & Hanushek, 2005). Some studies show that more effective and experienced teachers are less likely to leave their schools or the profession, while inexperienced teachers are more likely to leave (e.g. Kreig, 2004). As a result, schools with high mobility rates tend to fill vacant positions with new teachers, leading to the concentration of inexperienced and less effective teachers among their staff. In this context, teacher retention has an important role in improving students' learning. However, the mobility of beginning teachers, beyond its relationship to effectiveness and experience, is also dependent on workplace conditions. The following sections will elaborate on these issues in more detail. The following illustrates the four types of early career teacher mobility based on the analysis of findings.

3.4 Attraction, Retention and Attrition

I think that one of the things that attracted me to teaching was that I feel that it's an undervalued thing. To be a really excellent teacher is one of the most skilled jobs and so I really was attracted to teaching, because I saw it as that ultimate challenge and I still want to do that, and I try and – even though I get frustrated with this sort of relief stage, I try and focus on the positives that come from it – being in a range of classrooms and a range of schools and things like that – and try and not get too frustrated with the negative side of it. I do have a very strong sense that if I was to do teaching, that it would be a big commitment, and that I wouldn't want to do just a good enough job, that I'd want to experience – work towards being an excellent teacher.

Graduate teacher, trained in speech pathology, casual relief teaching in a primary school

This section discusses attraction to teaching, and retention and attrition in the early years of teaching. Section 3.4.1 examines graduate teachers' attraction to join the teaching profession. Section 3.4.2 discusses the retention and attrition patterns of teachers, followed by Section 3.4.3 on the reasons why graduate teachers leave teaching in their early years. In this study, attrition is defined as not continuing in a teaching position.

Teaching remains a 'revolving door' (R. M. Ingersoll, 2001) with high mobility and exit numbers for its newest and most vulnerable entrants. Ingersoll & Perda (2010) reported that in the US between 40 to 50 per cent of those entering teaching leave within 5 years. In 2007, the attrition of Australian early career teachers was reported to be as high as 25 per cent (House of Representatives Standing Committee on Education and Vocational Training, 2007).

The attraction to a career in teaching has altered little over time. Those who teach and those who are attracted to teaching report that they aspire to the intellectual fulfilment and contribution to society provided by employment in a helping profession. Intrinsic and personal values such as being a positive role model, enjoying children and young people, wanting to make a difference and a strong commitment to social justice principles are common reasons stated for wanting, or continuing, to be a member of the teaching profession (see for example, Richardson & Watt, 2006).

Ashiedu and Scott-Ladd (2012) reported on a survey of teachers carried out in 2002 by Australia's Ministerial Council on Education Employment Training and Youth Affairs found that approximately 31 per cent of the respondents enjoyed working with children, 22 per cent had a desire to teach, and 11.5 per cent were attracted through a recruitment campaign or the positive impact of a role model. A further 8.6 per cent were attracted to the employment conditions and 8.3 per cent had a desire to make a difference or were attracted because of the value of education and care for students.

Box 5 lists the main findings for Section 3.4.

Box 5. Main Findings: Attraction, retention and attrition

- Graduates wanted a teaching career for altruistic reasons. Approximately 90 per cent of the graduate teachers joined teaching 'wanting to make a difference' and more than 70 per cent indicated that they 'Always wanted to teach/work with children'. About 70 per cent also highlighted that they wanted to work in their areas of specialisation or interest. Very few saw teaching as a 'backup plan' or entered teacher education just because their ATAR score was sufficient.
- Overall, attrition of graduates from teaching (i.e. leaving/ not continuing in a teaching position) was 7 per cent over the data collection period.
- The retention rate was 75 per cent, with almost 100 per cent retention in the Northern Territory. Those teachers had also completed their teacher education program in the Northern Territory. The ACT and Tasmania had the highest attrition rates.
- In terms of geographical areas, the highest attrition rate occurred in schools in outer regional areas, followed by very remote schools. Attrition was lower than average in Aboriginal and Torres Strait Islander Focus schools. In addition, even though the actual numbers were very small, it is worth noting that by comparison with schools in major cities as well as inner and outer regional areas, schools in remote and very remote areas showed a higher retention rate over the 12-month period.
- Overall, the highest attrition rate over the 12 months was in secondary schools.
- According to principals, schools were attractive to new graduates when they offered better location and accessibility, reputation for performance or use of technologies, newer facilities, and partnership arrangements with universities.
- Principals in metropolitan schools reported the least difficulty retaining graduates, while those in remote locations had the most difficulty retaining them with the exception of Northern Territory.
- More than 82 per cent principals planned to keep some or all of their graduate teachers. Less than 11 per cent stated that they would not wish to continue to employ them.
- Principals reported that the most common form of school support provided to new graduate teachers was ongoing professional learning opportunities. Graduates considered this type of support was the most effective to them as an early career teacher, followed by an informal mentor arrangement. However, it is also worth noting that while more than 97 per cent of principals identified induction programs as available in their schools at all three survey points, 20-26 per cent of graduate teachers identified this as not available at the same points in time.

3.4.1 Attraction to teaching

The table below shows attraction to teaching for graduate respondents in the three Graduate Teacher Surveys. Respondents were asked to indicate their level of agreement with twelve statements about what attracted them to teaching. Their responses were recorded on a five-point Likert scale, ranging from: strongly agree, agree, neither agree nor disagree, to disagree and strongly disagree. Table 43 positive responses (agree and strongly agree) and negative responses (disagree and strongly disagree) have been grouped, and those who neither agreed nor disagreed have been omitted. This shows, in a clear way, the differences of agreement to statements in the list.

Table 43. Graduate teachers – by reasons for wanting to become a teacher

	Round 1		Round 2		Round 3	
	A/SA	D/SD	A/SA	D/SD	A/SA	D/SD
Always wanted to teach/work with children	73.1	11.0	71.3	12.0	70.1	12.0
Advice of careers advisors/ teachers/ parents	35.5	33.9	38.3	31.2	37.7	33.4
ATAR[5] in the range for the teacher education program	12.7	57.7	12.8	56.7	11.3	58.3
Location of the campus was convenient	44.0	35.6	42.6	36.8	40.9	37.6
Wanted to make a difference	90.2	2.7	90.2	2.5	89.2	2.5
Wanted to work in an area of specialisation or interest	75.3	7.0	74.8	6.5	76.4	5.9
Qualification is broadly accepted here and overseas	63.6	12.5	63.9	13.5	62.2	13.5
Availability of school holidays	50.7	22.8	50.7	23.7	50.2	24.4
Attractive pay and conditions	32.0	37.9	29.0	41.4	28.2	43.4
Strong employment opportunities	43.0	32.2	48.5	27.8	46.4	30.5
Parent/family member is a teacher	25.3	55.5	27.5	53.6	27.1	54.6
Teaching was a back-up plan	14.7	64.8	15.5	66.7	14.6	67.9

Note: A - agree; SA - strongly agree; D - disagree; SD - strongly disagree

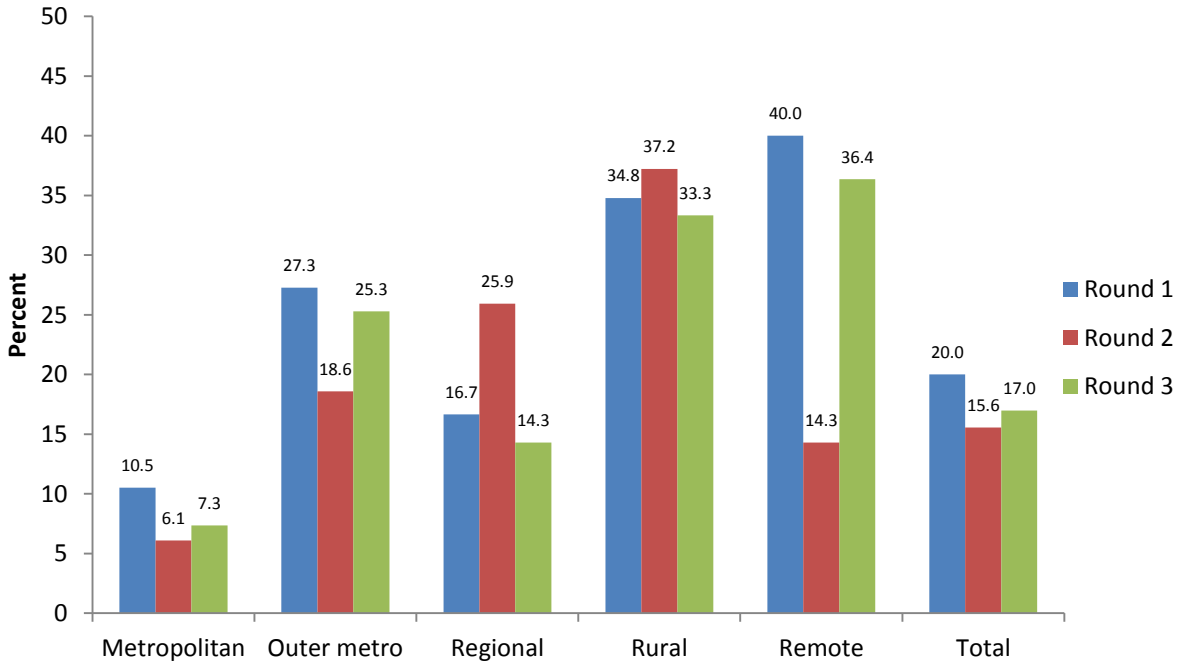
The item in the table above with the highest percentage of graduate teachers who stated they strongly agreed or agreed with is 'Wanted to make a difference' (approximately 90 per cent across all three rounds). The next two items on which graduate teachers strongly agreed or agreed *were* 'Wanted to work in an area of specialisation' (approximately 75 per cent) and 'Always wanted to teach children' (approximately 71 per cent). The item in the table with the highest percentage of graduate teachers who stated they strongly disagreed or disagreed with was 'Teaching was a back-up plan' (approximately 66 per cent), followed by 'ATAR in the rank for the teacher education program' *(*approximately 57 per cent). Interestingly, there was little difference in responses across the three survey rounds – noting that whilst there was a portion of respondents who did participate in more than one round, there were 62.5 per cent of respondents, over the three surveys, who only participated once. The findings support the previous research discussed above.

[5] Australian Tertiary Admission Rank

Principals' views on attracting graduates

The three rounds of Principal Surveys gathered information on the difficulty in attracting graduate teachers by school location. Figure 16 shows that overall, principals in 16 to 20 per cent of schools in the three survey rounds had difficulty attracting graduate teachers, but this was very different when schools where grouped by location.

Figure 16. Difficulty in attracting graduate teachers – by school location



Metropolitan schools had the least difficulty attracting graduates, with only 6 to 11 per cent of schools in these locations experiencing difficulty. Schools in regional locations had between 14 to 26 per cent of their principals stating difficulty in attracting graduate teachers. In remote locations, about 40 per cent of principals in Rounds 1 and 3 stated that their schools had difficulty attracting graduates. In Round 2, this was only 14 per cent – but this is due to the small number of schools in this location in Round 2, which numbered only 12.

In free text responses, principals or school leaders were asked if they had difficulties attracting graduates to their schools. While some noted that their state or territory system meant they had little say over who was appointed to their schools (e.g. 'we take who we are given') or various policies meant that some teachers had precedence for employment (e.g. the transfer point system), many indicated that they had a high number of applicants for positions including experienced teachers and new graduates. They believed that their schools were attractive to graduates because of the location and accessibility (transport etc.), their partnership arrangements with universities, their reputation for high performance and/or the latest technologies, their newness, and their size (e.g. a small school). In some cases, incentives made the school more attractive, but it was noted that not everyone who was attracted by incentives was a quality candidate.

While many principals reported receiving 50–100 applications for positions at their schools, many reported difficulties in attracting graduates with the areas of mathematics, physics, English, LOTE, accounting, manual arts and psychology being specifically noted as hard to staff. Difficulties often related to location and the perceived

'toughness' of the school (as measured by ICSEA scores and other SES measures, or simply through word-of mouth).

Principals expressed concern that many graduates do not want to leave the major capital cities or coastal regions where they have grown up and/or completed their teacher preparation program, and that if they did, it was often only for a short time, therefore creating a constant churn in rural, remote, and even some regional areas. Being away from family, the lack of social aspects that a significant number of young people want to be involved in (the 'Metro' mindset), the high cost of living and lack of availability of accommodation (this was particularly noted in areas with a mining presence), were also noted.

Strategies that principals employed to gain high quality graduates included advertising early ('Advertising early gains better applicants.' 'The cream of the crop is super; the averages can be hard work'). Others actively sought out targeted graduates drawing on their prior knowledge of them ('seen them during a practicum or internship'), or recommendations from colleagues.

Table 44 below shows the principal or school leader responses as to whether or not their school had difficulty attracting teachers.

Table 44. Difficulty for schools in attracting graduate teachers

Difficulty attracting graduate teachers	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Yes	25	20.0	48	15.7	62	16.8
No	100	80.0	257	84.3	307	83.2
TOTAL	125	100.0	305	100	369	100

Up to a fifth of principals over the three rounds of surveys stated they had difficulty attracting graduate teachers, but as the principal response numbers were fairly small, generalisations should not be drawn.

The table below shows principals' plans to recruit new graduate teachers in 2013. This question was only asked of principals in the survey round at the end of 2012.

Table 45. Plan to recruit new graduate teachers in 2013, Round 2 only

	Round 2	
	N	%
Yes	177	52.8
No	104	31.0
Unsure	54	16.1
TOTAL	335	100.0

Over half of the principals (52.8 per cent) planned to recruit new graduate teachers in 2013. Thirty-one per cent had no plans to recruit new graduate teachers, and 16.1 per cent were unsure. This supports the earlier discussion in relation to principals liking to employ graduates.

3.4.2 Retention in teaching

Table 46 below shows the principal or school leader responses as to whether or not their school had difficulty retaining teachers.

Table 46. Difficulty for schools in retaining graduate teachers

Difficulty retaining graduate teachers	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Yes	110	25.1	69	20.8	94	25.5
No	328	74.9	262	79.2	275	74.5
TOTAL	438	100	331	100	369	100

From a fifth to a quarter of principals responding to the surveys stated that they had difficulty in retaining their graduate teachers.

The principals were also asked about their plans to retain their graduate teachers; see Table 47.

Table 47. Principals' plans to retain graduate teachers

	Round 2		Round 3	
	n	%		
Yes, all of them	157	46.4	283	76.7
Yes, some of them	121	35.8	55	14.9
No	38	11.2	3	0.8
Unsure	17	5.0	14	3.8
Not applicable (no graduate teachers)	5	1.5	14	3.8
TOTAL	338	100	369	100

Nearly half of the principals in the October 2012 survey stated that they planned to retain their graduate teachers in 2013 (46.4 per cent), and 35.8 per cent stated they planned to keep some of them. The percentages are very different for Round 3, which took place in April 2013, when principals would have had in place the majority of their staff for the rest of the school year. Just under 80 per cent stated they planned to keep on all their graduate teachers, and nearly 15 per cent said they would keep on some of them. In terms of numbers, there were only three principals in this survey round who were not planning on retaining their current graduate staff.

Longitudinal analysis: Retention and attrition patterns

The LTEWS data show retention patterns by looking at the teaching status of respondents in Round 3 and tracking back to their teaching status in previous rounds (provided respondents had participated in more than one survey round). It is possible to follow retention over a six-month and a 12-month period. The data from the following two cohorts in the study were analysed in order to show this:

- Cohort 2 (able to be followed from October 2012 – March 2013. N=1,050)
- Cohort 3 (able to be followed from March 2012 – March 2013. N=544)

There were only 958 and 479 of these respondents in Cohort 2 and 3 respectively who have completed enough questions to examine their teaching status (i.e. whether they were retained, joined or left). Cohort 2 shows patterns over a six-month period, from the end of respondents' first year of teaching to the beginning of their second year. Cohort 3 shows patterns over a 12-month period, from the beginning of respondents' first year of teaching to the beginning of their second year.

The table below shows retention and attrition numbers and percentages for these two periods of six and 12-months, as well as data on respondents who gained a teaching position during this time. In the data, *retention* is defined as having a position as a teacher in a school at both data points in the surveys, i.e., for the (i) six month period, at October 2012 and March 2013; and for the (ii) 12 month period, at March 2012 and March 2013. *Attrition* is defined as having a teaching position at the first data point but not teaching at the second data point. *Joined* is defined as not having a teaching position at the first data point but having a teaching position at the second data point.

In the six-month period from October 2012 to March 2013 there was an 85.5 per cent retention rate for those respondents who participated in the Graduate Teacher Surveys that took place at these times. Just under eight per cent had left teaching, and 6.7 per cent of respondents with a teaching position in March 2013 did not have teaching employment in October 2012.

In the 12-month period from March 2012 to March 2013 74.7 of respondents were teaching at both times. Just over seven per cent who were teaching in March 2012 were no longer teaching in March 2013, and 18.2 per cent of those with a teaching position in March 2013 did not have a teaching position a year earlier.

Table 48. Retention and attrition patterns

Teaching status	6 months		12 months	
	n	%	n	%
Retained	819	85.5	358	74.7
Joined	64	6.7	87	18.2
Attrition	75	7.8	34	7.1
TOTAL	958	100.0	479	100.0

Retention and attrition patterns across teaching areas

The next four tables show retention and attrition patterns over the six and 12-month periods across different teaching areas. The first table shows changes in these patterns across states and territories.

Table 49. Retention and attrition patterns – by school state/territory

Teaching status	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
	%	%	%	%	%	%	%	%	%
Cohort 2									
Retained	79.9	89.3	84.6	88.9	78.8	91.7	100.0	80.8	85.5
Joined	12.5	3.8	5.1	5.6	12.1	0.0	0.0	9.6	6.6
Attrition	7.6	6.8	10.3	5.6	9.1	8.3	0.0	9.6	7.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cohort 3									

Retained	75.3	70.8	80.5	84.2	77.6	62.5	100.0	50.0	75.8
Joined	20.6	20.8	14.4	10.5	14.3	25.0	0.0	37.5	17.8
Attrition	4.1	8.4	5.1	5.3	8.2	12.5	0.0	12.5	6.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Cohort 2 n=934; Cohort 3 n=467

In the six-month period, retention was highest in the Northern Territory, where all teachers who had been teaching there in October 2012 were still employed as teachers there in March 2013. The state with the next highest retention rate was Tasmania with 91.7 per cent. The state with the lowest retention rate was Western Australia, but it had a high rate of graduates gaining a teaching position over this time, so does not necessarily point to a high attrition rate. The highest rate of attrition over this six-month period was in Queensland, with 10.3 per cent of respondents who were teaching in October 2012 no longer teaching in March 2013. The ACT had the next highest rate of attrition, at 9.6 per cent.

In the 12-month period, retention was highest again in the Northern Territory, where all teachers with a position there in March 2012, still had a teaching position in March 2013. The state with the next highest retention rate over this 12-month period was South Australia, with 84.2 per cent. The highest attrition rate over this period was in Tasmania and the Australian Capital Territory, both with 12.5 of graduate respondents who were teaching in March 2012 no longer teaching in March 2013.

Retention and attrition patterns across geographical areas

Table 50 shows retention and attrition patterns over the two periods of time across geographical areas (using ARIA scores, as defined by the Australian Bureau of Statistics).

Table 50. Retention and attrition patterns – by school geographic location

Teaching status	Major city %	Inner regional %	Outer regional %	Remote %	Very remote %	Total %
Cohort 2						
Retained	85.7	92.0	91.0	94.4	95.7	88.1
Joined	7.2	3.4	3.4	5.6	0.0	5.7
Attrition	7.2	4.6	5.6	0.0	4.3	6.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Cohort 3						
Retained	74.1	81.7	85.5	93.3	90.0	78.2
Joined	19.5	12.2	1.8	6.7	0.0	14.8
Attrition	6.4	6.1	12.7	0.0	10.0	7.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Cohort 2 n=806: major cities n=470, inner regional n=164, outer regional n=85, remote n=18, very remote n=23; Cohort 3 n=413: major cities n=235, inner regional n=77, outer regional n=48, remote n=15, very remote n=9

Retention rates remained fairly high over the six-month period in all regions outside major cities, with very remote areas having a retention rate of 95.7 per cent. Over this time, attrition was highest in the major cities, at 7.2 per cent. It must be remembered that the number of respondents in each region does have a large effect on the percentages shown. For example, the attrition rate of 4.3 per cent for the very remote regions means one respondent left teaching over this time.

Attrition rates were lower and retention rates higher for both cohorts during the data period of 12 months. The highest retention rate was in remote regions, with 94.4 per cent (noting that the total number of respondents in this region was 15). The highest attrition rate in this 12-month period was in the outer regional areas, with 12.7 per cent.

Retention and attrition patterns – by Aboriginal and Torres Strait Islander focus

Table 51 shows retention and attrition across schools, comparing those which are Aboriginal and Torres Strait Islander focus schools with those which are not.

Table 51. Retention and attrition patterns – by designated Aboriginal and Torres Strait Islander focus school

Teaching status	No Aboriginal and Torres Strait Islander focus %	School with Aboriginal and Torres Strait Islander focus %	Total %
Cohort 2			
Retained	87.7	91.0	88.1
Joined	6.1	3.0	5.7
Attrition	6.2	6.0	6.2
TOTAL	100.0	100.0	100.0
Cohort 3			
Retained	77.1	86.3	78.2
Joined	15.7	7.8	14.8
Attrition	7.2	5.9	7.0
TOTAL	100.0	100.0	100.0

Note: Cohort 2 n=806: non-Aboriginal and Torres Strait Islander focus n=706, Aboriginal and Torres Strait Islander focus n=100; Cohort 3 n=413: non-Aboriginal and Torres Strait Islander focus n=362, Aboriginal and Torres Strait Islander focus n=51

In the six-month period from October 2012 to March 2013 retention was highest for Aboriginal and Torres Strait Islander focus schools, at 91 per cent. The attrition rate for Aboriginal and Torres Strait Islander focus and non-Aboriginal and Torres Strait Islander focus schools was the same. The difference between the two groups of schools in the six months was that for all respondents teaching in March 2013, there were more teachers in the Aboriginal and Torres Strait Islander focus schools who were also teaching in October 2012. Just over six per cent of respondents working in non-Aboriginal and Torres Strait Islander focus schools had not been teaching six months earlier.

Retention over the 12 months was nearly 9 per cent higher for Aboriginal and Torres Strait Islander focus schools and attrition was just over 1 per cent lower than for non-Aboriginal and Torres Strait Islander focus schools.

Retention and attrition patterns – by type of school in which they were employed

The table below shows retention and attrition patterns for graduate teacher respondents by the type of school in which they were employed.

Table 52. Retention and attrition patterns – by school type

Teaching status	Early Childhood %	Primary %	Secondary %	Combined %	Total %
Cohort 2					
Retained	76.7	87.7	85.0	85.3	85.8
Joined	14.0	5.2	7.2	5.1	6.3
Attrition	9.3	7.2	7.8	9.6	7.8
TOTAL	100.0	100.0	100.0	100.0	100.0
Cohort 3					
Retained	34.8	79.0	74.6	77.9	75.1
Joined	52.2	16.8	14.8	19.1	18.1
Attrition	13.0	4.2	10.7	2.9	6.8
TOTAL	100.0	100.0	100.0	100.0	100.0

Note: Cohort 2 n=945: Early Childhood n=43, primary n=405, secondary n=361, combined n=136; Cohort 3 n=474: Early Childhood n=23, primary n=214, secondary n=169, combined n=68

For Cohort 2, who had participated in Rounds 2 and 3 of the LTEWS Graduate Teacher Surveys, the retention rate for all school types was close to the average (85.8 per cent) except for those teaching in early childhood – of all those employed as an early childhood teacher in March 2013, 76.7 per cent had also been teaching in October, 2012 and 14 per cent were new to teaching. Respondents from combined schools had the highest attrition rate, with 9.6 per cent.

The 12-month period from March 2012 to March 2013 showed a lower retention rate for respondents in early childhood, but it should be noted that there were only 23 respondents in this group so percentages should be treated with caution. The highest attrition rate over the 12 months was from respondents in secondary schools, with 10.7 per cent.

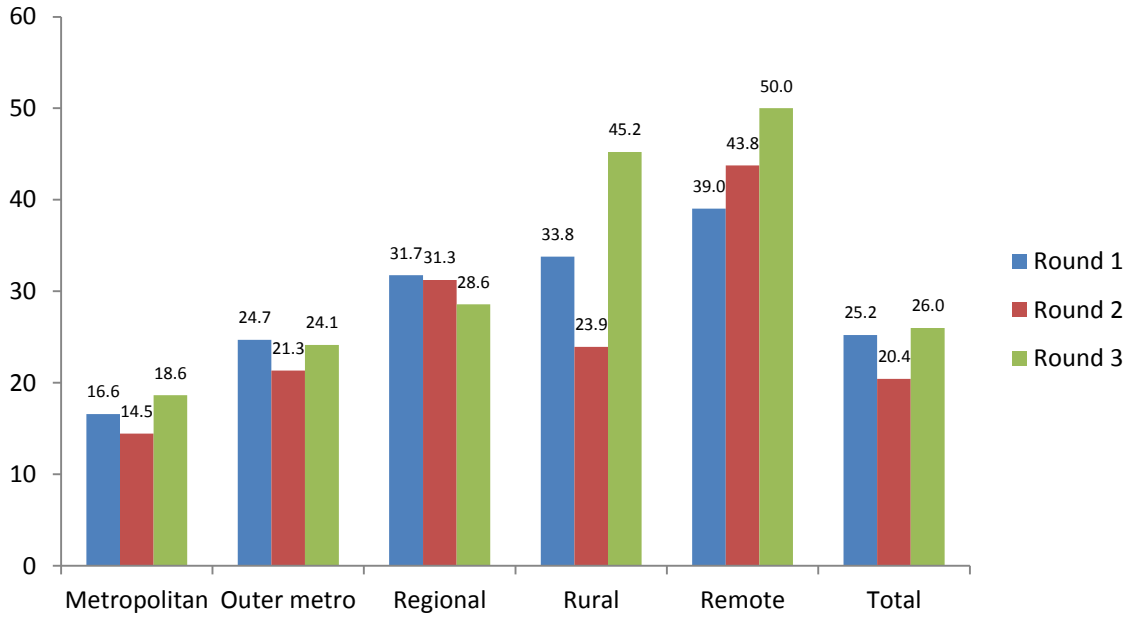
The data from this cohort would indicate that once in a position, attrition is relatively low. Cohort 3 showed a high number of teacher joining the early childhood sector, but with the highest rate of attrition over the period. These data are a short point-in-time analysis of teacher attrition.

Principals' views on retaining graduates

The three rounds of Principal Surveys also gathered information retaining graduate teachers by school location. Figure 17 shows that principals in 21 to 26 per cent of schools in the three survey rounds had difficulty retaining graduate teachers. Similarly to attracting graduates, this was very different when schools where grouped by location.

Metropolitan schools had the least difficulty retaining graduates, with between 15 to 19 per cent of schools in these locations experiencing difficulty. Schools in regional locations had between 29 to 32 per cent of their principals stating difficulty in retaining graduate teachers. In remote locations, this figure rose to between 39 to 50 per cent of principals stating their schools had difficulty retaining graduates.

Figure 17. School location – by difficulty in retaining graduate teachers



Principals and school leaders reported that many graduates stay employed at their school for approximately 5 years, an appropriate retention record according to them. It was reported that graduates stay and consolidate their teaching and learning practices, and only move for promotion or to gain further experience as part of their career goals. Principals believed that new teachers are motivated to stay because of the professional and collegiate working environments in their schools, and the provision of systematic mentoring and support programs. In small schools, it was thought that new teachers stayed to gain experiences of responsibility, and leadership opportunities earlier than their colleagues in larger schools.

However, because of various policies relating to contract positions, many new teachers move schools because the principals cannot offer permanent on-going positions, and in some states the transfer system ensures that new teachers move on quite quickly (e.g. the 'country service' requirement). Some move because they are 'poached' by nearby (often private) schools and others have to move because the school has 'too many older staff who will not retire and make way for graduates'. It is also thought that many new teachers move on to teach at a perceived better school and/or to 'go home'. Personal and family circumstances impact on these decisions including things like the high cost of living and unavailability of suitable housing, in addition to 'stages of life' decisions, like wanting to travel.

In some areas, isolation and distance make it restrictive for professional development, and so new teachers look for other opportunities. In terms of graduate teachers in their schools, principals and school leaders reported that they would be able to retain many of them into their second year of teaching. They noted wanting to retain them if they were a 'good fit' with the school, and capable in their work. This was made easier in schools with increasing enrolments.

The main reason principals were not able to retain the graduates in their schools was because they were on contract, and permanent staff were returning from leave. Some were moving to do what they saw as compulsory 'country service' and also for a range of personal reasons. Some were not able to be retained because of falling enrolments and funding pressures, and a mismatch between the curriculum area demands in the school.

3.4.3 Leaving teaching in the early years

The early years of teaching form a transition stage to a more secure employment status. In Australia this year is colloquially known as being employed as a 'first-year-out' teacher. Following the completion of a recognised university teacher education program, graduate teachers, whether they are working full or part-time or casual, will provisionally register as teachers and occupy 'the ritual bridge' (Britzman, 1986) 'that beginning teachers have to cross to enter the teacher's world' (Ballantyne, Thompson, & Taylor, 1998, p.51). Early experiences in the teaching workforce are a critical period. It is during this time that attitudes and behaviours with respect to the profession are formed and continue to shape the subsequent years of teaching (Bartell, 2004).

In this study, transition into the workplace as an early career teacher includes a wide range of 'first' appointments and experiences:

- A full-time permanent ongoing position
- A full-time one-year contract position
- A short-term contract position – ranging from a part-time contract – from a few weeks, to one to two terms, or a fractional appointment for a school year
- Relief or casual teaching – irregular teaching patterns
- Teaching in Higher Education or an allied education field

The free text responses in the Graduate Teacher Surveys provide a data source for understanding more about the reasons why early career teachers choose to leave the teaching profession including an analysis of obstacles to securing a teaching position, reasons for not seeking employment as a teacher as well as induction and support for graduate teachers in schools.

Reasons for not seeking employment or difficulties in securing employment over Rounds 2 and 3 are grouped as follows:

Personal

- family commitments, caring for young children and family leave;
- undertaking further study, such as a M.Ed. or PhD;
- travel;
- gaining further experiences in a school by working as a teacher aide;
- unable to obtain a Visa;
- unexpected ongoing illness;
- moved states or overseas;
- need to satisfy IELTS test;
- personal belief – 'teaching is not for me' and personal preference to teach in non-government or catholic school rather than the public sector.

Career/professional backtrack

- salary is greater than teaching;
- job security and career progression is greater than teaching;
- part-time work is not an option due to personal and family commitments;
- work in allied educational field, e.g. Higher Education, Gallery Education Officer, Not-for-profit foundation;

- consultancy;
- artist in schools;
- senior administrative position in a school;
- Director of Child Care Centre, Outside School Hours Care, Private Tuition;
- age (>55); and
- low pay compared to other professions.

Quality of induction and support

- teaching is too stressful – little induction and support;
- workplace harassment occurs and is not addressed;
- provisional registration system is a barrier;
- challenges in understanding how 'systems' work and
- support to new graduates – limited induction and mentoring.

Employment conditions

- lack of teaching jobs/opportunities;
- few permanent positions;
- vacant positions in the field of teaching not available and
- casual teaching is not satisfying or financially viable.

In the free text responses, graduates with casual appointments expressed a range of anxieties associated with trying to secure a teaching position and of being able to secure only casual work; for example:

- *'Have applied and been turned down or had no response for 26 jobs. Lack of experience is the usual excuse.'*
- *'Being a graduate teacher, schools don't give opportunities.'*
- *'I have a family and part-time work is too insecure and unreliable. Have registered with casual direct but I do not receive any calls. The criteria for a new scheme teachers is too broad making it difficult to meet the criteria in applications.'*
- *'Lack of permanent positions and too many casual teachers working in this area.'*
- *'Lack of teaching positions in my local area – too much competition from more experienced teachers.'*
- *'Inability to secure employment in the metropolitan area – I have two children aged 11 and 12 years – 1 in high school and the other in primary school. I am unwilling to disrupt their education to move to a remote location to secure employment.'*

Despite the high percentage of graduates in casual positions, many still wanted to remain in teaching as the following comments show:

- *'Although I would love to stay in teaching, if I am unable to gain employment in teaching I will be forced to find an alternative income as I cannot rely on wages from relief teaching.'*
- *'All I want is to work as a teacher.'*
- *'I would like to have a reasonably paid job but because of my age and the subject I teach, I feel there is a lack of opportunity. Funding to the arts has been cut which affects me directly. I would still like to work for another 8 years or more. I have started privately in adult education and enjoy it. I would like a mix. I have a lot of expertise in my area to offer.'*

Box 6 illustrates a case example of the implications of contract and casual relief employment on job prospects and career progression.

Box 6. ***'So that's what they were going on about all that time'***

Kay has a Bachelor of Education (early childhood/primary) from a university in Western Australia. She graduated in 2011 and has started her employment, first, as casual relief teacher, and then later in 2012 she received a short contract position in a primary school to cover a teacher who went on maternity leave. The school is situated in a low socioeconomic area of Perth. According to Kay, the school has developed quality programs in response to the student population and has great facilities. However, in her view it is not responsive to the challenges that new teachers encounter. Kay started her contract employment in Term 3 and she has not received any support from the school administration as a new teacher.

> *They expect me to know a lot of things about how the school works … they don't really pass the messages on to me.*

Overall, Kay feels that she is prepared well for teaching. She feels that her university program provided a good variety of professional learning opportunities and strategies that have proved useful for teaching. She identifies the foci on learning strategies, reflective practice, collegiality and professional relations, responsiveness to students' needs, assessment and evaluation, literacy and numeracy and classroom management as being particularly helpful. However, she also feels that she was not adequately prepared for teaching in culturally and linguistically diverse classrooms and for engaging with the larger community. She thinks that it would have been beneficial if there had been more practice-based learning and professional experience opportunities in her pre-service teacher education program:

> *I feel like during university you need a lot more time in the classroom because nothing really makes sense while you're at university, then when you eventually do get into the classroom it's like, 'oh so that's what they were going on about all that time' – you can't connect the two because you need to have more time in the classroom for it to make sense.*

Kay's employment prospects are uncertain. The contract position ran out in 2012 and she has applied for positions elsewhere. However, she is afraid that in all likelihood this will be a casual relief position again. She is frustrated with this situation and employment prospects. She laments:

> *This is the thing I hate about the education system at the moment, is that you never know if you're going to have work or not, and the whole idea of having contracts and being out of contracts and not being in a permanent position, it's all just sad … I think that's where everyone is heading, contract work. But I just don't like the instability – I want to know where I am and what I'm doing and am I going to be able to pay my mortgage.*

Graduate teacher, Western Australia, early childhood/primary, casual relief

The data from this study indicate that for early career teachers there are significant differences in the patterns of employment and these experiences are paralleled by a host of issues associated with securing a 'first' position. It seems clear that graduating from a teaching degree and gaining an initial full-time ongoing position, with the likelihood of a permanent position to follow, no longer constitutes the norm for Australian teacher education graduates. The current situation in Australia contrasts sharply with the experiences of the Australian 'baby boomer' generation who trained in the 1970s. This generation of teachers were often bonded to an education authority and completed their qualification in a period of expansion in education, and whether bonded or not, readily found employment.

Induction and support for new teachers

From the survey data, it is not possible to report on exactly why graduates leave teaching in their early teaching careers as there were too few respondents in the surveys who had left teaching. It is possible to show what graduate respondents thought about the effectiveness of support they had in schools, and this may have some bearing on why graduates leave teaching. Table 53 shows the nine items in the survey that asked graduate teachers about the types of support they received in school. In each of these areas the graduate teachers were asked to indicate on the scale provided how much they agreed or disagreed that the types of support are/were effective for them as early career teachers. Responses were recorded on a five-point Likert scale, from: strongly agree, agree, neither agree nor disagree, disagree to strongly disagree. There was also a response option to record if this type of support was not available.

Table 53. Graduate teachers with a teaching position – by level of agreement with the effectiveness of types of support received in schools

	Not available	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Round 3							
Induction program	20.0	2.9	8.6	16.5	32.5	19.6	100.0
Formal mentor	24.0	3.9	8.7	13.6	23.0	26.7	100.0
Informal mentor	14.2	1.6	4.1	10.5	33.9	35.6	100.0
Ongoing network	18.4	2.6	7.8	15.7	33.0	22.4	100.0
Guidance on planning	13.4	2.3	7.1	13.0	37.8	26.3	100.0
Ongoing PD	9.0	2.0	5.2	10.5	35.9	37.3	100.0
Informative websites	16.8	3.2	10.5	24.4	30.0	15.1	100.0
Pay and conditions info.	11.8	4.4	11.3	27.0	33.3	12.2	100.0
Regular debriefing	15.4	3.4	8.1	15.8	32.1	25.2	100.0
Round 2							
Induction program	26.2	3.0	7.6	14.9	30.0	18.3	100.0
Formal mentor	26.4	3.8	8.3	13.8	21.0	26.8	100.0
Informal mentor	16.6	2.0	3.5	12.1	33.4	32.4	100.0
Ongoing network	19.2	2.9	7.6	16.1	30.9	23.3	100.0
Guidance on planning	14.5	1.9	6.4	13.9	37.7	25.6	100.0
Ongoing PD	8.9	1.8	4.4	11.6	37.1	36.1	100.0
Informative websites	17.7	2.8	10.1	21.9	31.6	15.9	100.0
Pay and conditions info.	13.0	3.8	11.2	26.4	32.6	12.9	100.0
Regular debriefing	16.9	2.5	8.4	16.9	32.2	23.2	100.0

Round 1							
Induction program	26.4	2.5	7.9	14.0	28.7	20.4	100.0
Formal mentor	29.1	2.6	7.4	10.7	23.6	26.6	100.0
Informal mentor	17.2	1.2	4.7	12.1	30.9	34.0	100.0
Ongoing network	20.5	2.7	5.3	14.0	31.1	26.3	100.0
Guidance on planning	16.1	2.5	6.7	12.7	36.2	25.8	100.0
Ongoing PD	10.4	1.4	3.6	13.3	35.7	35.7	100.0
Informative websites	19.0	3.2	10.2	18.5	32.9	16.2	100.0
Pay and conditions info.	14.0	4.9	12.6	22.6	32.8	13.0	100.0
Regular debriefing	18.2	3.5	6.7	12.9	34.7	24.0	100.0

Note: Round 3 n=1,671; Round 2 n=2,028; Round 1 n=920

The data show that the item that was least available to graduate teachers was 'Formal mentor arrangement' (29 per cent of graduate teachers stated this was not available in Round 1, 26 per cent in Round 2 and 24 per cent in Round 3). The form of support that graduates stated was most available to them was 'Ongoing professional development opportunities' (73 per cent stated this was available in Round 1 and Round 2 and 71 per cent in Round 3).

The item that graduate teachers stated was most effective in terms of support in their new role as a teacher was 'Ongoing professional development opportunities' (71 per cent either agreed or strongly agreed in Round 1, 73 per cent in Rounds 2 and 3) followed by 'Informal mentor arrangement' (65 per cent in Round 1, 66 per cent in Round 2 and 70 per cent in Round 3). The item that was least effective in all three survey rounds was 'Information on pay and conditions' (18 per cent either strongly disagreed or disagreed in Round 1, 15 per cent in Round 2 and 16 per cent in Round 3).

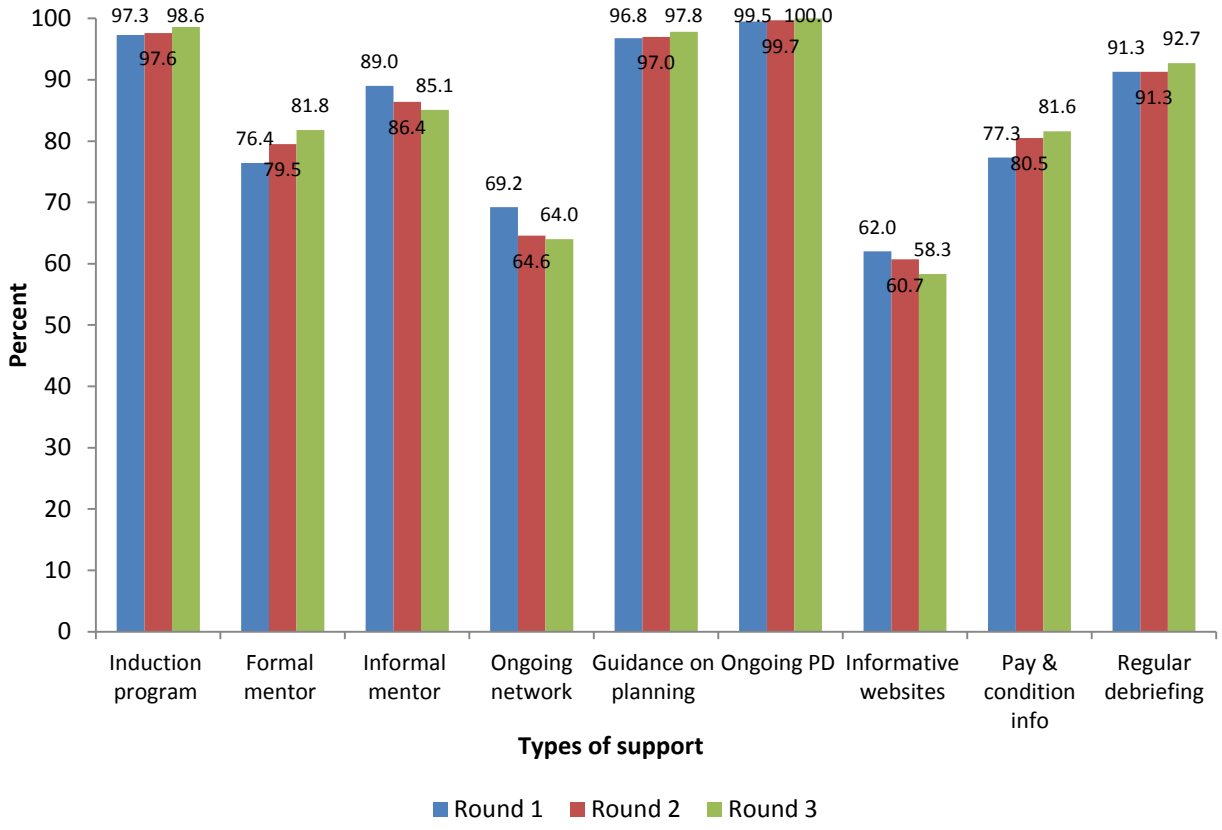
Principals' responses on support available to first-year teachers

Principals of graduate respondents to the LTEWS surveys were also asked whether these nine support items were available in their schools. Figure 18 below shows what support principals stated was available for their early career teachers.

Of the nine items relating to support listed in the Principal Survey, principals stated that 'Ongoing professional development opportunities' was the item most widely available across schools (99.5 per cent of principals said this was available at their school in Round 1, 99.7 per cent in Round 2 and 100 per cent in Round 3). Least available was a 'List of informative websites' (62 per cent of principals indicated this was available in their schools in Round 1, 61 per cent in Round 2 and 58 per cent in Round 3) and an 'Ongoing network with other beginning teachers' (69 per cent of principals had this available to their graduate teachers in Round 1, 65 per cent in Round 2 and 64 per cent in Round 3).

The support item that the highest percentage of principals stated was available to graduates was also the item that graduates stated was the most effective to them as an early career teacher. However, it is also worth noting that while more than 97 per cent of principals identified induction programs as available in their schools at all three survey points, 20-26 per cent of graduate teachers identified this as not available at the same points in time.

Figure 18. Support available to first year teachers according to school principals



Note: Round 1 n=440; Round 2 n=333; Round 3 n=369

3.5 Factors influencing Position and Location Changes

The characteristics of schools and changes in employment that were investigated include:

1. Working in a school in an outer regional, remote or very remote area;
2. Working in a school that has been classified as an Aboriginal and/or Torres Strait Islander (ATSI) focus school;
3. Staying in a teaching role for a period of time;
4. Leaving a teaching role after having been teaching; and,
5. Changing schools.

Identifying the main factors that account for differences in position and changes in location requires specifying the statistical relationship between these changes and graduate characteristics as some form of a regression equation. Logistic regression procedures were used to identify factors that influence these changes. The aim of the regression was to estimate the factors influencing all five outcomes listed above with the following characteristics in the graduate respondents, after controlling for other influences. The graduate characteristics that were included in the analyses were:

- Gender
- Age
- State/territory where registered to teach
- Teacher education program type
- Domestic or international student
- Study mode
- Attraction, attrition and retention of teaching
    - Job characteristics is the reason for attraction
    - Environment is the reason for attraction
    - Altruism is the reason for attraction

The variables that asked about attraction to teaching are included in the three components in the following way:

1. Job characteristics:

- Attractive pay and conditions
- Availability of school holidays
- Strong employment opportunities
- Qualification is broadly accepted here and overseas

2. Environmental attraction:

- ATAR in the range for the teacher education program
- Advice of careers advisors/teachers/parents
- Parent/ family member is a teacher
- Location of the campus was convenient

3. Altruistic attraction:

- Wanted to make a difference
- Always wanted to teach/work with children

- Teaching was not a back-up plan
- Wanted to work in an area of specialisation or interest

These components were identified using principal components analysis. For details refer to Appendix 15.

Results of regression calculations are represented in Appendix 17. Each table addresses one of the five school characteristics or changes in employment listed above, and shows the likelihood of graduate characteristics that have an influence on these outcomes, and whether this is a positive or negative influence.

Each graduate characteristic listed above has one factor that is controlled in the regression model. This group of factors constitutes the control group. The control group for all five regression calculations in each of the three rounds of surveys consists of the following characteristics:

- Female
- Aged under 30
- Victorian teacher registration
- Bachelor's degree
- Domestic student during their teacher education program
- Full-time study

Each of the three attraction variables was divided into four groups:

- those who scored in the top 25 per cent on an attraction characteristic (top quartile)
- those who scored in the second 25 per cent on this attraction characteristic
- those who scored in the third 25 per cent on this attraction characteristic
- those who scored in the bottom 25 per cent on this attraction characteristic

The quartile used as the control in the regression model for all three attraction variables was those who scored in the top 25 per cent on this variable (i.e. the top quartile).

Appendix 17 shows the regression calculation for graduate characteristics that influence:

- teaching in a school in a geographic location outside major populated areas; and,
- teaching in a school that is listed as having an Aboriginal and Torres Strait Islander focus.

The factor that had the most influence on graduates working in schools in outer regional, remote or very remote areas was the state or territory in which they were registered to teach. The factor that had the most influence on graduates working in schools listed as having an Aboriginal and Torres Strait Islander focus was the state or territory in which they were registered to teach.

Appendix 17 also shows three regressions looking at teacher position changes in schools. For these regression calculations, the data was analysed longitudinally. The three groups of graduate respondents investigated were those who participated in more than one round of the Graduate Teacher Surveys, and they are grouped in the following way:

- Cohort 1 (able to be followed from March 2012 – October 2012)
- Cohort 2 (able to be followed from October 2012 – March 2013)
- Cohort 3 (able to be followed from March 2012 – March 2013)

Regression calculation for graduate characteristics that influence staying in a teaching role for the periods listed against the cohorts above are included in Appendix 17. This calculation was completed for each of the three cohorts identified in the Graduate Teacher Surveys. The factors that had the most influence on graduates staying in teaching over the 12 months were being an international student (this had a negative affect) and being registered to teach in the Northern Territory (this had a positive affect).

Appendix 17 also shows the regression calculation for graduate characteristics that influenced leaving a teaching role for the six-month period from October 2012 to March 2013. This calculation was completed for each of the three cohorts identified in the Graduate Teacher Surveys, but as those who had left teaching only numbered 15 for Cohort 1 and 34 for Cohort 3, the numbers in these cohorts were too limited for the analysis to make sense so only Cohort 2 is shown. The factor that had the most influence on graduates leaving teaching over the six months was being an international student (this had a positive effect, meaning increasing leaving).

Regression calculation for graduate characteristics that influenced changing schools over the periods are shown in Appendix 17 listed against the cohorts (6 months and 12 months). This calculation was completed for each of the three cohorts identified in the Graduate Teacher Surveys. The factors that had the most influence on teachers changing schools over the 12 months were being in SA, ACT and Tasmania (this had a positive affect), and if the study mode for the education program was a combination of full-time and part-time this had a negative effect on changing schools.

Free Text Responses in the Graduate Teacher Surveys: Reasons for changes

The free text data from Round 2 and 3 surveys were analysed for reasons for changes and categorized as follows.

Change to Employment: The main reason for moving or changing schools or location is due to contracts finishing or not being renewed. Contracts ranged from as little as 6–8 weeks to one year. Frustration about inability to find consistent or ongoing work was highlighted. Reasons for non-renewal of contracts included permanent staff returning from maternity or long service leave, school closures, staffing adjustments due to a decline in student numbers, or subject areas no longer being offered at particular schools. Other reasons for changing employment were linked to obtaining more permanent employment, including longer-term contracts. There was some indication that there was a lack of opportunity in the area in which the graduate was employed, as well the difficulty of juggling work and family commitments. The uncertainty of employment and the impact this had on the graduates can be seen in the following statement.

> It's just that it is frustrating when you cannot get employment after graduation. Especially when you are from a different background where you have an upbringing that makes you feel useless when you are in a situation like this.
>
> Graduate teacher, teaching in a regional school, Casual relief

The biggest difference between Round 2 and Round 3 data was the increase of graduates moving due to finding more permanent work. Permanent work included ongoing, longer contracts, or more secure contract work.

Family/personal reasons: These reasons included family illness, starting a family, or pregnancy upon completing a teaching degree, though this typically involved a desire to recommence casual/relief work as soon as possible.

Intra/interstate or international move: There were many responses relating to moving either intra/interstate or overseas. The reasons for the move intra/interstate were mainly personal, including missing family and/or the desire to remain with a partner who had relocated for employment. Other reasons given were to look for better/increased opportunities for permanent work. In terms of international moves, the main two reasons given were wanting to experience schools/teaching overseas, as well as being offered opportunities for work. Moves to Australia were due to marriage, then migrating.

Levels of support: A major reason for choosing to leave or move was negative experiences either at school or with staff and management. Lack of support in terms of leadership, mentoring, behaviour management or communication/issues with the principals were considered significant by the graduates. Bullying by students and/or staff, as well as high work-load and stress were given as contributing factors.

Other: Other significant reasons for moving or changing positions were: choosing to undertake further study, location, and level of access to resources and professional development, not enough work, unhappy as a teacher, changing career paths, starting own business, or being transferred as part of the requirements in their state.

The reasons why teachers change position and/or leave the teaching profession are complex and defy simple analysis. According to Ashiedu and Scott-Ladd (2012), reasons range from personal, e.g. conflicting demands and perceived lack of support, to specific issues relating to the working environment, such as school size and geographical location. Ingersoll, Merrill and May (2012, pp.32-33) researching beginning mathematics and science teachers, recently reported:

- Contrary to widely held beliefs, we found that the type of college, degree, and preparation route had little bearing on teachers' likelihood of leaving teaching after one year;
- The attrition rates of beginning mathematics and science teachers who held an education degree, such as in mathematics education or science education, did not differ from those of teachers with a non-education degree;
- Those who entered teaching through a traditional program were only slightly less likely to leave than those who entered through an alternative route;
- Pedagogy was strongly related to teacher attrition. Beginning teachers who had taken some courses in teaching methods and strategies, learning theory or child psychology, or materials selection were significantly less likely to depart. The amount of practice teaching they had undertaken, their opportunities to observe other teachers, and the amount of feedback they had received on their teaching were also significantly related to whether new teachers remained in teaching.

Ingersoll is reporting from the US context where there has been recent interest in the expansion of differentiation and alternative entry to teacher education. Whilst the above findings relate specifically to mathematics and science teachers, in LTEWS, after one year it appears that if graduates can secure a position in the first year or early in the second year of teaching, they want to remain in teaching. Participants in this study in their free text responses and in the telephone interviews make reference to their pathway into teaching or their pedagogical skills. The free text comments drew in the organisational conditions of the workplace as key factors.

3.6 Long-term career intentions of graduate teachers and factors influencing these intentions

This section discusses the long-term career intentions of the graduate teacher respondents and the factors influencing these intentions. Box 7 lists the main findings of this section.

Box 7. Main Findings: Long-term career intentions

- Most respondents of the survey indicated their intention to remain in the profession in the next three years. However, the percentage who saw themselves as a teacher in a school in three years' time decreased from 71 per cent to 64 per cent during the 12 months. This is partly accounted for by the number of these teachers intending to seek school leadership positions (an increase from 10 to 14 per cent). Over 7 per cent of the respondents saw themselves working outside of teaching/ education altogether.
- Fewer graduate teachers with masters or graduate diploma qualifications saw themselves teaching in three years' time than for the group as a whole (e.g. Round 1: 66 and 68 per cent compared to 71 per cent for all graduates).
- A higher percentage of graduates with masters degrees saw themselves in an education policy or research position in three years.
- Secondary teacher graduates saw themselves as less likely to be teaching in three years' time and more likely to be in leadership positions, when compared to early childhood or primary teachers.
- The greatest influence on plans for the future in relation to teaching was whether or not graduates had a teaching position during the time of the survey. Graduates who had a teaching position were more likely to see themselves teaching in three years' time than graduates without a teaching position. This was evident for all three rounds.
- Free text responses in the surveys as well as the follow-up telephone interviews suggest that employment status (for example, contracts finishing, moving to take more permanent work), as well as personal and family reasons along with the levels of support in the schools for beginning teachers (or lack thereof) all had some influence on graduates' decisions to move or change teaching positions.

Graduate teachers' plans for three years' time

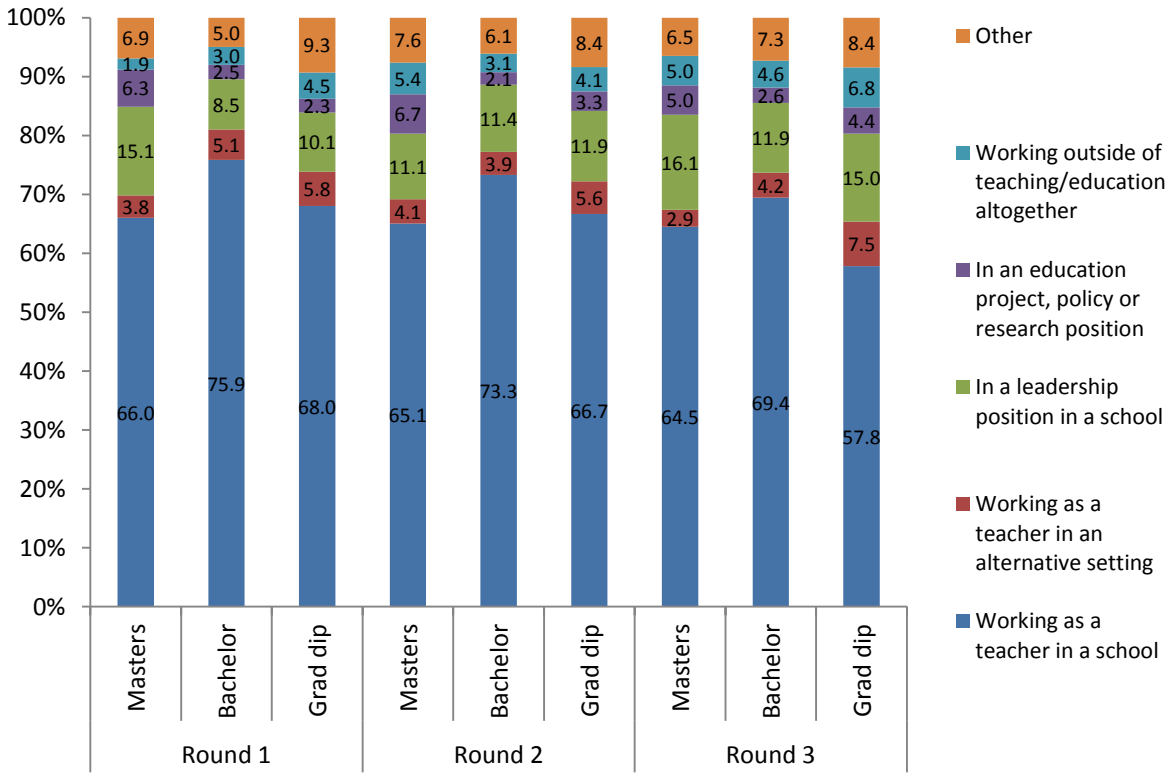
Table 54 shows where graduate teachers see themselves in three years' time. Over the three rounds of surveys, the percentage of respondents who saw themselves as a teacher in a school has decreased from 71 to 64 per cent. Those who saw themselves in a leadership position in a school has increased from 10 to 14 per cent, and those who saw themselves working outside of teaching altogether increased slightly, from three to six per cent.

Table 54. Graduate teachers' plans for three years' time

	Round 1		Round 2		Round 3	
	n	N	n	%	n	%
Working as a teacher in a school	891	71.0	1,675	69.4	1,277	63.6
Working as a teacher in an alternative setting; i.e. adult education	67	5.3	111	4.6	109	5.4
In a leadership position in a school	128	10.2	281	11.6	282	14.0
In an education project, policy or research position	38	3.0	74	3.1	73	3.6
Working outside of teaching/education altogether	43	3.4	97	4.0	114	5.7
Other	88	7.0	175	7.3	153	7.6
TOTAL	1,255	100.0	2,413	100.0	2,008	100.0

When these data are analysed in relation to program type and area of teacher education program, the results indicate some statistically significant differences between groups, as shown in the Figure and Table below. '

Figure 19. Graduate teachers' plans for three years' time – by program type



Note: For all three rounds, p<0.01

Across the three rounds of surveys there were less graduate teachers with a masters or graduate diploma who saw themselves teaching in a school in three years' time than for the group as a whole (e.g. Round 1: 66 and 68 per cent compared to 71 per cent for all graduates, as shown in the Table above). Conversely, there were more

graduate teachers with a masters qualification who saw themselves in a leadership position in a school (e.g. Round 1: 15.1 compared to 10.2 per cent).

In Round 3, there was a larger percentage of those with a graduate diploma who saw themselves teaching in an alternative setting (7.5 per cent compared to 5.4 per cent for the group altogether). Graduate teachers with a masters had a higher percentage than the group as a whole, and saw themselves in an education policy or research position in three years' time (e.g. Round 1: 6.3 per cent compared to 3 per cent; Round 2: 6.7 per cent compared to 3.1 per cent).

Table 55 shows the percentages across plans for three years' time by the program area of the graduates' teacher education program.

Table 55. Graduate teachers' plans for three years' time – by program area

	Round 1	Round 2	Round 3
Early childhood			
Working as a teacher in a school	84.0	69.0	71.9
Working as a teacher in an alternative setting	8.0	2.3	6.3
In a leadership position in a school	0.0	4.6	6.3
In an education project, policy or research position	0.0	5.7	3.1
Working outside of teaching/education altogether	4.0	4.6	1.6
Other	4.0	13.8	10.9
Primary			
Working as a teacher in a school	78.0	76.7	72.2
Working as a teacher in an alternative setting	4.2	3.8	3.3
In a leadership position in a school	6.7	8.2	11.0
In an education project, policy or research position	2.7	2.6	3.2
Working outside of teaching/education altogether	1.6	3.2	4.8
Other	6.9	5.6	5.5
Secondary			
Working as a teacher in a school	65.4	62.4	55.5
Working as a teacher in an alternative setting	6.2	5.5	7.3
In a leadership position in a school	12.7	15.9	17.6
In an education project, policy or research position	2.9	3.5	3.9
Working outside of teaching/education altogether	4.5	4.7	6.7
Other	8.3	8.1	9.0

Note: For all three rounds, $p<0.01$

In Round 1, more early childhood graduates had plans to be working as a teacher in a school (84 per cent compared to 71 per cent for all graduates at this Round 1 point in time). Whilst 10 per cent of all graduates in Round 1 saw themselves in a leadership position in a school, no early childhood respondents saw themselves in this role at this time. A lower percentage of secondary graduates saw themselves working as a teacher in a school

(65.4 per cent compared to 71 per cent for all graduates at this point in time) but a higher percentage saw themselves in a leadership role (12.7 per cent compared to 10 per cent for all).

In Round 2, early childhood graduates were less likely to say they saw themselves in a leadership position (4.6 per cent compared to 11.6 per cent for all graduates). Primary graduates were more likely to see themselves working as a teacher (76.7 per cent compared to 69.4 per cent for all graduates). Secondary graduates were more likely to see themselves in a leadership role (15.9 per cent compared to 11.6 per cent).

In Round 3, both early childhood and primary graduates were more likely to see themselves in a teaching role in a school in three years' time (71.9 and 72.2 per cent, respectively, compared to 63.6 per cent for all graduates). Early childhood graduates were less likely to see themselves in a leadership position (6.3 per cent compared to 14 per cent), and more likely to indicate an 'other' alternative (10.9 per cent compared to 7.6 per cent). Secondary graduates were less likely to see themselves in a teaching role in a school (55.5 per cent compared to 63.6 per cent), and more likely to see themselves in a leadership position (17.6 per cent compared to 14 per cent).

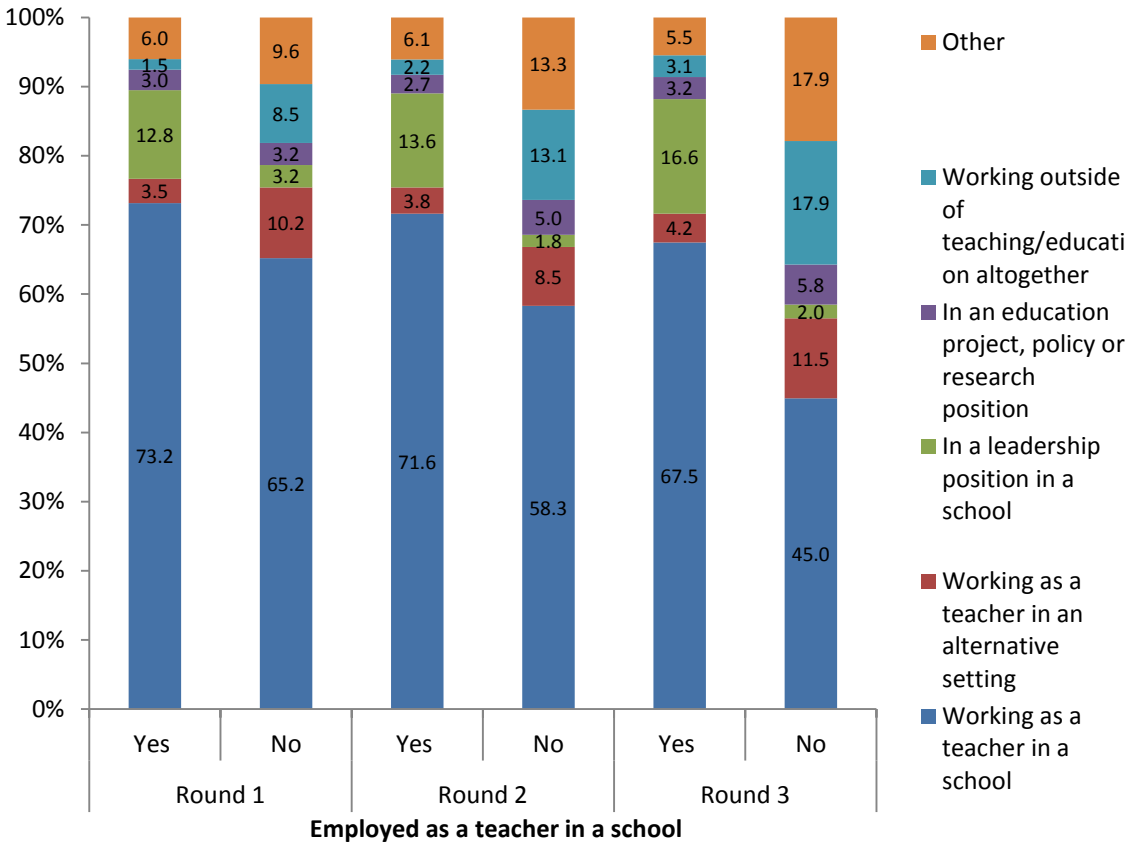
Factors influencing plans for the future

The graduate characteristic that had the greatest influence on plans for the future in relation to teaching was whether or not graduates had a teaching position at the time of the survey rounds. Figure 20 below shows graduates' plans for three years' time by their current employment as a teacher in a school.

In Round 1, graduates without a teaching position were less likely to see themselves teaching in a school in three years' time (65.2 compared to 71 per cent for all graduates), more likely to see themselves teaching in an alternative setting (10.2 per cent compared to 5.3 per cent for), less likely to see themselves in a leadership position (3.2 per cent compared to 10.2 per cent for all graduates) and more likely to see themselves working outside of teaching altogether (8.3 per cent compared to 3.4 per cent of all graduates). In Round 2, the pattern was similar to Round 1.

Graduates without a teaching position were less likely to see themselves teaching in a school in three years' time (58.3 compared to 69.4 per cent for all graduates), more likely to see themselves teaching in an alternative setting (8.5 per cent compared to 4.6 per cent for), less likely to see themselves in a leadership position (1.8 per cent compared to 11.6 per cent for all graduates) and more likely to see themselves working outside of teaching altogether (13.3 per cent compared to 7.4 per cent of all graduates).

Figure 20. Graduate teachers plans for three years' time – by currently employed as a teacher in a school



Note: For all three rounds, p<0.01

In Round 3, which, for the majority of graduates in the surveys, was early in their second year after graduating, the differences between those without a teaching position and all graduate respondents is even more marked. Forty-five per cent saw themselves working as a teacher in a school in three years' time (this is 63.6 per cent for all graduates), 11. 5 per cent saw themselves teaching in an alternative setting (compared to 5.4 per cent), 2 per cent in a leadership position in a school (14 per cent for all graduates) and 17.9 per cent working outside of teaching altogether (this is 5.7 per cent of graduates altogether).

4. Teacher Education Relevance and Effectiveness

As the 2007 McKinsey Report (Barber & Mourshed, 2007) highlighted, the quality of an education system cannot exceed the quality of its teachers. In the pursuit of a high quality teaching workforce in Australia, teacher education has been the subject of changing state and federal policy reforms informed by more than 100 inquiries of various types into teacher education since 1979 (e.g. Australian Institute for Teaching and School Leadership, 2013; Caldwell & Sutton, 2010; Committee for the Review of Teaching and Teacher Education, 2003; Education and Training Committee, 2005; House of Representatives Standing Committee on Education and Vocational Training, 2007; Productivity Commission, 2012; Ramsey, 2000). Indeed, as Linda Darling-Hammond (2000) concluded in her review of 50 states in the USA, teacher preparation and development is critical to improving teacher quality.

Entry into the profession and ongoing registration of those in the profession has traditionally been the responsibility of the states and territories and the eight teacher registration authorities – the Queensland College of Teachers, the New South Wales Institute of Teachers, the Victorian Institute of Teaching, the Teachers Registration Board Tasmania, the Teachers Registration Board of South Australia, the Western Australian College of Teaching and the Northern Territory Teachers Registration Board and the recently established Australian Capital Territory Teacher Quality Institute. They aim to ensure quality teacher education programs and this quality beginning teachers entering the workforce. Recently, new processes for accrediting initial teacher education programs (Australian Institute for Teaching and School Leadership, 2011b) were endorsed. Program accreditation will continue to be undertaken by the relevant state and territory authorities, however they will now do this using the new national graduate teacher standards and program standards, and using the endorsed national accreditation processes.

A significant feature of the current landscape is the Australian Professional Standards for Teachers (Australian Institute of Teaching and School Leadership, 2011c). These comprise seven standards that describe what teachers should know and be able to do at four professional stages of a teaching career – Graduate, Proficient, Highly Accomplished and Lead. They are grouped into three domains of teaching – Professional Knowledge, Professional Practice and Professional Engagement.

Domains of teaching	Standards
Professional Knowledge	1. Know students and how they learn
	2. Know the content and how to teach it
Professional Practice	3. Plan for and implement effective teaching and learning
	4. Create and maintain supportive and safe learning environments
	5. Assess, provide feedback and report on student learning
Professional Engagement	6. Engage in professional learning
	7. Engage professionally with colleagues, parents/carers and the community

The new program standards and new professional standards have begun to be used by state and territory teacher regulatory authorities in accrediting teacher education programs from 2013 onwards. This means that, although these new professional standards for teachers provide a relevant frame of reference for judging the capacity of the 2011 graduating cohort, they did not determine the nature and scope of their teacher education programs. Their teacher education programs would have been developed and accredited before the new standards were developed and enacted. That said, the categories associated with the new Australian Professional Standards for Teachers did inform the surveys, as requested by the management group for LTEWS.

The seven Australian Professional Standards for Teachers were added to the Graduate Teacher Survey and Principal Survey which already included questions related to curriculum, pedagogy, assessment, classroom management, teaching culturally, linguistically and socio-economically diverse learners, professional ethics, collegiality, engagement in ongoing professional learning, and engagement with parents and local community. These were the themes that had emerged from an extensive review of the research literature conducted as part of the SETE study. For the LTEWS study, the analysis focussed on the seven Australian Professional Standards and three other specified areas: (i) Teaching culturally, linguistically and socio-economically diverse learners, (ii) Use of ICT and (iii) Literacy and numeracy.

Chapter 4 first includes a summary of the main findings from the mapping of initial teacher education component of LTEWS which was undertaken to understand the programs the 2011 graduate cohort would have completed. The full report is available in Appendix 1. The second section examines teacher education programs and graduates' decisions about teaching employment. Aspects of deciding entry into teacher preparation are then discussed. The final sections of this chapter discuss the findings in relation to teacher education practicums, the subjects studied and also preparation to teach i) culturally, linguistically and socio-economically diverse learners, ii) ICT, and iii) numeracy and literacy.

4.1 Mapping of Initial Teacher Education Programs in Australia, 2011

The Mapping of Initial Teacher Education in Australia 2011 component of LTEWS was designed to provide a snapshot of initial teacher education programs across Australia as they were relevant for the cohort of 2011 graduate teachers being tracked. The background, methodology and design of the mapping process are described in Section 2.2.2.

The mapping provided a point in time (October 2011 to March 2012) overview of the key dimensions and characteristics of 551 initial teacher education programs offered by 47 providers across Australia. The data was collected by desktop analysis of undergraduate and postgraduate teacher education programs recognised as accredited teacher preparation programs by the relevant state or territory teacher regulatory authority. Data was the verified with the providers and telephone interviews with personnel from each provider. The mapping data was used in the analysis of the teacher and principal survey responses and follow-up interviews with graduate teachers. The complete report is provided in Appendix 1. The summary of findings are also included here in this section of the main report for completeness.

Length, structure, and delivery

- Of the 551 initial teacher education programs offered across Australia (across 103 campuses), 397 were bachelor's degrees (72 per cent), 96 were graduate diplomas/postgraduate diplomas (17 per cent) and 58 were masters degrees (11 per cent).
- The programs ranged in length from 1-5 years. A majority of undergraduate teacher education programs were offered over four-years or part-time equivalent (63 per cent). Postgraduate programs were generally offered over 1-2 years, with masters programs commonly two years of study (or equivalent) and graduate diplomas one year. Graduate entry bachelor degrees were 1.5 or 2 years duration and postgraduate diplomas were sometimes offered as an early exit qualification from a masters degree.
- 81 per cent of programs were offered by universities and 19 per cent were offered by private colleges or TAFEs. Of the 38 universities offering teacher education programs, one was private (University of Notre Dame) and the other 37 were public universities.
- 401 programs identified the year levels that the programs prepared graduates to teach. From this data, a majority offered preparation for primary teaching (n=302) and early childhood/primary teaching (n=66).
- Based on 497 responses, 75 per cent of programs were offered in full-time mode with part time options, while 14 per cent were offered in external/distance modes.
- A majority of providers identified 'social justice' as a key distinguishing feature of their programs, followed by 'discipline/method knowledge' and 'forging community and school-university partnerships'.

Professional Experience

- Professional experiences included supervised practicum, classroom observations and internships.
- All accredited teacher education programs meet teacher regulatory authority requirements for supervised practicum, usually 80 days in schools for 4-year undergraduate programs and 45-60 days for 1-2 year programs. Note that the mapping was conducted prior to national requirements (Australian Institute of Teaching and School Leadership, 2011). Therefore, there were some variations across states and territories.

- Based on 457 programs, over 50 per cent (n=248) said they offered practicum days in excess of teacher regulatory authority minimum requirements. This finding must be treated with caution given the variation in professional experience nomenclature across Australia.
- In 462 programs, at least some of the supervised practicums were conducted in block periods of placement in schools.
- Observation days were usually incorporated in the early stages of the professional experience program. All programs incorporated early opportunities for observations in the classrooms.
- Some programs included experience in community settings in addition to the supervised practicum days.
- 82 per cent of programs offered practicum in the first year (Note: 1-year programs are included in this data). Often, double degrees did not have practicum in the first year.
- Over 43 per cent of the programs included internships as part of the professional experience. Internships were more likely to be available to pre-service teachers enrolled in bachelor's degrees than in graduate diploma or masters programs. Internships were usually 6-10 weeks in duration and usually followed completion of the minimum number of practicum days required for registration. However, because of the different ways in which the term 'internship' was used, definitive conclusions about internships across programs was difficult.

Content and Approaches

- Most teacher education providers required pre-service teachers in 4-year undergraduate programs to undertake at least two years of study in their discipline/ content area/s. Entrants into 1- or 2-year graduate programs were expected to have completed discipline studies in their previous undergraduate degree programs.
- In most teacher education programs, discipline-based content subjects were taught by the relevant discipline-based faculties or schools in the institution.
- Primary teaching preparation programs usually required pre-service teachers to study discipline-based units in conjunction with curriculum or methods units for the key learning areas.
- Many teacher education programs included study in the preparation to teach culturally, linguistically and socio-economically diverse learners. Some programs had stand-alone units, while others integrated these aspects across their programs.
- Preparation to teach ICT was usually embedded across the teacher education programs rather than through stand-alone units.
- Preparation to teach literacy and numeracy is a key requirement for teacher education program accreditation to ensure that pre-service teachers are competent to meet the literacy demands of the curriculum areas they teach. There is also recognition that graduate teachers need to possess a high level of personal literacy and numeracy.
- There is a focus on the consideration of the relevance of family and community literacy practices in some states which requires graduate teachers to incorporate their understanding of student literacy needs in the context of their subject and the broader school and community settings.

- Primary teaching preparation programs focussed on the teaching of reading, with a range of models, including instruction on how to teach phonemic awareness, phonics, fluency, vocabulary knowledge and text comprehension, and writing (including grammar and spelling), speaking and listening.
- Secondary teaching preparation programs often focused on literacy teaching within and across all subject areas so as to prepare teachers to continue the literacy development of students throughout secondary schooling in all curriculum areas.

Theory and practice integration, and partnerships with schools

- The ways in which teacher education programs helped pre-service teachers make theory-practice links varied in structure and approach. Some institutions incorporated professional placement within curriculum and educational studies units, while other institutions focused on key teaching and learning aspects (e.g. classroom management) during a specific professional experience period.
- All teacher education providers who were interviewed highlighted the importance of partnerships with schools.
- Community involvement and internship programs were seen as distinguishing features of some teacher education programs. Some institutions integrated action research and learning partnerships with community agencies.

Entry into teacher education

- Selection for entry into teacher education programs varied from state to state. Generally, entry into teacher education required candidates to meet minimum tertiary entrance requirements for that state/territory, the entry pre-requisites for the course, and to be selected in competition with other eligible applicants.
- The Australian Tertiary Admission Rank (ATAR) and results of pre-requisite Year 12 subjects were usually used as the basis for selection of school leavers into undergraduate programs.
- Institutions also used a range of other selection processes, including interviews, portfolios, auditions, character references, residential location, socio-economic status and evidence of prior learning.
- Some institutions offered bridging programs specifically designed to provide school leavers with lower ATARs with a pathway into teaching.
- Entry into postgraduate and graduate entry programs was determined based on a combination of previously completed university studies, academic results and pre-requisites specific to the sector and state teacher registration requirements.
- Providers reported valuing pre-service teachers who possessed personal values and attitudes appropriate to the discipline and/or profession as well as high levels of intellectual curiosity and critical thinking. In addition, they reported valuing pre-service teachers who demonstrated a commitment to ethical and sustainable practices, a commitment to the profession and effective communication including the use of ICTs.

4.2 Teacher Education Programs and Graduates' Decisions to Teach

This section discusses the nature of teacher education programs and the influence of the program structures and approaches on graduates' career advancement in the teaching profession.

Box 8 lists the main findings of Section 4.2.

Box 8. Main Findings: Teacher education programs and graduates' decisions to teach

Teacher education programs and graduates' decisions about teaching employment

- The percentage of graduates employed as teachers increased during the first year after graduation and then stabilized across all three teacher education program types – bachelor, masters and graduate diploma. Those respondents with a bachelor degree showed a slightly higher (but not significant) percentage of employment towards the end of the first year than did graduates with a masters degree or graduate diploma

- Employment outside teaching rose significantly in the first year after graduation. In particular, the data show that graduates with masters degrees taking employment outside teaching almost doubled over this period (from 32 to 61 per cent). This may be related to the demographic characteristics of early career teachers with graduate teacher education degrees. They tend to be more mature, often career changers, and likely therefore to have personal commitments which require them to have stable employment and limit their capacity to relocate for a teaching position. The analysis of free text responses shows that such graduates often plan to return to teaching.

- In free text responses, graduates not teaching identified factors in deciding not to seek teaching employment as job availability, further education and family circumstances. Other factors included relative salaries in teaching and other careers, other labour market opportunities, and varying relative non-pecuniary conditions of work.

Effective structures, approaches and content for preparation for employment

- Irrespective of program type, more than half of the graduates identified reflective practice (64 per cent), quality teaching (53 per cent) and literacy (51 per cent) as key distinguishing features of their teacher education programs (i.e. features that set them apart from other programs). Social relationships, teaching culturally, linguistically and socio-economically diverse learners, school linkages, team teaching and discipline expertise were identified by less than a third of graduates. Teacher education providers identified a similar order of distinguishing features of their programs.

- More than three-quarters of graduates with a teaching position agreed that the knowledge gained from the university-based component of their teacher education program was important. However, they were more likely to agree that the knowledge gained was important (for example, 79 per cent at the end of the first year) than to agree that the teacher education units helped prepare them for their current teaching context (65 per cent).

(continued on the next page)

Box 8. *(continued)*

- At the end of the first year after graduation, there was a significant difference between graduates with masters and graduate diploma degrees, with graduate diploma respondents less likely to agree that the knowledge gained through university-based units was important and prepared them for their current teaching context.
- There was no link between the campus location of the teacher education program and agreement that knowledge gained through university-based units was important and helped prepare them for their current teaching context. But respondents who completed their program in a part time basis as well as those with an early childhood education degree, were more likely to agree.
- Principals identified classroom management, pedagogy and catering for diverse learners as key challenges faced by newly employed graduate teachers.
- Principals identified poor teaching skills and classroom management as well as lack of school support and induction, lack of interpersonal/communication skills, and inadequate teacher preparation as contributing to a difficult transition for graduates into teaching.

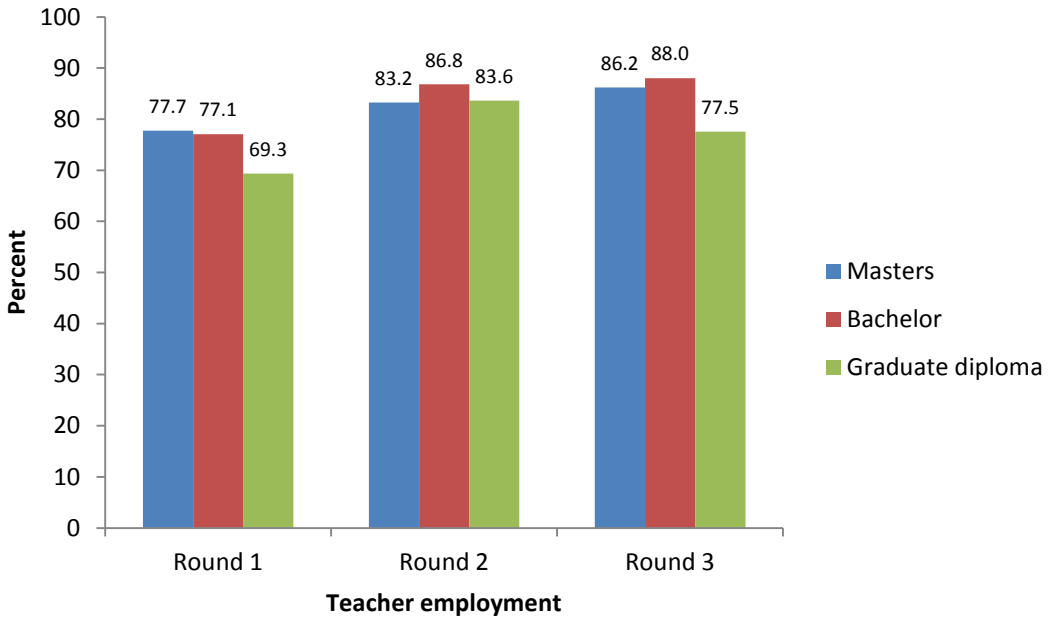
Influence of the teacher education programs on graduates' career retention and advancement

- Generally, graduates who disagreed that their education program prepared them in the professional standards 'Know students and how they learn' and 'Plan for and implement effective teaching and learning' had a higher retention rate than those who agreed their program prepared them in this area (95 per cent compared to 92 per cent).
- Graduates who agreed that their teacher education program prepared them in the standard 'Know the content and how to teach' had a higher retention rate than those who disagreed they were prepared in this area (92 per cent compared to 89 per cent).
- Graduates who disagreed that their education program prepared them to 'Know students and how they learn' had a higher percentage with leadership positions than those who agreed (31 per cent compared to 14 per cent). 19 per cent of those who disagreed they were prepared to 'Know the content and how to teach it' were in leadership positions and 12 per cent of those who agreed were in a leadership position. The only area where those in agreement with being prepared had a higher percentage in leadership positions than those who disagreed they were prepared was in 'Plan for and implement effective teaching and learning'.

4.2.1 Teacher education programs and graduates' decisions about teaching employment

This subsection investigates the relationship between initial teacher education and teaching employment. Generally, the percentage of graduates employed as teachers increased during the first year after graduation and then stabilised. Figure 21 shows a cross-tabulation of program types that beginning teachers graduated from, and their employment in schools. Those respondents with a bachelor's degree had a slightly higher (but not significant) percentage employed in Rounds 2 and 3 than did graduates with a masters or graduate diploma qualification.

Figure 21. Graduates with teaching positions – by teacher education program type

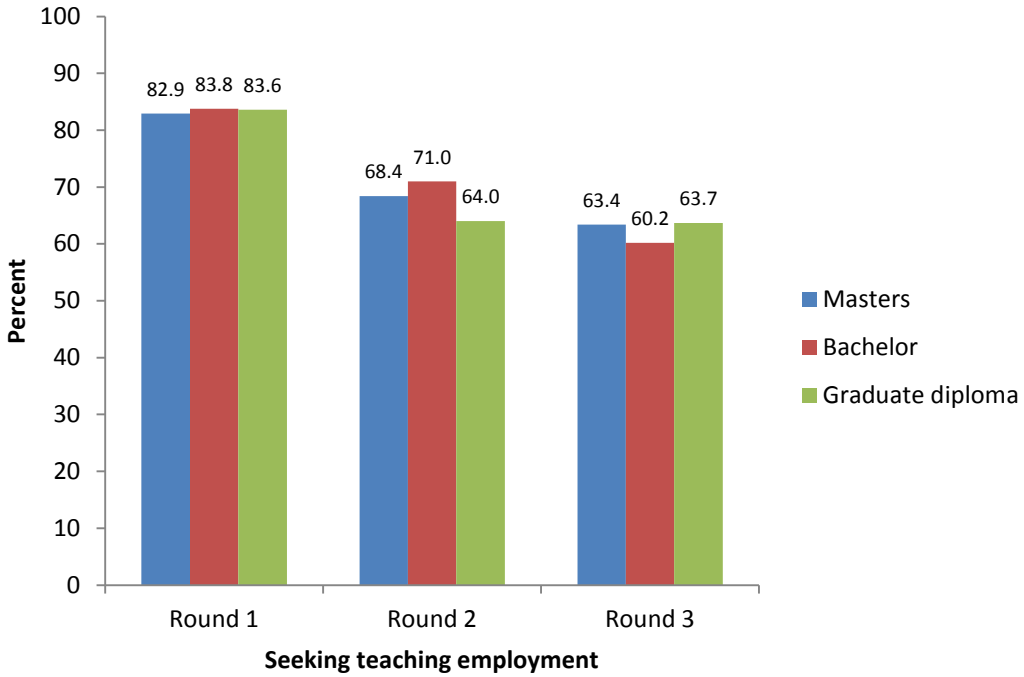


Note: 1. Response numbers as follows: Round 1 Masters = 166, Bachelor = 602, Grad. Dip. = 538; Round 2 Masters = 340, Bachelor = 1,220, Grad. Dip. = 915; Round 3 Masters = 297, Bachelor = 927, Grad. Dip. = 748.

As discussed in sub-section 3.2.3, a number of the graduate teachers continued to seek teaching employment in a school during the LTEWS data collection timeframe. Figure 22 shows the percentage of graduates who did not have a teaching position and who were seeking teaching, by their program type. Over the 12-month data collection period, the percentage seeking teaching employment fell – from 84 per cent of unemployed graduates in Round 1, to 68 per cent in Round 2 and down to 62 per cent in Round 3. The decrease in the number of unemployed graduate teachers seeking teaching employment is more pronounced in the 10 months post-graduation (Round 2) as teaching employment for this group of graduates fell by 10–15 per cent across all three program types and then stabilised.

The results show that there is no significant difference between the three program types in the percentage of unemployed graduates seeking a teaching position, although the bachelor group is slightly higher than the other two groups in Round 2 (71 per cent) and slightly lower in Round 3 (60 per cent). The reduction of graduates seeking employment reflects two trends; getting a teaching job in a school sector or getting a job in other sectors of education, including further and higher education sectors, and other industries, as discussed in Section 3.2.3.

Figure 22. Graduates without teaching positions who are seeking teaching employment – by teacher education program type



Note: 1. Response numbers as follows: Round 1 Masters = 41, Bachelor = 148, Grad. Dip. = 177; Round 2 Masters = 57, Bachelor = 162, Grad. Dip. = 150; Round 3 Masters = 41, Bachelor = 113, Grad. Dip. = 168

The group of respondents who did not have a position as a teacher in a school were asked if they had employment outside of teaching. This was the same group of graduate respondents who answered the question regarding whether they were seeking teacher employment, as shown in Figure 22 above. The percentage of this group in other employment in each round is:

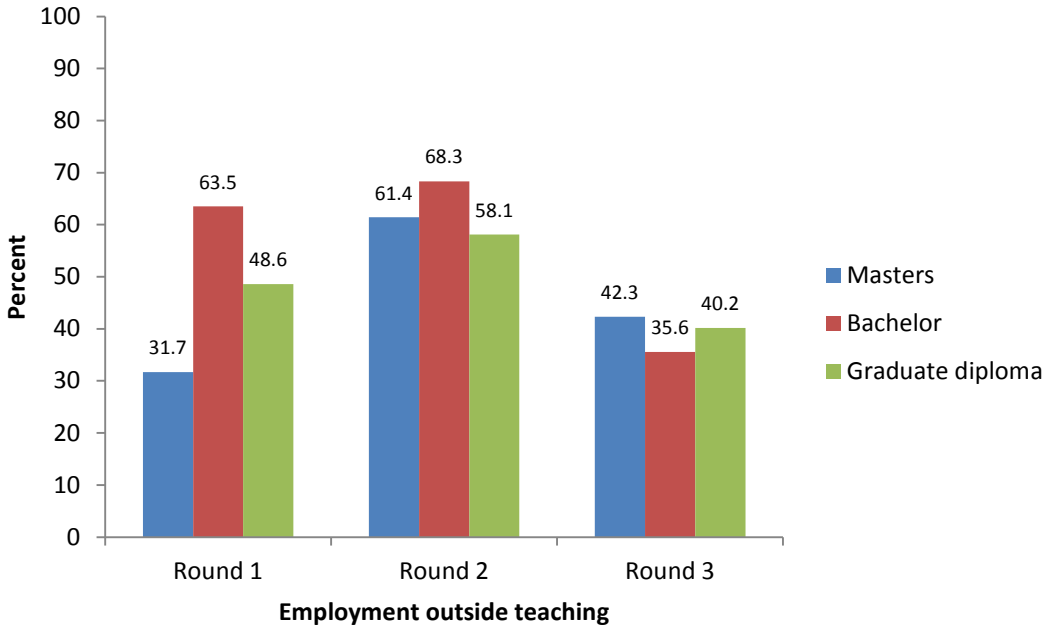
- Round 1 – 52.7 per cent
- Round 2 – 63.3 per cent
- Round 3 – 38.9 per cent

Employment outside teaching rose significantly[6] between Rounds 1 and 2. Round 3 shows a fall in employment levels outside teaching[7]. When employment outside teaching is looked at by the type of program completed (see Figure 23), Round 1 shows that graduates with a masters qualification were less likely to have employment outside teaching than graduates from the other two types of programs (masters, 32 per cent, graduate diploma 49 per cent, and bachelor 64 per cent). In Round 2, the percentage of employment outside of teaching is similar across the three program types.

[6] $p<0.01$

[7] This question in Round 3 was asked of all respondents rather than just those without teaching positions, and there was a high non-response rate from this group, so the results are not comparable to the previous Rounds.

Figure 23. Graduates without teaching positions who have employment outside teaching – by teacher education program type

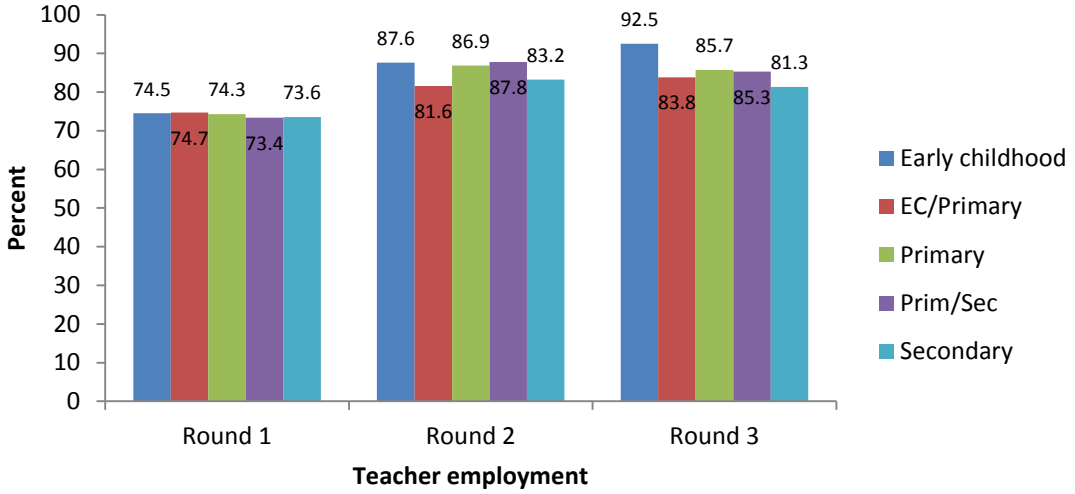


Note: 1. Response numbers as follows: Round 1 Masters = 41, Bachelor = 148, Grad. Dip. = 177; Round 2 Masters = 57, Bachelor = 161, Grad. Dip. = 148; Round 3 Masters = 129, Bachelor = 391, Grad. Dip. = 442.
2. Round 3 is not comparable with previous rounds as the response rate to this question was low (54 per cent).

Graduates' main area of their teacher education program was then cross-tabulated with having a teaching position in a school, and is shown in Figure 24 below. The figure shows that those respondents in the area of early childhood had a slightly higher (but not significant) percentage employed in teaching in Rounds 2 and 3 than did graduates from other program areas.

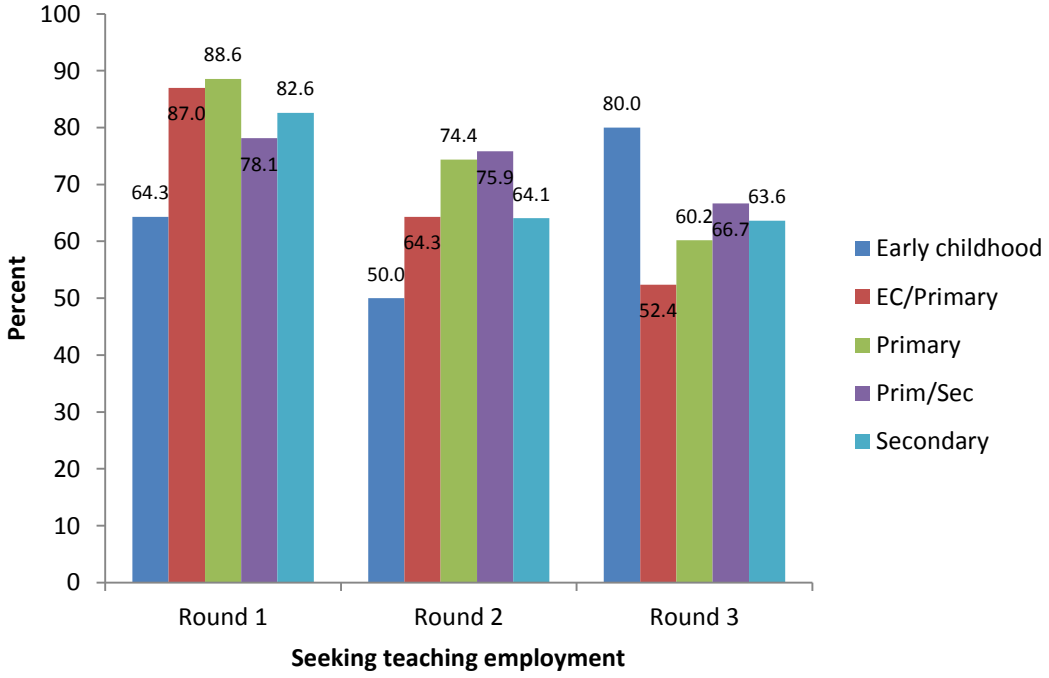
This pattern of teacher employment demonstrates the dynamics of opportunities available to graduate teachers. The highest take up of opportunities for employment relative to the cohort size and over the 3 Rounds, seemed to occur in the early childhood sector. It appears that in all other sectors some increase in take up of job opportunities occurred between Round 1 and Round 2 and then flattened by Round 3.

Figure 24. Graduates with teaching positions – by main area of teacher education program



Note: 1. Response numbers as follows: Round 1 Early Childhood = 51, EC/Prim = 83, Primary = 479, Prim/Sec = 109, Secondary = 575; Round 2 Early Childhood = 97, EC/Prim = 152, Primary = 925, Prim/Sec = 238, Secondary = 1,074; Round 3 Early Childhood = 67, EC/Prim = 130, Primary = 743, Prim/Sec = 184, Secondary = 884.

Figure 25. Graduates without teaching positions seeking teaching employment – by main area of teacher education program



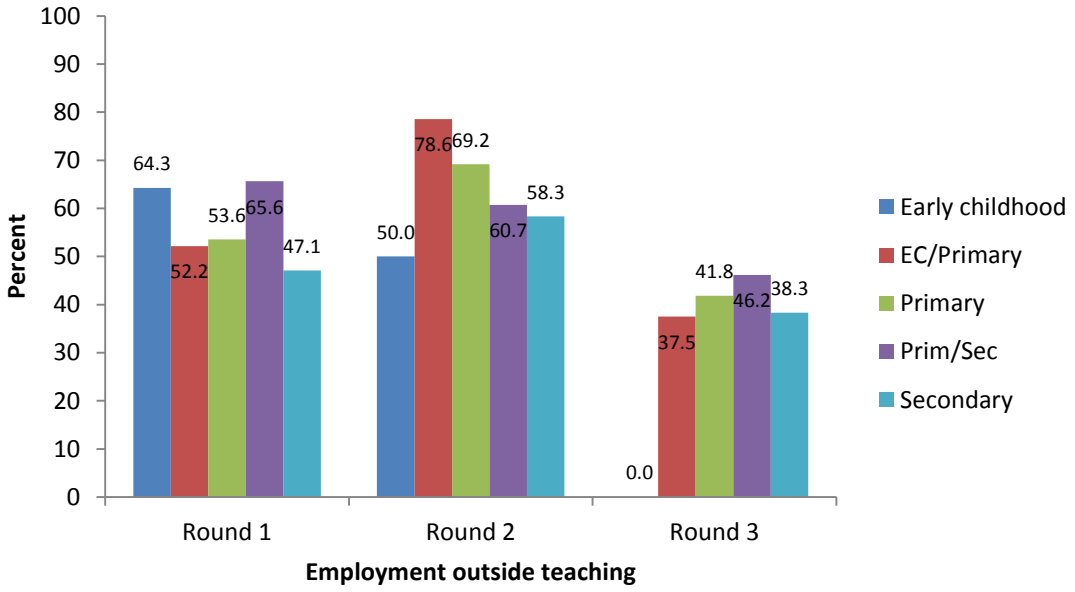
Note: 1. Response numbers as follows: Round 1 Early Childhood = 14, EC/Prim = 23, Primary = 140, Prim/Sec = 32, Secondary = 155; Round 2 Early Childhood = 12, EC/Prim = 28, Primary = 121, Prim/Sec = 29, Secondary = 181; Round 3 Early Childhood = 5, EC/Prim = 21, Primary = 108, Prim/Sec = 27, Secondary = 165.

Figure 25 shows the group of graduates who were seeking a teaching position in a school, disaggregated by the main area of their teacher education program.

In Rounds 1 and 2, there was a lower percentage of unemployed graduates with qualifications in early childhood than in the other four areas, seeking a teaching position, but in Round 3, the early childhood respondents had a higher percentage seeking teaching work. The percentage of early childhood/primary and primary area graduates seeking work consistently decreased across the three rounds, whereas secondary graduate percentages decreased from Round 1 to Round 2 then remained the same for Round 3. The group of respondents who did not have a position as a teacher in a school was asked if they had employment outside of teaching. This is the same group of graduate respondents who answered the question regarding whether they were seeking teacher employment, as shown in the Figure above.[8]

When employment outside of teaching is looked at by the main area of program completed, Round 1 shows that graduates from early childhood and middle school programs were more likely to have employment outside a school than graduates from the other three types of programs (early childhood, 64 per cent and primary/secondary 66 per cent, with early childhood/primary 52 per cent, primary 54 per cent, and secondary 47 per cent). In Round 2, the percentages show a different employment pattern across the area of teaching: early childhood/primary have the highest level of employment outside teaching, with 79 per cent, then primary (69 per cent), primary/secondary (61 per cent), secondary (58 per cent), and early childhood (50 per cent).

Figure 26. Graduates without teaching positions who have employment outside teaching – by main area of teacher education program



[8] Again, in Round 3 the question on employment outside of teaching was asked of all respondents rather than just those without teaching positions and there was a high non-response rate from this group, so the results are not comparable to the previous rounds

Note: 1. Response numbers as follows: Round 1 Early Childhood = 14, EC/Prim = 23, Primary = 140, Prim/Sec = 32, Secondary = 155; Round 2 Early Childhood = 12, EC/Prim = 28, Primary = 121, Prim/Sec = 29, Secondary = 181; Round 3 Early Childhood = 2, EC/Prim = 8, Primary = 55, Prim/Sec = 13, Secondary = 94.
2. Round 3 is not comparable with previous rounds as the response rate to this question was low (54 per cent).

The data show the changing opportunities for employment in terms of both the teaching profession and other occupations. In such circumstances, graduate teachers considered a wider range of occupational as well as non-occupational factors. The analysis of survey free text responses showed that the main factors in deciding not to seek teaching employment were job availability, further education and family circumstances. Other factors included relative salaries in teaching and other careers, other labour market opportunities, and varying relative non-pecuniary conditions of work.

Previous research on the topic of graduating teachers' decision-making has identified several factors that can act as enticements into teaching. Higher salaries received by teacher have consistently been identified as increasing the likelihood of seeking teaching employment, or reducing the likelihood of teachers exiting the profession. The estimated impact of salaries on the supply of labour is frequently large, with the exception of a study by Frijters, Shields & Wheatley Price (2004) which found a lower impact. Other frequently observed results include that pecuniary effects are larger for men than for women. In addition, results generally show that teachers with higher-level qualifications, or living in areas with higher average non-teaching salaries, are more likely to leave their teaching jobs. A limited number of studies have also considered the quality of teachers, with the general finding being that higher salaries paid to teachers raises teaching quality, e.g. as measured by the teachers' impact on learning outcomes or test scores (Hanushek, Kain, & Rivkin, 1999; Stinebrickner, 2001).

It should be noted, however, that non-pecuniary factors such as workload, job stress and the public perception of the profession, as well as individual preferences, are also likely to play an important role in the decision to enter teaching. For example, the study conducted by Smithers and Robinson (2003) found that potential teachers perceived such conditions adversely. Salhberg (2011) argues that teaching in Finland is one of the most respected professions. As a result, school teaching is the most sought-after career. Although the status of teachers can be attributed to the cultural characteristics of society, the examination of high-performing jurisdictions suggests that trust and respect can be, in large measure, the result of the implementation of specific policies and practices.

In LTEWS, the patterns of seeking employment by main areas of teacher education do not show a relationship between the area of teacher education program and a decision whether or not to seek teaching employment. The fluctuation of data seems to reflect the state of the labour market. In considering whether or not to teach, graduates take into account pecuniary and non-pecuniary factors, including workload, job stress, public perception of the profession, further studies, family circumstances, as well as individual preferences.

4.2.2 Structures, approaches and content considered by graduates and principals as being effective in preparing teachers for initial employment

This section draws on survey data concerning graduates' perceptions about their teacher preparation program. This includes both statistical data and free text responses. Principals were also surveyed with regard to their perceptions of how well teacher education programs currently equip graduates to handle their responsibilities as early career teachers.

Distinguishing features of programs

In the Graduate Teacher Survey, respondents were asked to identify any distinguishing features of their teacher preparation programs that set them apart from other programs, from a list generated through the teacher education program mapping activity. Table 56 shows those that graduate teachers identified as distinguishing features of their teacher education programs.

Table 56. Graduate teachers' perceptions of the distinguishing features of their teacher education programs

	n	%
Reflective practice	1,761	63.7
Quality teaching	1,460	52.8
Literacy	1,421	51.4
ICT skills	1,318	47.7
Supportive learning environments	1,295	46.8
Practicum visits from academic staff	1,282	46.4
Numeracy	1,276	46.1
Linking theory and practice	1,223	44.2
Content knowledge	1,215	43.9
Internship	992	35.9
Social justice	970	35.1
Social relationships	907	32.8
School Linkages	851	30.8
Catering for cultural and linguistically diverse learners	784	28.4
Team teaching	750	27.1
Discipline expertise	638	23.1
Community-based learning	588	21.3
Rural Education	522	18.9
Distance education	492	17.8

Note: n=2,765

The distinguishing features of teacher education programs most often referred to by the graduate respondents were reflective practice (64 per cent), quality teaching (53 per cent) and literacy (51 per cent). ICT and numeracy were also high on the list as distinguishing features. However, social relationships, catering for cultural and linguistically diverse learners, school linkages, team-teaching and discipline expertise, were identified by less than a third. The features that had the smallest number of responses were rural education and distance education (19 and 18 per cent, respectively).

When graduates' perceptions of distinguishing features were cross-tabulated with program type, the following results occurred. The distinguishing features are listed in Table 57 below in the order of their ranking according to those from a Bachelor of Education program.

Table 57. Graduate teacher perceptions of teacher education program distinguishing features – by program type

	Masters		Bachelor		Grad. Dip.	
	n	%	n	%	n	%
Reflective practice	259	72.1	872	68.8	622	65.5
Quality teaching	207	57.7	773	61.0	475	50.1
Literacy	189	52.6	770	60.8	457	48.2
Numeracy	159	44.3	707	55.8	405	42.7
Supportive learning	154	42.9	690	54.5	443	46.7
ICT skills	173	48.2	689	54.4	451	47.5
Practicum visits from academic staff	175	48.7	677	53.4	424	44.7
Content knowledge	161	44.8	674	53.2	375	39.5
Linking theory and practice	173	48.2	632	49.9	411	43.3
Internship	122	34.0	629	49.6	237	25.0
Social justice	143	39.8	546	43.1	278	29.3
Social relationships	111	30.9	497	39.2	293	30.9
School linkages	126	35.1	437	34.5	284	29.9
Team teaching	98	27.3	422	33.3	226	23.8
Catering for cultural and linguistically diverse learners	118	32.9	409	32.3	254	26.8
Community learning	75	20.9	374	29.5	135	14.2
Discipline expertise	99	27.6	320	25.3	213	22.4
Rural education	58	16.2	314	24.6	147	15.5
Distance education	49	13.6	259	20.4	182	19.2

Note: Masters n=359, Bachelor n=1,267, Grad. Dip. n=949

The top three distinguishing features, referred to by respondents, were the same for all three program types. Across the three program types, reflective practice was perceived as a distinguishing feature by 72 per cent of those with a masters teacher education qualification, 69 per cent of those with a bachelor's degree and 66 per cent of those with a graduate or postgraduate diploma. Numeracy was higher up the list for those with a bachelor's degree, with 56 per cent indicating this as a distinguishing feature compared to 44 per cent of those from a masters program and 43 per cent of those from a graduate program. The distinguishing features referred to least by respondents were rural education and distance education for those from a masters and bachelor program. For graduate diploma respondents, community learning and rural education were the two least referred to features.

Information on how some of the above features were incorporated into teacher education programs was gathered from the teacher education institutions as part of the initial teacher education mapping component of the project. Key personnel in the institutions were asked to nominate whether some of the above features were addressed in their teacher education programs as stand-alone units, embedded in the overall program, or in a combination of

both ways. The programs in which graduate teacher respondents were enrolled were cross-tabulated with this information and are shown in Table 58 below.

Table 58. Graduate teacher perceptions of teacher education program distinguishing features – by type of delivery

	Standalone		Embedded		Combination		NA	
	n	%	n	%	n	%	n	%
Discipline knowledge	946	78.7	63	5.2	193	16.1	-	0.0
Teaching culturally, linguistically and socio-economically diverse learners	372	30.6	320	26.3	453	37.3	71	5.8
ICT	219	17.2	370	29.1	534	41.9	150	11.8
Numeracy	200	13.9	535	37.1	330	22.9	354	24.5
Literacy	197	13.5	461	31.7	419	28.8	354	24.3
Assessment knowledge	355	26.1	467	34.3	467	34.3	71	5.2
Pedagogical knowledge	303	22.3	490	36.0	496	36.5	71	5.2
Curriculum knowledge	177	13.0	484	35.6	628	46.2	71	5.2
Classroom management skills	327	26.0	381	30.3	479	38.1	71	5.6

Note: n=2,765

As expected, the key feature with the highest percentage being delivered as a stand-alone unit is discipline knowledge (79 per cent). Distinguishing features that are more commonly embedded than others include numeracy (37 per cent) and pedagogical knowledge (36 per cent). Features that are more commonly addressed in teacher education programs in a combination of stand-alone and embedded units are curriculum knowledge (46 per cent) and ICT (42 per cent).

Table 59 shows the institutional view of distinguishing features of teacher education programs compared to the graduate respondents' views of distinguishing features. The institutional information was collected for the mapping component of the project.

Table 59. Distinguishing features of teacher education programs – by graduate teachers and institutions

	Graduates' views		Institutional views	
	n	%	n	%
Social justice	500	27.2	28	63.6
Discipline/method knowledge	409	22.2	18	40.9
Community partnerships	448	24.4	18	40.9
School-university partnerships	293	15.9	15	34.1
Developing reflective practitioners	273	14.8	14	31.8
Quality teaching/quality programs	234	12.7	13	29.5
Ongoing professional learning	291	15.8	13	29.5

Catering for cultural and linguistically diverse learner/community focus	208	11.3	11	25.0
School/community partnerships	162	8.8	10	22.7
Rural education focus	176	9.6	9	20.5
Others	42	2.3	7	15.9
Placement supervision	100	5.4	5	11.4
Internship	9	0.5	2	4.5
Distance education	125	6.8	2	4.5
Teach teaching	0	0.0	1	2.3

Note: Graduates n=2,765; Institutions n=44

The table is ranked in order of the features that institutions stated as a distinguishing feature of their teacher education program. The order of elements identified as distinguishing features by the graduates matches the institutional view. Although overall percentages are lower for graduates, both have the highest proportion nominating social justice as the distinguishing feature (27 per cent for graduates and 64 per cent for institutions). All other features have a similar decreasing order of magnitude for graduates and institutions.

Importance of university-based units of study in teacher education programs

Table 60 below shows the responses to two questions in the Graduate Teacher Survey that asked about the importance of the university-based component of teacher education programs. The questions required a response on a five-point Likert scale to indicate the level of agreement with the following statements:

- The knowledge for teaching I gained through my university-based units were important
- The university-based units of my teacher education program helped prepare me for my current teaching context

Table 60. Importance of university-based units for the knowledge gained and help in preparing for current teaching

	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 2					
Knowledge gained through university-based units was important	1.7	6.4	13.0	58.1	20.8
University-based units helped prepare me for my current teaching context	3.0	11.8	19.9	51.3	14.1
Round 3					

Knowledge gained through university-based units was important	2.1	8.5	14.1	56.7	18.5
University-based units helped prepare me for my current teaching context	4.4	14.2	20.6	48.1	12.7

The data show that in both surveys, respondents were more likely to agree that the knowledge gained was important (78.9 per cent in Round 2 and 75.2 per cent in Round 3) than to agree that the units helped prepare them for their current teaching (65.4 per cent in Round 2 and 60.8 per cent in Round 3).

The level of disagreement with both statements rose slightly from Round 2 to Round 3; disagreement that the knowledge gained was important rose from 8 per cent in Round 2 to almost 11 per cent in Round 3; disagreement that the units helped prepare them for their current teaching rose from 15 per cent in Round 2 to almost 19 per cent in Round 3.

Responses to the statement 'University-based units helped prepare me for my current teaching context' were then cross-tabulated with the distinguishing features of teacher education programs. This analysis was conducted to look for possible relationships between distinguishing features of programs and graduates' level of agreement that university-based content helped prepare them for their current teaching.

In Table 61 below, an agreement level higher than 65.4 per cent (combining 51.3 'agree' + 14.1 'strongly agree' as shown for statement 2 in Round 2 in the table above) indicates there may be a positive relationship between that particular distinguishing feature and agreement that university-based units prepared graduates for their teaching.

Table 61. Importance of university-based units for the knowledge gained and help in preparing for current teaching

University-based units helped prepare me for my current teaching context	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
School linkages	2.6	7.9	16.6	54.4	18.5
Community-based learning	1.9	8.5	15.8	55.7	18.1
Reflective practice	2.4	8.9	17.8	55.4	15.5
Social justice	2.2	9.3	15.8	55.3	17.3
Discipline expertise	1.9	7.0	15.5	54.2	21.4
Internship	2.1	10.7	20.3	53.2	13.7
Quality teaching	1.8	7.8	16.3	55.8	18.2
Distance education	3.3	7.3	14.6	57.0	17.8
Team teaching	1.7	7.3	15.6	57.2	18.3
Practicum visits from academic staff	2.3	9.4	18.5	53.2	16.6
Rural education	1.4	10.9	16.4	51.4	19.8
CALD learners	2.3	8.8	13.9	52.9	22.1
Linking theory and practice	1.9	6.1	15.3	56.7	20.0
ICT skills	2.0	8.4	16.4	55.7	17.6
Literacy	2.3	8.5	17.0	56.2	16.0
Numeracy	1.9	9.1	16.7	55.8	16.6

Content knowledge	1.8	8.2	14.6	56.4	19.1
Supportive learning environments	1.4	8.1	15.7	56.6	18.1
Social relationships	1.5	7.8	16.3	54.5	19.8

One-way between subjects ANOVA tests were conducted to compare the effect of several key program variables on the two statements in the survey that looked at graduates' opinions of university-based units. The key program variables are:

- Program type (masters, bachelor, graduate diploma)
- Campus location (metropolitan, outer-metropolitan, regional, off-campus, various locations)
- Mode of study (full-time, part-time, combination)
- Main area of program (early childhood, early childhood/primary, primary, primary/secondary, secondary)

The results for program type are shown in Table 62 below.

Table 62. Comparison of mean for university-based units statements – by program type

	Masters		Bachelor		Grad dip		Signif
	Mean	SD	Mean	SD	Mean	SD	*p*
Round 2							
Knowledge gained through university-based units was important	4.01	0.868	3.91	0.813	3.86	0.881	0.034
University-based units helped prepare me for my current teaching context	3.70	0.939	3.62	0.939	3.60	1.002	0.348
Round 3							
Knowledge gained through university-based units was important	3.87	0.962	3.83	0.840	3.74	0.991	0.072
University-based units helped prepare me for my current teaching context	3.65	1.073	3.53	0.972	3.45	1.077	0.044

Note: Round 2: Masters n=270, Bachelor n=1,000, Grad. Dip. n=724; Round 3: Masters n=244, Bachelor n=773, Grad. Dip n=545 $p<0.05$

There was a significant effect for program type on graduate teacher agreement with 'Knowledge gained through university-based units were important' (statement 1) in Round 2 and on agreement with 'University-based units helped prepare me for my current teaching context' (statement 2) in Round 3, both at the $p<0.05$ level.

A *post hoc* test was performed on statement 1 in Round 2 and found there was significant difference between masters and graduate diploma respondents, with graduate diploma respondents less likely to agree that the knowledge gained through university-based units was important.

A *post hoc* test was performed on statement 2 in Round 3 and found there was significant difference between masters and graduate diploma respondents, with graduate diploma respondents less likely to agree that university-based units help prepare them for their current teaching context. The results of the one-way between subjects ANOVA for campus location and the two statements on university-based units are shown in the table below.

The results of the one-way ANOVA for campus location and the two statements on university-based units are shown in Table 63 below. The results for both rounds show no significant differences in agreement with the two statements for respondents by their campus location.

Table 63. Comparison of mean, for agreement with statements on university-based units – by campus location

	Metro		Outer metro		Regional		Off-campus		Various		Signif
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	*p*
Round 2											
Knowledge gained through university-based units was important	3.90	0.886	3.89	0.794	3.90	0.845	4.00	0.807	3.86	0.912	0.603
University-based units helped prepare me for my current teaching context	3.64	0.973	3.59	0.922	3.54	0.987	3.69	0.987	3.71	0.860	0.407
Round 3											
Knowledge gained through university-based units was important	3.78	0.958	3.77	0.88	3.84	0.790	3.79	0.979	4.09	0.879	0.377
University-based units helped prepare me for my current teaching context	3.49	1.033	3.55	1.026	3.55	0.962	3.46	1.120	3.64	1.194	0.798

Note: Round 2: Metro n=888, Outer metro n=133, Regional n=335, Off-campus n=213, Various n=35; Round 3: Metro n=707, Outer metro n=128, Regional n=255, Off-campus n=180, Various n=33 p<0.05

The results of the one-way ANOVA for mode of study and the two statements on university-based units are shown in Table 64 below. There was a significant effect for mode of study on graduate teacher agreement with statement 1 in Rounds 2 and 3 and on agreement with statement 2 in Round 2, both at the p<0.05 level.

Table 64. Comparison of mean, for agreement with statements on university-based units – by mode of study

	Full-time		Part-time		Combination		Signif
	Mean	SD	Mean	SD	Mean	SD	*p*
Round 2							
Knowledge gained through university-based units was important	3.90	0.900	4.10	0.800	3.90	0.900	0.001
University-based units helped prepare me for my current teaching context	3.60	0.972	3.80	0.943	3.60	0.980	0.031
Round 3							
Knowledge gained through university-based units was important	3.80	0.900	4.00	0.800	3.90	0.800	0.008
University-based units helped prepare me for my current teaching context	3.50	1.000	3.70	1.000	3.60	1.000	0.056

Note: Round 2: Full-time n=1,269, Part-time n=180, Combination n=154; Round 3: Full-time n=1,041, Part-time n=139, Combination n=123; p<0.05

A *post hoc* test was conducted on these areas in Rounds 2 and 3, and the significant differences are shown in Table 65.

Table 65. Comparison between groups, of mean for agreement with statements on university-based units – by program type

Comparisons between mode of study	Significance *p*	
	Round 2	Round 3
Knowledge gained through university-based units was important		
Full-time and part-time	0.001	0.012
Full-time and combination	0.871	0.290
Part-time and combination	0.009	0.621
University-based units helped prepare me for my current teaching context		
Full-time and part-time	0.024	0.065
Full-time and combination	1.000	0.499
Part-time and combination	0.144	0.723

Post hoc comparisons using the Tukey HSD test indicated that the mean score for:

- 'Knowledge gained through university-based units was important' was significantly different between:
  - respondents who completed their education program on a full-time and on a part-time basis, in both rounds
  - respondents who completed their education program on a part-time basis and through a combination of full-time and part-time attendance, in Round 2

  This suggests that respondents who completed their program on a part-time basis were more likely than both other groups to agree with the statement 'Knowledge gained through university-based units was important' in Round 2, and more likely to say this than those who completed full-time in Round 3,

- 'University-based units helped prepare me for my current teaching context' was significantly different between the respondents who completed their education program on a full-time and on a part-time basis, in Round 2

  This suggests that respondents who completed their program on a part-time basis were more likely than full-time respondents to agree with the statement 'University-based units helped prepare me for my current teaching context' in Round 2.

The results of the one-way ANOVA for program area and the two statements on university-based units are shown in Table 66 below.

Table 66. Comparison of mean, for agreement with statements on university-based units – by program area

	Early Childhood		EC/Prim		Primary		Prim/Sec		Secondary		Signif
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	*p*
Round 2											
Knowledge gained through university-based units was important	4.30	0.600	4.00	0.800	3.90	0.900	3.90	0.800	3.80	0.900	0.000
University-based units helped prepare me for my current teaching context	3.96	0.637	3.57	0.984	3.65	0.964	3.55	1.009	3.59	0.972	0.015
Round 3											
Knowledge gained through university-based units was important	4.08	0.720	3.95	0.638	3.85	0.880	3.73	0.930	3.73	0.975	0.011
University-based units helped prepare me for my current teaching context	3.80	0.840	3.52	0.844	3.54	1.014	3.37	1.030	3.49	1.065	0.124

Note: Round 2: Early Childhood n=77, EC/Prim n=112, Primary n=754, Prim/Sec n=196, Secondary n=862; Round 3: Early Childhood n=60, EC/Prim n=101, Primary n=607, Prim/Sec n=151, Secondary n=676 p<0.05

There was a significant effect for program area on agreement with both statements at the p<0.05 in Round 2 and with statement 1 in Round 3. A *post hoc* test was conducted on the two statements, and the significant differences are shown in Table 67below.

Table 67. Comparison of mean, for agreement with statements on university-based units – by program area

Comparisons between program areas	Significance *p*	
	Round 2	Round 3
Knowledge gained through university-based units was important		
EC and EC/Primary	0.030	0.947
EC and Primary	0.001	0.377
EC and Primary/Secondary	0.001	0.107
EC and Secondary	0.000	0.049
EC/Primary and Primary	0.995	0.889
EC/Primary and Primary/Secondary	0.930	0.400
EC/Primary and Secondary	0.464	0.220
Primary and Primary/Secondary	0.961	0.718
Primary and Secondary	0.087	0.239
Primary/Secondary and Secondary	0.899	1.000
University-based units helped prepare me for my current teaching context		
EC and EC/Primary	0.050	0.563

EC and Primary	0.049	0.431
EC and Primary/Secondary	0.012	0.066
EC and Secondary	0.011	0.208
EC/Primary and Primary	0.941	1.000
EC/Primary and Prim/Secondary	0.999	0.850
EC/Primary and Secondary	1.000	0.999
Primary and Primary/Secondary	0.694	0.427
Primary and Secondary	0.783	0.927
Primary/Secondary and Secondary	0.976	0.798

Post hoc comparisons using the Tukey HSD test indicated that the mean score for:

- 'Knowledge gained through university-based units was important', was significantly different between:
    - Early childhood graduates and respondents from all four areas in Round 2
    - Early childhood and secondary graduates in Round 3

  This suggests that respondents from the early childhood program area were more likely to agree that the 'Knowledge gained through university-based units was important' than were all other respondents in Round 2, and more likely to say this than those whose program area was secondary in Round 3.

- 'University-based units helped prepare me for my current teaching context' was significantly different between:
    - Early childhood graduates and respondents from primary, primary/secondary and secondary areas in Round 2

  This suggests that respondents from the early childhood program area were more likely to agree than those from primary, primary/secondary and secondary that 'University-based units helped prepare me for my current teaching context'.

Principals' perspectives on challenges faced by graduate teachers and transition difficulties

Principals were asked to name two challenges they perceived graduate teachers faced when they began teaching. Table 68 provides a summary of the key themes from principals' responses, ordered by the number of references given by principals to each.

Table 68. Principals' views of key challenges faced by newly employed graduate teachers

	Challenges
1	Classroom management
2	Pedagogy
3	Catering for diverse learners
4	Assessment and reporting
5	Behaviour management
6	Engagement with parents/families/communities
7	Workload
8	Curriculum
9	Qualities of being an effective teacher
10	Time management
11	Working and learning from other staff
12	Teaching

13	Effectiveness of tertiary degree
14	Student engagement
15	Professional ethics/standards
16	Working and living in a rural or remote area
17	Access to support
18	Administration
19	Special education

The most common area of challenge referred to by principals was classroom management, followed by pedagogy and catering for diverse learners. Comments from principals in relation to challenges associated with classroom management include:

- Establishing a relationship with students whilst at the same time learning the art of teaching
- I am concerned that at times graduate teachers can be intimidated by the students and perhaps "want to befriend" kids; early career teachers need to make sure they maintain clear expectations of acceptable behaviour and that they are not afraid to be tough when needed

Comments from principals in relation to challenges associated with pedagogy include:

- I have observed a lack of confidence in ability to work within pedagogically sound frameworks
- Implementing pedagogical practices that might not fit the culture of the school
- Having a comprehensive understanding of the pedagogy that will both engage and support the learner

Comments from principals in relation to challenges associated with catering for diverse learners include:

- The complex needs that students from low socio-economic backgrounds and with learning needs bring to the school settings now
- Knowing how to build relationships with students while setting those high expectations and also knowing what to be tough on when there are so many other personal issues for these students

Principals were also asked what, in their opinion, made graduates' transition into teaching difficult. The following table summarises principals' responses, again ordered by the number of references to each.

Table 69. Principals' views of key attributes that contribute to a difficult transition into teaching

Attributes
Teacher
Poor teaching skills/classroom management
Lack of interpersonal/communication skills (parents, teachers, students)
Wrong career choice or personal challenges
Do not listen to advice/not willing to improve
Did not seek support
Unable to adapt to the remoteness of school
Unrealistic expectations/lack of understanding of what teaching is about
Unable to connect to school culture

No commitment/enthusiasm to teaching
Unable to work or obstructions to work with other teachers
Unprofessional
Workload pressures/time management
Do not know the curriculum
Lack of confidence
Overconfidence
Not preparing for class

School

Lack of support offered
Lack of induction
No or ineffective mentoring program
Not able to access professional learning opportunities
No performance feedback
Poor selection process

Students

Poor student behaviour

Other

Not prepared adequately by institutions

The most common response was poor teaching skills and classroom management. However, principals also noted lack of school support and induction as well as lack of interpersonal/communication skills and inadequate teacher preparation as contributing to a difficult transition into teaching. These attributes reflect partly on the quality of the preparation provided by initial teacher education programs, but they also connect with issues of school culture and school support.

4.2.3 Influence of teacher education programs on career retention or advancement

This section presents findings on whether the nature of graduates' teacher education programs had any impact on whether they stayed in or left the teaching profession. The data was analysed in various ways to examine this.

First, distinguishing features of teacher education programs were cross-tabulated with variables on retention and advancement in the longitudinal datasets. This cross-tabulation was further analysed by separating the results according to school geographical area (i.e. major city, inner regional, out regional, remote and very remote), school type (i.e. early childhood, primary, secondary and combined) and Aboriginal and Torres Strait Islander focus (i.e. schools with and without an Aboriginal and Torres Strait Islander focus).

Second, graduates' preparation in the seven Australian Professional Standards for Teachers[9] variables was cross-tabulated with retention and advancement variables. However, the results were not reliable for reasons discussed further below. As such, the findings are supplemented by analysis of the qualitative data. The interaction of these two data sets is important as the longitudinal nature of this question cannot be addressed on the basis of the qualitative data alone.

The nature of teacher education programs was analysed in terms of the distinguishing features of these programs:

- Reflective practice
- Quality teaching
- Literacy
- ICT skills
- Supportive learning environments
- Practicum visits from academic staff
- Numeracy
- Linking theory and practice
- Content knowledge
- Internship
- Social justice
- Social relationships
- School Linkages
- CALD learners
- Team teaching
- Discipline expertise
- Community-based learning
- Rural education
- Distance education

These distinguishing features were cross-tabulated with variables on retention and advancement in the longitudinal datasets – looking at Cohort 2 (which tracks changes over the 6-month period from October 2012 to March 2013) and Cohort 3 (which tracks changes over the 12-month period from March 2012 to March 2013). No relationship was found between the distinguishing features of programs and respondents' retention or

[9] 1) Know students and how they learn; 2) Know the content and how to teach it; 3) Plan for and implement effective teaching and learning; 4) Create and maintain supportive and safe learning environments; 5) Assess, provide feedback and report on student learning; 6) Engage in professional learning; 7) Engage professionally with colleagues, parents/carers and the community

advancement. The number of respondents in each cell in these calculations was too few, causing standard errors to be too high for the results to be reliable.

In case there was a relationship between distinguishing features of education programs and retention/advancement when the school was taken into account, the cross-tabulation of distinguishing features with retention and advancement was further analysed by separating the results according to:

- school geographical area (i.e. major city, inner regional, out regional, remote and very remote)
- school type (i.e. early childhood, primary, secondary and combined)
- Aboriginal and Torres Strait Islander focus (i.e. schools with and without an Aboriginal and Torres Strait Islander focus)

The resulting number of respondents in each cell in the calculations for all three of these school characteristics was too small. This increased the size of the standard error so that results were not reliable.

In order to further investigate the nature of teacher education programs and possible influence on graduates' career retention and advancement, graduates' preparation in the Australian Professional Standards for Teachers was substituted for the distinguishing features of programs. The same analysis was conducted, cross-tabulating the professional standards variables with retention and advancement variables. Again, no relationship was found, and standard errors in many cells were too large. The two tables below show some results of this cross-tabulated data.

The responses to preparation in the professional standards, which were recorded on a five-point Likert scale from 'strongly disagree' to 'strongly agree', were grouped into three groups, as follows:

- strongly disagree and disagree were merged into one category named 'Disagree'
- strongly agree and agree were merged into one category named 'Agree'
- neither agree nor disagree remained a category on its own, and was not used for the purpose of this analysis

The first table, Table 70, shows the percentage for graduates who 'Disagree' and 'Agree' that their teacher education program prepared them in three of the Australian Professional Standards for Teachers variables, cross-tabulated with retention and attrition (i.e. left teaching employment). The responses in the data below are from those graduates who participated in the two Graduate Teacher Surveys over the six months from October 2012 to March 2013 (Cohort 2).

Table 70. Graduates' level of agreement that their teacher education programs prepared them in the professional standards – by retention and attrition as a teacher in a school

	Know students and how they learn		Know the content and how to teach it		Plan for and implement effective teaching and learning	
	Disagree %	Agree %	Disagree %	Agree %	Disagree %	Agree %
Cohort 2						
Retained	95.3	91.7	89.3	92.3	94.5	91.9
Attrition	4.7	8.3	10.7	7.7	5.5	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

The results show that those who disagreed that their education program prepared them in 'Know students and how they learn' had a higher retention rate than those who agreed their program prepared them in this area (95 per cent compared to 92 per cent). This was also the case for the key area 'Plan for and implement effective teaching and learning', where there was a 95 per cent retention rate for those who disagreed they were prepared in this area, and a 92 per cent retention rate for those who agreed they were prepared in this area. The only area where those in agreement with being prepared had a higher retention rate than those who disagreed they were prepared was in 'Know the content and how to teach it' (92 per cent retention for the 'agrees' and 89 per cent retention for the 'disagrees').

The second table, Table 71, shows the percentages for graduates who 'Disagree' and 'Agree' that their teacher education program prepared them in the three professional standards variables, cross-tabulated with having a leadership position in a school. The responses in the data below are from those graduates who participated in the two Graduate Teacher Surveys over the 12 months from March 2012 to March 2013 (Cohort 3).

Table 71. Graduates' level of agreement that teacher education programs prepared them in the professional standards – by leadership position as a teacher in a school

	Know students and how they learn		Know the content and how to teach it		Plan for and implement effective teaching and learning	
	Disagree %	Agree %	Disagree %	Agree %	Disagree %	Agree %
Cohort 3						
Leadership position	30.8	13.9	19.2	12.3	11.5	15.6
No leadership position	69.2	86.1	84.6	77.5	69.2	89.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

The results show that those who disagreed that their education program prepared them in 'Know students and how they learn' had a higher percentage with a leadership position in a school than those who agreed their program prepared them in this area (31 per cent compared to 14 per cent). This was also the case for the key area 'Know the content and how to teach it', where 19 per cent of those who disagreed they were prepared in this area were in a leadership position and 12 per cent of those who agreed they were prepared in this area were in a leadership position.

The only key area in the standards where those in agreement with being prepared had a higher percentage in leadership positions than those who disagreed they were prepared was in 'Plan for and implement effective teaching and learning' (16 per cent in a leadership position for the 'agrees' and 11.5 per cent in a leadership position for the 'disagrees').

In case relationships between these professional standards variables were dependent on the characteristics of schools, the results of these cross-tabulations were analysed by the three separate school variables listed above. The resulting number of respondents in each cell for each school variable analysis was again too small to ensure reliable results.

Interview data

The analyses of participant interviews demonstrate that most graduates see themselves as beginning professionals who can impact students' learning. They attribute their success in part to various features of their teacher education programs. When asked about their future plans, these graduates responded that 'they would stay in their schools and in teaching'. In this regard, qualitative data provides an indirect measure of teacher education program effectiveness in relation to retention and career progression. The areas of success identified by graduate teachers in their responses were: assessment and reporting, behaviour management, knowing students and their engagement, flexibility and adaptability, communication and relationships, collaboration, content knowledge, creating a positive learning environment, curriculum development, lesson planning, effecting learning, ICT, literacy, numeracy, student welfare and well-being. However, they identified behaviour management, catering for diversity, communication with parents, taking leadership roles, subject specific pedagogy and second method, team-teaching, and using assessment data as challenges.

Beginning teachers perceive their capabilities, workplace conditions and experiences differently from more experienced teachers. Research demonstrates that the way beginning teachers perceive their general preparedness is affected, partly, by the level they can engage students and make an impact on their learning, rather than by their teacher education degrees. Although teachers' academic degrees have been a traditional indicator of the qualifications and quality of the teacher workforce, international research has not found that the highest degree attained by teachers is a good predictor of gains in student achievement (Rivkin & Hanushek, 2005). A rather consistent finding, however, is that teachers with better academic performance obtain better student outcomes (Eide, Goldhaber, & Brewer, 2004; Murnane & Steele, 2007).

One graduate teacher's comment provides a better understanding of how a mismatch in work conditions and graduate teachers' expectations can contribute to teacher retention (Box 9). Kirsty's (not her real name) early experiences in a challenging school, as a new teacher, were not only difficult but it was a 'culture shock' for her. She cited both the lack of preparation in understanding school realities and the lack of school support and resources in providing systemic, continued and ongoing professional learning to support her in dealing with the magnitude of the realities that new teachers face in challenging teaching circumstances. This has profound implications for induction and mentoring programs that can provide a valuable transition from university to school settings.

Box 9. *'A bit of a shock'*

Kirsty is on a full-time, permanent contract at a school in South Australia. Kirsty describes the community as having high unemployment and low income. The school has 1400 students from 'birth to Year 12'. She has been there a year and teaches Year 10, 11 and 12 mathematics. She enjoys the work, but acknowledges the challenges. She has a large number of special needs students, especially students with Asperger's Syndrome.

One of Kirsty's challenges is a lack of resources in the school. While there is a large Apple program, providing students with access to Apple computers, basic resources such as calculators for use in the mathematics classroom are lacking. Her teacher education program did not prepare her for the challenge of creating her own resources:

> *'Universities I think assume you're going to walk into a school, especially in South Australia that have got textbooks and stuff like that. So that was a bit of a shock really, to walk into a school that didn't have anything.'*

Kirsty does not have any immediate career aspirations, but would like eventually to be a mathematics coordinator and a good mentor to new teachers. Overall, she feels that her teacher education course contributed to her resilience, and this helped her to meet the challenge of lack of resources. One of the ways it did this was by helping her see learning as an active, self-directed, ongoing process. She improved her research skills in the course and is now confident about using these where she needs to in her teaching, such as finding appropriate resources. A second way the course contributed to her resilience is that it suggested the need to build collegial networks and helped her to do this, though she feels that there could have been even greater emphasis and facilitation of network building in her teacher education program.

Practicums were especially useful and particularly for developing reflective practice and for cultivating utilised management strategies. She does not remember either of these things being directly addressed in the non-practicum parts of the teacher education program. She feels more practicums would be useful. A unit on linguistic diversity and second language teaching was also of practical value. She has consciously utilised some of the tools (e.g., the use of an interpreter) and strategies (e.g., allowing students to discuss things in their own language as well as in English) that she gained from this unit.

Kirsty also found concepts from educational psychology valuable, such as the zone of proximal development. These made her think about how to set up her classroom, and how to keep students engaged. However she does not feel that these links between theories and practice were made well by the program, partly because of the delay between this learning and classroom practice, and the lack of opportunity to trial and reflect on them.

Kirsty feels that while she managed to develop a good knowledge of mathematics, she was not taught how to teach the subject. The teacher education program gave a small amount of attention to the mathematics curriculum and none to how to apply the curriculum in practice.

Another weakness perceived by Kirsty is a lack of cohesion in the program as a whole. Some units were repetitive or re-hashed content already covered. Concepts such as Social Justice and Special Needs were covered frequently between units without reference to each other.

Graduate teacher from South Australia, full-time permanent

4.3 Content and relevance of teacher education programs for subsequent classroom teaching

This section focuses on the content and relevance of teacher education programs for subsequent classroom teaching. First, graduates' overall satisfaction with their teacher education programs is discussed. Then,

perceptions of graduate teachers' level of preparedness and effectiveness in the Australian Professional Standards for Teachers are tracked at three time points from the time of graduation to early in the second year: Round 1 (March 2013), Round 2 (October 2012), and Round 3 (March 2013). The analyses are augmented and exemplified with data from the follow-up interviews with selected graduate teachers.

Box 10 lists the main findings for Section 4.3

Box 10. Main Findings: Content and relevance of teacher education programs for subsequent classroom teaching

- For each survey round, approximately three-quarters of graduate teachers who held teaching positions either agreed or strongly agreed that they would recommend their teacher education program to others (76 per cent in Round 1, 74 per cent in Round 2, and 79 per cent in Round 3). 65-67 per cent of new graduates not teaching would recommend their teacher education program to others.
- Graduate teachers who had a teaching position felt more positive about their initial teacher education than those without a teaching position. For example, in Round 3, for those with a teaching position, 79 per cent either strongly agreed or agreed that they would recommend their teacher education program to others, but for those without a teaching position, the agreement group was 65 per cent.

- The Australian Professional Standards for Teachers in which more than 75 per cent of graduate teachers felt well prepared by their teacher education programs included 'Engage in professional learning' (89 per cent agreement in Round 1), 'Know students and how they learn' (78 per cent in Round 2) and 'Plan for and implement effective teaching and learning' (76 per cent in Round 2).

- Regardless of teacher education program, graduates felt least prepared to 'Engage professionally with colleagues, parents/carers and the community' (36 per cent disagreement that their teacher education prepared them in this area) and to 'Assess, provide feedback and report on student learning' (25 per cent disagreement).

- Overall, less than half of the graduate teachers considered they were well prepared to 'Engage professionally with colleagues, parents/carers and the community'. This was corroborated by the principals who highlighted engagement with parents, families and communities as one of the key challenges for beginning teachers

(continued on the next page)

Box 10. (continued)

- By the end of their first year of teaching, females seem more likely to feel better prepared (and more effective) than males to 'Know students and how they learn', 'Plan for and implement effective teaching and learning', 'Create and maintain supportive and safe learning environments', 'Engage in professional learning' and 'Engage professionally with colleagues, parents/carers and the community'.

- Early in the second year after graduation, graduates who had completed a graduate diploma felt less prepared to 'Know students and how they learn' and 'Know the content and how to teach it', while graduates with a masters degree felt better prepared to 'Know the content and how to teach it' and 'Assess, provide feedback and report on student learning'. In the first year, graduates with a bachelor's degree reported feeling better prepared to 'Engage professionally with colleagues, parents/carers and the community'.

- In the first year after graduation, early childhood graduates felt better prepared to 'Create and maintain supportive and safe learning environments', 'Assess, provide feedback and report on student learning', 'Engage in professional learning' and 'Engage professionally with colleagues, parents/carers and the community'. Secondary graduates felt least well prepared in this last area and more effective in relation to the standard 'Know the content and how to teach it' but less effective to 'Create and maintain supportive and safe learning environments' and 'Engage in professional learning'. Primary graduates felt less effective in 'Assessment and the provision of feedback and reporting on student learning'.

- More than 80 per cent of graduate teachers felt effective in most standards. They rated themselves highly effective in the areas of:
  - Know students and how they learn
  - Know the content and how to teach it
  - Plan for and implement effective teaching and learning
  - Create and maintain supportive and safe learning environments

- Principals agreed with graduate teachers' perceptions of their effectiveness in relation to all the standards but principals had more positive perceptions of the effectiveness of graduates than the graduates themselves to 'Plan for and implement effective teaching and learning'.

- More graduates considered that they were more effective in teaching in relation to the Australian Professional Standards for Teachers than they had been prepared in these areas. The key areas with the largest difference between perceptions of being prepared and perceptions of being effective were 'Engage professionally with colleagues, parents/carers and the community' in Rounds 2 and 3, and 'Know the content and how to teach it' in Round 3. This disconnect reflects graduate teachers' feelings of growing efficacy in teaching over time but also highlights the importance of thinking about learning to teach as a continuum of professional learning, learning that occurs in varying degrees at different times in universities, in schools and in communities.

Graduate teachers' overall satisfaction with their teacher education program

Overall, a large proportion of graduate teachers felt positive about their teacher education programs and this was consistent in all three rounds of the Graduate Teacher Surveys. Respondents were asked to indicate their level of agreement on a five-point scale from 'strongly disagree' to 'strongly agree' to the question 'I would recommend my teacher education program to someone else wishing to qualify as a teacher'. When cross-tabulated with teaching employment, about three quarters of graduate teachers who held teaching positions either agreed or strongly agreed that they would recommend their teacher education program to others for all three rounds. Over 12 months (across 2 calendar years), there is no significant change in respondents' perception of their teacher education programs, increasing slightly to 79 per cent agreement for this group of teachers (See Table 72).

Table 72. Graduate teachers – by level of agreement with the statement 'I would recommend my teacher education program to others'

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Teaching						
Strongly Disagree	41	4.2	67	3.2	51	3.1
Disagree	92	9.5	175	8.3	126	7.6
Neither Agree nor Disagree	104	10.7	316	14.9	165	10.0
Agree	459	47.4	1003	47.4	824	49.8
Strongly Agree	273	28.2	555	26.2	490	29.6
TOTAL	969	100.0	2,116	100.0	1,656	100.0
Not teaching						
Strongly Disagree	21	6.1	22	5.9	19	5.9
Disagree	47	13.7	42	11.4	49	15.2
Neither Agree nor Disagree	45	13.2	61	16.5	45	13.9
Agree	153	44.7	155	41.9	155	48.0
Strongly Agree	76	22.2	90	24.3	55	17.0
TOTAL	342	100.0	370	100.0	323	100.0

Note: Round 1: $p<0.05$; Round 2 $p<0.05$; Round 3 $p<0.01$

Significantly, when compared with those who were not teaching, the results suggest that graduate teachers who have a teaching position feel more positive about their initial teacher education than those without a teaching position. This is evident especially in the case of the graduate teachers who had full-time permanent positions with regular and intensive classroom experiences for the previous six months. For example, in Round 3, for those with a teaching position, 79 per cent either strongly agreed or agreed that they would recommend their teacher education program to others, but for those without a teaching position, this agreement group was 65 per cent. For those with a teaching position, 11 per cent either strongly disagreed or disagreed about recommending their program to others. In comparison, for those without a teaching position, the disagreement group was 21 per cent. A chi-square statistic was calculated to examine whether there was a relationship between graduates' having or not having a teaching position and their level of satisfaction with their teacher education program. The test was found to be statistically significant ($p<.05$ in all three rounds).

This finding was also evident in analysis of the interviews and survey free text responses. First, responses showed graduate teachers' concern about the lack of jobs ('There are very few teaching jobs available and we were not made fully aware of that', 'Too many students, too few jobs') and second, interview findings showed how graduate teachers' employment status influenced their perceptions about their preparation for teaching. While those who were in permanent teaching positions were more positive about their opportunities to draw on the knowledge and skills they gained in their teacher education programs, many holding casual and relief positions felt that they were not able to apply that knowledge and those in positions. Box 11 illustrates an example of this situation.

Graduate teachers' preparedness in key teaching areas – the Australian Professional Standards for Teachers

The Round 1 Graduate Teacher Survey includes a preparation scale featuring 46 items. The areas covered in the preparation scale are based on the literature and previous research in the area of preparing teachers for teaching. This work was prepared for the SETE study, upon which the LTEWS work is based. SETE found the literature highlights ten key areas of preparedness for teaching, which are as follows:

- Collegiality
- Understanding, design and implementation of curriculum
- Demonstrating an understanding of professional ethics
- Engagement in ongoing professional learning
- Assessment
- Classroom management
- Parent and community engagement
- Catering for diverse learners
- Pedagogy
- Relationships with students

Principal components analysis (PCA) on this scale showed that the 46 items reduced to four sub-scales, or components. The first component contained 22 items from the scale, and did not have a unifying descriptor, other than 'preparation' in general. The other three components found through PCA were assessment, professional learning and classroom management. Because there was not a clear, single description that encompassed all items for the first component, the PCA for these 46 items is not useful and was not used in the data analysis. In order to make it parsimonious to do analysis with these 46 items (such as cross-tabulating demographic information on the teachers to gauge averages, variability and correlations), the Australian Professional Standards for Teachers were substituted as the 'principal components' reducing the number of items down from 46 to seven for subsequent surveys. It was possible to check the commonality of the items that were grouped under each standard by using a measure of internal consistency (Cronbach's Alpha). See Appendix 16 for more information about refinement of the preparation scale.

Thus section examines the perceptions of graduate teachers' level of preparedness and effectiveness in the seven key areas of teaching framed by the Australian Professional Standards for Teachers:

1. Know the students and how they learn
2. Know the content and how to teach it
3. Plan for and implement effective teaching and learning
4. Create and maintain supportive and safe learning environments

Box 11. ***'I still feel quite uneasy with my identity'***

Jenny has experienced considerable difficulty in obtaining teaching employment in Tasmania. She has been limited to doing casual relief work for over a year. She also works as a teacher's aide in a permanent speech pathology job. Jenny takes a very positive stance towards learning and teaching and is encouraged by the level of support given to her at the school where she has done most of her work, a small primary school in Hobart with strong community links. Experience and time in the classroom in addition to school support have helped her to develop professionally.

Jenny still feels that classroom management is a challenge, especially as a relief teacher. Not knowing the students and not knowing classroom routines, she feels she has to try to offer material that is meaningful and adaptable:

> *'I think managing classroom behaviour is a bit different for relief teachers, not … knowing the students and not necessarily knowing as well how the teacher's … classroom rules and values, and how those are implemented.'*

She nonetheless feels more confident and feels that her knowledge in primary education is growing everyday:

> *'I've got more of an understanding of what it is to be a teacher and trying to progress that for myself. Also I'm developing a much better awareness of the developmental trajectory, because I'm teaching across different classes all the time, I've got a much better idea of what it means to be a year one typical kind of student and class and what they might enjoy and engage with and do, whereas a lot of that for me previously was quite theoretical.'*

She feels that the real challenge for her is to progress her career to become a fully-fledged teacher and to develop skills as a classroom teacher in an 'ongoing way with the students'. She talks about the contrast between a full-fledged teacher identity versus a relief teacher identity:

> *'I still feel really quite uneasy though with my identity as a teacher in that I really want to have an identity as – … I want to develop skills in being a classroom teacher that works in an ongoing way with the students.'*

She feels uncertain about whether she is making a difference to student learning. She sees her success and efficacy in terms of how students relate to her and respond to her teaching.

On the whole, Jenny feels that her teacher education program has given her a good foundation in terms of curriculum planning. However, she feels uncertain as to how this translates into the situations that she experiences as a relief teacher:

> *'You don't know the students and you can't do formative assessment to guide your planning, so a lot of the things that I learnt in my pre-service training about planning for students aren't relevant to me as yet, but they'd be obviously highly relevant if I had a regular class.'*

Graduate teacher from Tasmania, Casual Relief

5. Assess, provide feedback and report on student learning
6. Engage in professional learning
7. Engage professionally with colleagues, parents/carers and the community

Three other key areas of teaching were also examined but are discussed later in Section 4.6:

1. Teaching culturally, linguistically and socio-economically diverse learners
2. Use of information and communications technologies (ICT)
3. Literacy and numeracy

The survey included questions to examine two constructs i) preparedness and ii) effectiveness, in the key areas of teaching based on a five-point Likert scale (1='strongly disagree'; 5='strongly agree').

The table below shows the results of graduates' level of agreement with their preparation in relation to the professional standards in all three rounds. The questions were only asked of those respondents who were teaching.

Table 73. Graduate teachers – by preparation in the professional standards

Preparation for:	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 1					
Know students and how they learn	1.4	4.6	21.8	57.8	14.4
Know the content and how to teach it	1.2	6.2	28.3	54.7	9.6
Plan for and implement effective teaching and learning	1.0	3.9	21.4	60.9	12.9
Create and maintain supportive and safe learning environments	1.3	9.1	27.6	50.7	11.3
Assess, provide feedback and report on student learning	1.9	5.1	21.8	58.4	12.7
Engage in professional learning	0.6	2.0	8.4	49.6	39.3
Engage professionally with colleagues, parents/carers and the community	1.1	8.2	32.5	48.7	9.5
Round 2					
Know students and how they learn	1.0	6.2	15.0	63.5	14.2
Know the content and how to teach it	2.8	14.9	20.5	48.0	13.8
Plan for and implement effective teaching and learning	1.3	8.3	14.5	60.3	15.6
Create and maintain supportive and safe learning environments	1.4	7.4	16.8	55.3	19.1
Assess, provide feedback and report on student learning	5.6	18.8	21.1	43.3	11.1
Engage in professional learning	3.0	9.8	20.2	48.4	18.6
Engage professionally with colleagues, parents/carers and the community	9.6	26.0	27.6	30.2	6.6
Round 3					

Know students and how they learn	1.3	8.6	17.4	60.6	12.0
Know the content and how to teach it	4.5	16.7	22.5	43.8	12.4
Plan for and implement effective teaching and learning	2.1	10.0	16.0	57.7	14.2
Create and maintain supportive and safe learning environments	2.0	8.5	18.1	53.7	17.7
Assess, provide feedback and report on student learning	5.4	19.5	22.6	43.4	9.1
Engage in professional learning	3.2	11.2	22.9	45.4	17.3
Engage professionally with colleagues, parents/carers and the community	9.2	26.5	29.0	28.6	6.7

Note: Round 1 results are not comparable with Rounds 2 and 3 because respondents were asked to respond to 46 statements, which were subsequently grouped under the seven Australian Professional Standards for Teachers.

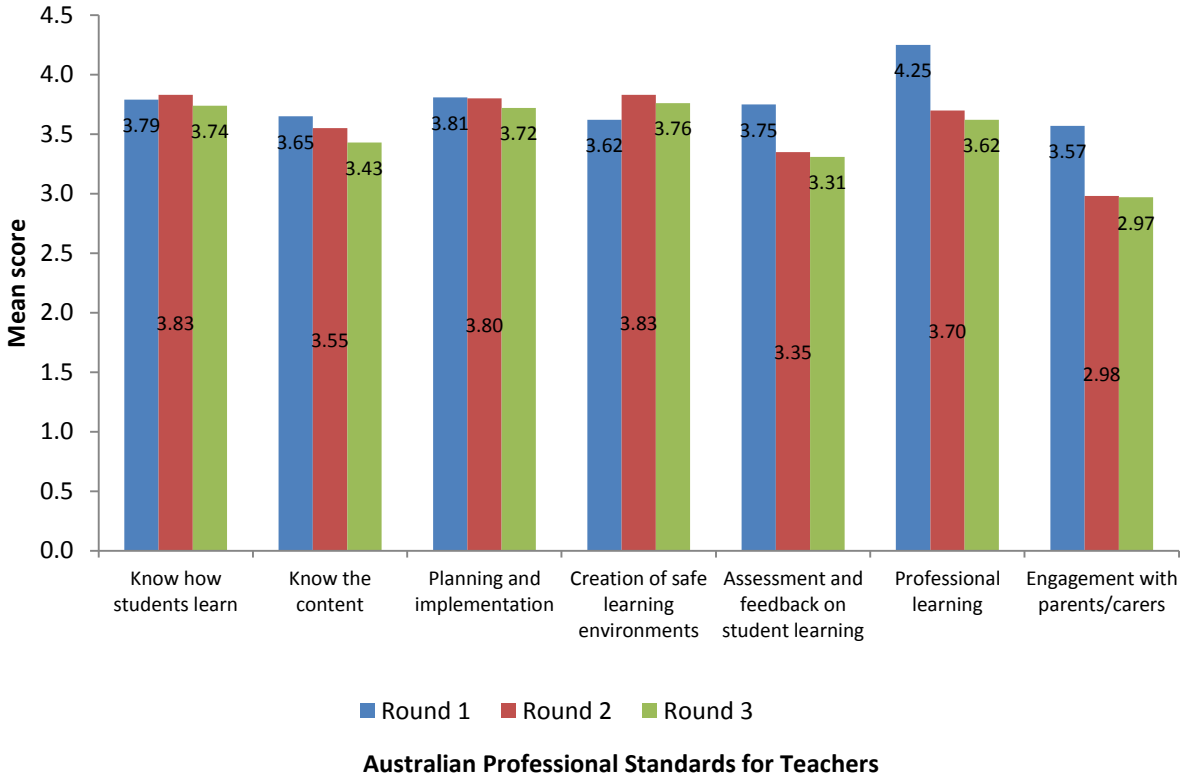
The areas in which more than 75 per cent of graduate teachers felt well prepared by their teacher education programs changed over the three survey rounds. In Round 1, 89 per cent of graduate respondents agreed their teacher education program prepared them to 'Engage in professional learning'. In Round 2, the two key areas with more than 75 per cent agreement in preparation were 'Know students and how they learn' (78 per cent) and 'Plan for and implement effective teaching and learning' (76 per cent). In Round 3 there were no key areas with more than 75 per cent agreement.

There were no areas in which more than 25 per cent of graduate teachers disagreed with being well prepared by their teacher education programs in Round 1. In Round 2 the key area in which more than 25 per cent disagreed that their teacher education program prepared them was ' Engage professionally with colleagues, parents/carers and the community' (36 per cent). This was also a key area of disagreement in preparation in Round 3 (36 per cent). The area of ' Assess, provide feedback and report on student learning' received a higher proportion of disagreement from graduate in Round 3 than in other rounds (25 per cent).

Graduate teachers' perception of their lack of preparation in the area of professional engagement with parents, carers and the community ties in with previous research on areas of need in teacher professional learning (Doecke et al, 2008). This DEEWR *National Mapping of Teacher Professional Learning* report found that 83 per cent of teachers felt the area where they needed the most professional development was engaging with parents and the community.

The following figure shows the mean score for the items measuring preparation in the seven professional standards.

Figure 27. Graduate teachers – by the mean of their preparation in the professional standards



Note: Round 1 n=935; Round 2 n=2,099; Round 3 n=1,727

The professional standards that showed the highest mean score for preparation were:

Round 1

- Professional learning
- Plan for and implement effective teaching and learning

Rounds 2 and 3

- Know students and how they learn
- Creation and maintenance of supportive and safe learning environments

The professional standards that showed the lowest mean score for preparation were:

Round 1

- Engage professionally with colleagues, parents/carers and the community
- Creation and maintenance of supportive and safe learning environments

Rounds 2 and 3

- Engage professionally with colleagues, parents/carers and the community
- Assess, provide feedback and report on student learning

Graduate teachers' preparedness in the professional standards – by gender

An independent-samples t-test was conducted to compare the means in the seven professional standards by gender. The results are shown in Table 74.

Table 74. Comparison of mean for preparation in the professional standards – by gender

	Males		Females		Significance
Preparation for:	**Mean**	**SD**	**Mean**	**SD**	***p***
Round 2					
Know students and how they learn	3.74	0.769	3.86	0.782	0.003
Know the content and how to teach it	3.42	1.032	3.59	0.982	0.001
Plan for and implement effective teaching and learning	3.71	0.884	3.83	0.830	0.007
Create and maintain supportive and safe learning environments	3.71	0.927	3.87	0.849	0.001
Assess, provide feedback and report on student learning	3.31	1.099	3.37	1.074	0.322
Engage in professional learning	3.59	1.023	3.73	0.964	0.008
Engage professionally with colleagues, parents/carers and the community	2.78	1.101	3.04	1.094	0.000
Round 3					
Know students and how they learn	3.63	0.845	3.77	0.820	0.004
Know the content and how to teach it	3.35	1.122	3.45	1.026	0.093
Plan for and implement effective teaching and learning	3.63	0.902	3.75	0.902	0.024
Create and maintain supportive and safe learning environments	3.62	0.962	3.81	0.889	0.001
Assess, provide feedback and report on student learning	3.28	1.047	3.32	1.056	0.448
Engage in professional learning	3.51	1.068	3.66	0.978	0.016
Engage professionally with colleagues, parents/carers and the community	2.81	1.095	3.02	1.084	0.001

Note: Round 2: males n= 464; females n= 1,637; Round 3: males n= 381; females n= 1,346 $p<0.05$

There was a significant difference in the scores for males and females in six of the key areas in Round 2:

- 'Know students and how they learn'
- 'Know the content and how to teach it'
- 'Plan for and implement effective teaching and learning'
- 'Create and maintain supportive and safe learning environments'
- 'Engage in professional learning'
- 'Engage professionally with colleagues, parents/carers and the community'

These results suggest that gender has an effect on feeling prepared in the professional standards areas. Round 3 showed significant differences in the scores for males and females for all the six standards listed above except for 'Know the content and how to teach it'. By the end of their first year of teaching, females seemed more likely to feel better prepared in five of the seven professional standards than males.

Graduate teachers' preparedness in the professional standards – by program type

To further investigate the content and relevance of the graduate teachers' preparation, a one-way between subjects ANOVA was conducted to compare the effect of program type on the professional standards for Rounds 2 and 3. The results are shown in Table 75 below.

Table 75. Comparison of mean for preparation in the professional standards, by program type

	Masters		Bachelor		Grad. Dip.		Significance
Preparation for:	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	***p***
Round 2							
Know students and how they learn	3.81	0.824	3.91	0.753	3.75	0.79	0.000
Know the content and how to teach it	3.67	0.936	3.59	0.983	3.45	1.024	0.002
Plan for and implement effective teaching and learning	3.85	0.864	3.8	0.846	3.81	0.834	0.723
Create and maintain supportive and safe learning environments	3.85	0.894	3.88	0.854	3.77	0.87	0.042
Assess, provide feedback and report on student learning	3.51	1.062	3.31	1.105	3.34	1.054	0.026
Engage in professional learning	3.67	1.02	3.73	0.987	3.68	0.96	0.539
Engage professionally with colleagues, parents/carers and the community	2.92	1.14	3.04	1.107	2.91	1.079	0.026
Round 3							
Know students and how they learn	3.83	0.828	3.78	0.794	3.66	0.856	0.009
Know the content and how to teach it	3.63	1.044	3.49	0.992	3.26	1.095	0.000
Plan for and implement effective teaching and learning	3.82	0.946	3.74	0.849	3.67	0.938	0.085
Create and maintain supportive and safe learning environments	3.8	0.987	3.79	0.873	3.72	0.933	0.362
Assess, provide feedback and report on student learning	3.48	1.071	3.28	1.058	3.31	1.047	0.030
Engage in professional learning	3.71	1.085	3.63	1	3.57	0.972	0.186
Engage professionally with colleagues, parents/carers and the community	3.04	1.172	3.02	1.09	2.88	1.065	0.041

Note: Round 2: Masters n=270, Bachelor n=1,004, Grad. Dip. n=726; Round 3: Masters n=244, Bachelor n=775, Grad. Dip. n=547 $p<0.05$

There was a significant effect for program type on graduate teacher preparedness at the $p<0.05$ level in four of the professional standards in both Rounds 2 and 3. These were:

- 'Know students and how they learn'
- 'Know the content and how to teach it'
- 'Assess, provide feedback and report on student learning'
- 'Engage professionally with colleagues, parents/carers and the community'

A *post hoc* test was conducted on these standards in Rounds 2 and 3, and the significant differences are shown in Table 76.

Table 76. Comparison between groups of mean for preparation in the professional standards – by program type

Comparisons between program areas	Significance *p*	
	Round 2	Round 3
Know students and how they learn		
Masters and Bachelor	0.205	0.727
Masters and Graduate/Postgraduate Diploma	0.524	0.026
Bachelor and Graduate/Postgraduate Diploma	0.000	0.027
Know the content and how to teach it		
Masters and Bachelor	0.487	0.160
Masters and Graduate/Postgraduate Diploma	0.006	0.000
Bachelor and Graduate/Postgrad Diploma	0.011	0.000
Assess, provide feedback and report on student learning		
Masters and Bachelor	0.020	0.025
Masters and Graduate/Postgraduate Diploma	0.071	0.073
Bachelor and Graduate/Postgraduate Diploma	0.838	0.913
Engage professionally with colleagues, parents/carers and the community		
Masters and Bachelor	0.236	0.946
Masters and Graduate/Postgraduate Diploma	0.981	0.122
Bachelor and Graduate/Postgrad Diploma	0.029	0.058

In summary, *post hoc* comparisons using the Tukey HSD test indicated that the mean score for:

- 'Know students and how they learn' was significantly different between the bachelor and graduate diploma programs in both rounds;
- 'Know the content and how to teach it' was significantly different between the masters and the graduate diploma programs and the bachelor and graduate diploma programs in both rounds;
- 'Assess, provide feedback and report on student learning' was significantly different between the masters and bachelor programs in both rounds;
- 'Engage professionally with colleagues, parents/carers and the community' was significantly different between the bachelor and graduate diploma programs in Round 2.

For Round 2, taken together, these results suggest that graduates who completed a graduate diploma felt less prepared than those from the other two program types in three areas:

- Know students and how they learn
- Know the content and how to teach it
- Create and maintain supportive and safe learning environments

Those graduates who completed a masters qualification felt better prepared than those from the other two program types in the area of Assess, provide feedback and report on student learning'. Those graduates who completed a bachelor's degree felt better prepared than those from the other two program types in the area of 'Engage professionally with colleagues, parents/carers and the community'.

Round 3 results show that graduates who completed a graduate or postgraduate diploma feel less prepared than those with a bachelor's degree in 'Know students and how they learn' and 'Know the content and how to teach it'. It also shows that graduates who completed a masters teacher education program felt better prepared than those from the other two program types in 'Know the content and how to teach it' and 'Assess, provide feedback and report on student learning'.

Graduate teachers' preparedness in the professional standards – by program area

A one-way between subjects ANOVA was conducted to compare the effect of program area on preparation in the seven professional standards. The results are shown in Table 77.

Table 77. Comparison of mean for preparation in the professional standards – by program area

	Early Childhood		EC/Prim		Primary		Prim/Sec		Secondary		Significance
Preparation in NPST	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	***p***
Round 2											
Know students	4.09	0.653	4.01	0.622	3.87	0.785	3.88	0.725	3.76	0.802	0.000
Know the content	3.77	0.902	3.54	0.929	3.57	0.968	3.48	1.038	3.53	1.023	0.250
Plan and implement	4.06	0.713	3.73	0.91	3.78	0.859	3.88	0.753	3.81	0.849	0.033
Create and maintain	4.13	0.656	3.91	0.844	3.84	0.894	3.88	0.858	3.78	0.856	0.009
Assess, report	3.65	0.929	3.38	1.032	3.27	1.098	3.25	1.118	3.41	1.071	0.008
Professional learning	4.14	0.683	3.67	0.962	3.71	1.000	3.76	0.925	3.65	0.996	0.001
Engage with parents	3.78	0.805	3.26	1.002	3.03	1.124	3.05	1.101	2.81	1.078	0.000
Round 3											
Know students	3.97	0.758	3.83	0.658	3.79	0.798	3.77	0.767	3.66	0.869	0.008
Know the content	3.42	0.944	3.35	0.967	3.47	0.963	3.36	1.086	3.42	1.122	0.497
Plan and implement	3.75	0.876	3.74	0.727	3.72	0.899	3.72	0.925	3.72	0.927	0.990
Create and maintain	3.98	0.792	3.83	0.785	3.79	0.894	3.82	0.817	3.70	0.958	0.163
Assess, report	3.38	0.846	3.29	0.946	3.29	1.040	3.34	1.119	3.32	1.092	0.655
Professional learning	4.00	0.689	3.56	0.813	3.7	0.954	3.60	1.014	3.55	1.067	0.004
Engage with parents	3.58	0.720	3.24	1.005	3.04	1.082	3.07	1.118	2.78	1.111	0.000

Note: Round 2: Early Childhood n=77, EC/Prim n=112, Primary n=756, Prim/Sec n=197, Secondary n=866; Round 3: Early Childhood n=60, EC/Prim n=103, Primary n=608, Prim/Sec n=151, Secondary n=677 $p<0.05$

There was a significant effect for program area on graduate teacher preparedness at the $p<0.05$ level in six of the seven professional standards in Round 2:

- Know students and how they learn
- Plan for and implement effective teaching and learning
- Create and maintain supportive and safe learning environments
- Assess, provide feedback and report on student learning
- Engage in professional learning
- Engage professionally with colleagues, parents/carers and the community

In Round 3, significant effects for program area could be seen in only three key professional standards:

- Know students and how they learn
- Engage in professional learning
- Engage professionally with colleagues, parents/carers and the community

A *post hoc* test was conducted on all these areas, and the significant differences are shown in Table 78.

Table 78. **Comparison between groups of mean for preparation in the professional standards – by program area**

Comparisons between program areas	Significance *p*	
	Round 2	Round 3
Know students and how they learn		
EC and EC/Primary	0.953	0.921
EC and Primary	0.109	0.610
EC and Primary/Secondary	0.245	0.642
EC and Secondary	0.003	0.058
EC/Primary and Primary	0.363	0.996
EC/Primary and Prim/Secondary	0.610	0.993
EC/Primary and Secondary	0.013	0.315
Primary and Primary/Secondary	1.000	1.000
Primary and Secondary	0.053	0.041
Primary/Sec and Secondary	0.318	0.603
Plan for and implement effective teaching and learning		
EC and EC/Primary	0.059	1.000
EC and Primary	0.034	1.000
EC and Primary/Secondary	0.466	1.000
EC and Secondary	0.083	1.000
EC/Primary and Primary	0.985	1.000
EC/Primary and Primary/Secondary	0.586	1.000
EC/Primary and Secondary	0.886	1.000
Primary and Primary/Secondary	0.557	1.000
Primary and Secondary	0.926	1.000
Primary/Secondary and Secondary	0.848	1.000
Create and maintain supportive and safe learning environments		
EC and EC/Primary	0.425	0.893
EC and Primary	0.040	0.605
EC and Primary/Secondary	0.210	0.851
EC and Secondary	0.007	0.203
EC/Primary and Primary	0.928	1.000

EC/Primary and Primary/Secondary	0.999	0.809
EC/Primary and Secondary	0.579	0.999
Primary and Primary/Secondary	0.971	0.999
Primary and Secondary	0.674	0.571
Primary/Secondary and Secondary	0.581	0.711
Assess, provide feedback and report on student learning		
EC and EC/Primary	0.423	0.995
EC and Primary	0.030	0.985
EC and Primary/Sec	0.046	1.000
EC and Secondary	0.316	0.998
EC/Primary and Primary	0.887	1.000
EC/Primary and Primary/Sec	0.860	0.999
EC/Primary and Secondary	0.999	1.000
Primary and Primary/Sec	0.998	0.995
Primary and Secondary	0.103	0.992
Primary/Sec and Secondary	0.352	1.000
Engage in professional learning		
EC and EC/Primary	0.010	0.076
EC and Primary	0.002	0.224
EC and Primary/Secondary	0.031	0.095
EC and Secondary	0.000	0.009
EC/Primary and Primary	0.997	0.796
EC/Primary and Primary/Secondary	0.933	1.000
EC/Primary and Secondary	0.999	1.000
Primary and Primary/Secondary	0.952	0.896
Primary and Secondary	0.766	0.064
Primary/Secondary and Secondary	0.582	0.988
Engage professionally with colleagues, parents/carers and the community		
EC and EC/Primary	0.011	0.381
EC and Primary	0.000	0.003
EC and Primary/Secondary	0.000	0.022
EC and Secondary	0.000	0.000
EC/Primary and Primary	0.208	0.473
EC/Primary and Prim/Secondary	0.484	0.799
EC/Primary and Secondary	0.000	0.001
Primary and Primary/Sec	0.998	1.000
Primary and Secondary	0.001	0.000
Primary/Secondary and Secondary	0.046	0.038

In summary, *post hoc* comparisons using the Tukey HSD test indicated that the mean score for:

- 'Know students and how they learn' was significantly different between:
    - Early childhood and secondary graduates in Round 2
    - Primary and secondary graduates in Round 3

  suggesting that secondary graduates felt less well prepared in this area.

- 'Plan for and implement effective teaching and learning' it was significantly different between:

  - Early childhood and primary in Round 2

- 'Create and maintain supportive and safe learning environments' was significantly different between:
  - Early childhood and primary graduates in Round 2
  - Early childhood and secondary graduates in Round 2

  suggesting that early childhood graduates felt better prepared in this area in their first year of teaching.

- 'Assess, provide feedback and report on student learning' was significantly different between:
  - Early childhood and primary graduates in Round 2
  - Early childhood and primary/secondary graduates in Round 2

  suggesting that early childhood graduates felt better prepared in this area in their first year of teaching.

- 'Engage in professional learning' was significantly different between:
  - Early childhood and all other four areas in Round 2
  - Early childhood and secondary graduates in Round 3

  suggesting that early childhood graduates felt better prepared in this area in their first year but that by the second year of teaching, most differences in views on program preparation for teaching between graduate areas had diminished.

- 'Engage professionally with colleagues, parents/carers and the community' was significantly different between:
  - Early childhood and all other four areas in Round 2
  - Early childhood and primary, primary/secondary and secondary in Round 3
  - Secondary and carly childhood/primary, primary, and primary/secondary and in Round 3

  suggesting that early childhood graduates felt better prepared than others, and secondary graduates felt least well prepared in this area.

Graduate teachers' effectiveness in key teaching areas – the Australian Professional Standards for Teachers

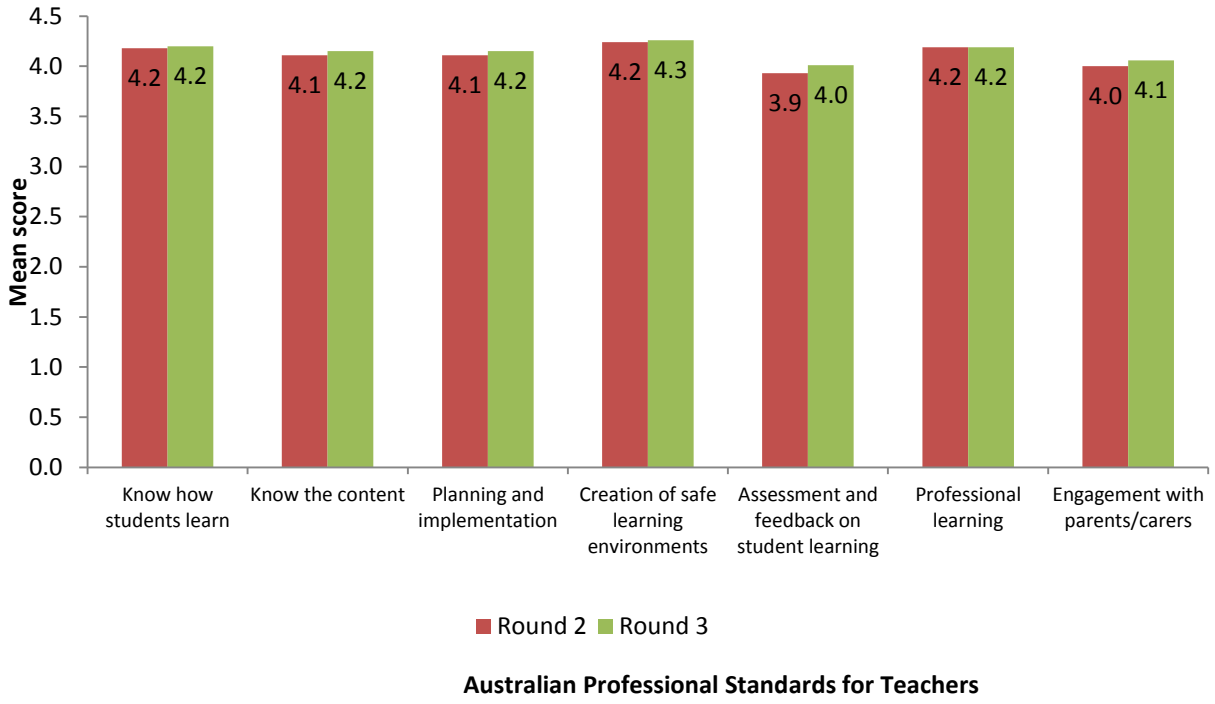
This section examines the graduate teachers' perceptions of their effectiveness in key areas of teaching. In Rounds 2 and 3, respondents were asked to indicate on a five-point Likert scale their level of agreement on their effectiveness on the seven statements on the Professional Standards. Table 79 shows the results. These questions were only asked of those respondents who were currently teaching.

Table 79. Graduate teachers – by effectiveness in the professional standards

Effective in:	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 2					
Know students and how they learn	0.0	0.9	7.3	65.0	26.8
Know the content and how to teach it	0.1	1.8	10.2	63.1	24.8
Plan for and implement effective teaching and learning	0.1	1.5	8.9	66.2	23.2
Create and maintain supportive and safe learning environments	0.1	0.9	7.6	57.5	33.9
Assess, provide feedback and report on student learning	0.3	4.5	16.5	59.4	19.4
Engage in professional learning	0.3	1.8	10.9	52.5	34.6
Engage professionally with colleagues, parents/carers and the community	0.3	3.1	16.0	57.4	23.1
Round 3					
Know students and how they learn	0.1	0.6	6.4	65.1	27.9
Know the content and how to teach it	0.1	1.4	8.3	63.9	26.3
Plan for and implement effective teaching and learning	0.1	1.3	7.4	66.3	25.0
Create and maintain supportive and safe learning environments	0.1	0.8	6.8	57.8	34.6
Assess, provide feedback and report on student learning	0.3	2.8	13.3	62.5	21.0
Engage in professional learning	0.2	2.2	9.8	54.1	33.7
Engage professionally with colleagues, parents/carers and the community	0.3	2.8	14.7	55.1	27.0

The following Figure shows the mean score for the items measuring effectiveness in the seven key areas.

Figure 28. Graduate teachers – by the mean of their effectiveness in the professional standards



Note: Round 2 n=2,099; Round 3 n=1,727

Generally, graduate teachers perceived themselves as effective in both rounds, with more than 80 per cent of graduate teachers agreeing they were effective in most teaching areas. The graduate teachers rated themselves as highly effective (>90 per cent) in the areas of:

- 'Know students and how they learn' in both rounds
- 'Know the content and how to teach' it in Round 3
- 'Plan for and implement effective teaching and learning' in Round 3
- 'Create and maintain supportive and safe learning environments' in both rounds

This is with the exception for 'Assess, provide feedback and report on student learning' in Round 2 (with 78.8 per cent). The area with the highest proportion who disagreed they were effective was 'Assess, provide feedback and report on student learning' but this was still only 4.8 per cent in Round 2 and 3.1 per cent in Round 3 compared to the other areas.

Overall, agreement on effectiveness remained fairly constant from Round 2 to Round 3. The area that showed the highest mean score for effectiveness was 'Create and maintain supportive and safe learning environments' in Round 3. The areas that showed the lowest mean score for effectiveness was 'Assess, provide feedback and report on student learning' in Round 2.

Interestingly, the survey results revealed that graduate teachers felt more effective in the seven areas of teaching than in feeling they were prepared. The key areas with the largest difference between perceptions of being prepared and perceptions of being effective were 'Engage professionally with colleagues, parents/carers and the community' in Rounds 2 and 3, and 'Know the content and how to teach it' in Round 3.

This disconnect reflects graduate teachers' feelings of growing efficacy in teaching over time but also highlights the importance of thinking about learning to teach as a continuum of professional learning, learning that occurs in varying degrees at different times in universities, in schools and in communities. In the interviews, graduate teachers spoke about the importance of the professional learning setting of the school and also the need for teacher education to make explicit linkages between theory and practice.

Graduate teachers' effectiveness - by gender

An independent-samples t-test was conducted to compare the means for effectiveness in the seven key areas of teaching, by gender. The results are shown in the Table 80.

Table 80. Comparison of mean for effectiveness in the professional standards – by gender

	Males		Females		Significance
Effective in:	**Mean**	**SD**	**Mean**	**SD**	***p***
Round 2					
Know students and how they learn	4.09	0.568	4.20	0.595	0.001
Know the content and how to teach it	4.07	0.681	4.12	0.637	0.126
Plan for and implement effective teaching and learning	4.04	0.651	4.13	0.608	0.005
Create and maintain supportive and safe learning environments	4.12	0.659	4.28	0.618	0.000
Assess, provide feedback and report on student learning	3.89	0.748	3.94	0.748	0.190
Engage in professional learning	4.10	0.717	4.22	0.719	0.001
Engage professionally with colleagues, parents/carers and the community	3.81	0.747	4.05	0.725	0.000
Round 3					
Know students and how they learn	4.12	0.621	4.22	0.560	0.002
Know the content and how to teach it	4.14	0.670	4.15	0.614	0.834
Plan for and implement effective teaching and learning	4.05	0.651	4.18	0.580	0.000
Create and maintain supportive and safe learning environments	4.13	0.693	4.30	0.595	0.000
Assess, provide feedback and report on student learning	3.97	0.712	4.02	0.693	0.152
Engage in professional learning	4.09	0.775	4.22	0.688	0.001
Engage professionally with colleagues, parents/carers and the community	3.90	0.803	4.10	0.726	0.000

Note: Round 2: males n= 465; females n= 1,634; Round 3: males n= 381; females n= 1,346 $p<0.05$

There was a significant difference in the scores for males and females in five of the seven key areas in Rounds 2 and 3:

- 'Know students and how they learn'
- 'Plan for and implement effective teaching and learning'
- 'Create and maintain supportive and safe learning environments'
- 'Engage in professional learning'
- 'Engage professionally with colleagues, parents/carers and the community'

Graduate teachers' effectiveness – by program type

A one-way between subjects ANOVA was conducted to compare the effect of program area on effectiveness in the seven key areas of teaching. The results are shown in the Table 81.

Table 81. Comparison of mean for effectiveness in the professional standards – by program type

	Masters		Bachelor		Grad. Dip.		Significance
Effective in:	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	***p***
Round 2							
Know students and how they learn	4.23	0.569	4.23	0.581	4.10	0.601	0.000
Know the content and how to teach it	4.18	0.640	4.13	0.614	4.05	0.682	0.004
Plan for and implement effective teaching and learning	4.13	0.586	4.14	0.613	4.05	0.634	0.008
Create and maintain supportive and safe learning environments	4.30	0.588	4.30	0.614	4.15	0.662	0.000
Assess, provide feedback and report on student learning	3.97	0.773	3.96	0.740	3.87	0.750	0.047
Engage in professional learning	4.14	0.787	4.25	0.702	4.14	0.710	0.003
Engage professionally with colleagues, parents/carers and the community	3.99	0.706	4.07	0.698	3.91	0.782	0.000
Round 3							
Know students and how they learn	4.24	0.569	4.23	0.591	4.14	0.561	0.005
Know the content and how to teach it	4.20	0.610	4.14	0.600	4.13	0.680	0.378
Plan for and implement effective teaching and learning	4.16	0.644	4.18	0.583	4.11	0.607	0.123
Create and maintain supportive and safe learning environments	4.30	0.593	4.28	0.634	4.21	0.618	0.062
Assess, provide feedback and report on student learning	4.02	0.796	4.04	0.674	3.98	0.686	0.263
Engage in professional learning	4.20	0.731	4.20	0.726	4.17	0.690	0.738
Engage professionally with colleagues, parents/carers and the community	4.05	0.771	4.08	0.731	4.01	0.782	0.262

Note: Round 2: Masters n=270, Bachelor n=1,004, Grad. Dip. n=726; Round 3: Masters n=244, Bachelor n=775, Grad. Dip. n=547 $p<0.05$

There was a significant effect for program area on graduate teacher effectiveness at the $p<0.05$ level in all seven key areas in Round 2. Interestingly, by Round 3 only the area of 'Know students and how they learn' showed significant difference across the teacher program areas. A *post hoc* test was conducted on all seven areas, and the significant differences are shown in Table 82.

Table 82. Comparison between groups of mean for effectiveness in key areas of teaching – by program type

Comparisons between program types	Significance *p*	
	Round 2	Round 3
Know students and how they learn		
Masters and Bachelor	1.000	0.979
Masters and Grad/Postgrad Diploma	0.006	0.044
Bachelor and Grad/Postgrad Diploma	0.000	0.007
Know the content and how to teach it		
Masters and Bachelor	0.479	0.430
Masters and Grad/Postgrad Diploma	0.010	0.373
Bachelor and Grad/Postgrad Diploma	0.024	0.974
Plan for and implement effective teaching and learning		
Masters and Bachelor	0.971	0.910
Masters and Grad/Postgrad Diploma	0.153	0.525
Bachelor and Grad/Postgrad Diploma	0.007	0.104
Create and maintain supportive and safe learning environments		
Masters and Bachelor	0.986	0.880
Masters and Grad/Postgrad Diploma	0.002	0.127
Bachelor and Grad/Postgrad Diploma	0.000	0.102
Assess, provide feedback and report on student learning		
Masters and Bachelor	0.981	0.890
Masters and Grad/Postgrad Diploma	0.187	0.736
Bachelor and Grad/Postgrad Diploma	0.056	0.231
Engage in professional learning		
Masters and Bachelor	0.071	0.995
Masters and Grad/Postgrad Diploma	1.000	0.819
Bachelor and Grad/Postgrad Diploma	0.005	0.760
Engage professionally with colleagues, parents/carers and the community		
Masters and Bachelor	0.234	0.880
Masters and Grad/Postgrad Diploma	0.323	0.747
Bachelor and Grad/Postgrad Diploma	0.000	0.230

In summary, *post hoc* comparisons using the Tukey HSD test indicated that the mean score for:

- 'Know students and how they learn' was significantly different between the graduate/postgraduate programs and the bachelor and masters programs in both rounds;
- 'Know the content and how to teach' was significantly different between the graduate/postgraduate programs and the bachelor and masters programs in Round 2;
- 'Assess, provide feedback and report on student learning' did not show significant differences between program types
- 'Engage in professional learning' also did not show significant differences between program types

- 'Engage professionally with colleagues, parents/carers and the community' was significantly different between the graduate/postgraduate programs and the bachelor programs in Round 2.

Taken together, these results suggest that in the first year of teaching graduates who complete a Graduate or Postgraduate Diploma feel less prepared than those from the other two courses in three areas:

- Know students and how they learn
- Know the content and how to teach it
- Literacy and numeracy

Those graduates who complete Masters feel better prepared than those from the other two courses in the area of 'Assess, provide feedback and report on student learning'.

Graduate teachers' effectiveness - by program area

A one-way between subjects ANOVA was conducted to compare the effect of program area on effectiveness in the seven key areas of teaching. The results are shown in the Table 83.

Table 83. Comparison of mean for effectiveness in the professional standards – by program area

	Early Childhood		Early Childhood /Primary		Primary		Primary/ Secondary		Secondary		Significance
Effective in NPST	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	*p*
Round 2											
Know students	4.27	0.504	4.28	0.488	4.19	0.613	4.21	0.627	4.14	0.583	0.064
Know the content	4.25	0.517	4.04	0.614	4.06	0.658	4.10	0.636	4.14	0.653	0.023
Plan and implement	4.25	0.491	4.15	0.557	4.10	0.633	4.13	0.646	4.09	0.619	0.224
Create and maintain	4.39	0.517	4.40	0.607	4.27	0.622	4.28	0.623	4.18	0.647	0.000
Assess, report	4.10	0.552	4.01	0.717	3.85	0.760	3.98	0.795	3.96	0.742	0.003
Professional learning	4.44	0.734	4.29	0.677	4.21	0.719	4.27	0.726	4.13	0.714	0.000
Engage with parents	4.35	0.556	4.22	0.596	4.04	0.724	4.08	0.728	3.88	0.751	0.000
Round 3											
Know students	4.28	0.585	4.31	0.524	4.20	0.586	4.28	0.626	4.15	0.554	0.000
Know the content	4.15	0.732	4.09	0.544	4.10	0.608	4.11	0.602	4.20	0.649	0.006
Plan and implement	4.17	0.587	4.17	0.494	4.14	0.633	4.19	0.608	4.13	0.578	0.115
Create and maintain	4.33	0.572	4.32	0.614	4.30	0.630	4.30	0.620	4.19	0.616	0.002
Assess, report	4.12	0.691	3.99	0.693	3.98	0.702	4.07	0.763	4.01	0.681	0.162
Professional learning	4.33	0.681	4.19	0.715	4.20	0.692	4.24	0.718	4.16	0.727	0.107
Engage with parents	4.28	0.555	4.25	0.696	4.10	0.737	4.18	0.713	3.92	0.784	0.000

Note: Round 2: Early Childhood n=77, EC/Prim n=112, Primary n=756, Prim/Sec n=197, Secondary n=866; Round 3: Early Childhood n=60, EC/Prim n=103, Primary n=608, Prim/Sec n=151, Secondary n=677 $p<0.05$

There was a significant effect for program area on graduate teacher preparedness at the $p<0.05$ level in five of the seven key areas in Round 2. These were:

- 'Know the content and how to teach it'
- 'Create and maintain supportive and safe learning environments'
- 'Assess, provide feedback and report on student learning'
- 'Engage in professional learning'
- 'Engage professionally with colleagues, parents/carers and the community'

In Round 3, there was a significant effect for program type in the following four areas:

- 'Know students and how they learn'
- 'Know the content and how to teach it'
- 'Create and maintain supportive and safe learning environments'
- 'Engage professionally with colleagues, parents/carers and the community'

A *post hoc* test was conducted on all key areas, and the significant differences are shown in Table 84.

Table 84. Comparison between groups of mean for effectiveness in the professional standards – by program area

Comparisons between program areas	Significance *p*	
	Round 2	Round 3
Know students and how they learn		
EC and EC/Primary	1.000	1.000
EC and Primary	0.730	0.910
EC and Prim/Secondary	0.945	1.000
EC and Secondary	0.350	0.492
EC/Prim and Primary	0.543	0.498
EC/Prim and Primary/Secondary	0.894	0.999
EC/Prim and Secondary	0.162	0.077
Primary and Prim/Secondary	0.976	0.629
Primary and Secondary	0.611	0.493
Prim/Sec and Secondary	0.563	0.084
Know the content and how to teach it		
EC and EC/Prim	0.178	0.990
EC and Primary	0.124	0.988
EC and Prim/Secondary	0.416	0.997
EC and Secondary	0.671	0.994
EC/Primary and Primary	0.993	1.000
EC/Primary and Primary/Secondary	0.932	1.000
EC/Primary and Secondary	0.451	0.568
Primary and Primary/Secondary	0.969	1.000
Primary and Secondary	0.088	0.046
Primary/Sec and Secondary	0.882	0.596
Plan for and implement effective teaching and learning		
EC and EC/Primary	0.839	1.000

EC and Primary	0.262	1.000
EC and Primary/Secondary	0.602	1.000
EC and Secondary	0.196	0.998
EC/Primary and Primary	0.912	0.997
EC/Primary and Primary/Secondary	0.997	1.000
EC/Primary and Secondary	0.842	0.986
Primary and Primary/Secondary	0.977	0.953
Primary and Secondary	0.997	0.999
Primary/Secondary and Secondary	0.930	0.882
Create and maintain supportive and safe learning environments		
EC and EC/Primary	1.000	1.000
EC and Primary	0.525	0.998
EC and Primary/Secondary	0.724	0.999
EC and Secondary	0.041	0.524
EC/Primary and Primary	0.251	0.999
EC/Primary and Prim/Secondary	0.510	1.000
EC/Primary and Secondary	0.004	0.352
Primary and Primary/Secondary	0.999	1.000
Primary and Secondary	0.026	0.028
Primary/Sec and Secondary	0.221	0.385
Assess, provide feedback and report on student learning		
EC and EC/Primary	0.912	0.876
EC and Primary	0.037	0.711
EC and Primary/Secondary	0.729	0.997
EC and Secondary	0.473	0.888
EC/Primary and Primary	0.222	1.000
EC/Primary and Primary/Secondary	0.997	0.958
EC/Primary and Secondary	0.962	0.999
Primary and Primary/Secondary	0.194	0.769
Primary and Secondary	0.031	0.960
Primary/Secondary and Secondary	0.996	0.964
Engage in professional learning		
EC and EC/Primary	0.582	0.834
EC and Primary	0.059	0.729
EC and Primary/Secondary	0.410	0.952
EC and Secondary	0.002	0.436
EC/Primary and Primary	0.854	1.000
EC/Primary and Primary/Secondary	1.000	0.997
EC/Primary and Secondary	0.172	0.996
Primary and Primary/Secondary	0.823	0.990
Primary and Secondary	0.104	0.894
Primary/Secondary and Secondary	0.067	0.796
Engage professionally with colleagues, parents/carers and the community		
EC and EC/Primary	0.758	1.000
EC and Primary	0.004	0.467
EC and Primary/Secondary	0.039	0.942
EC and Secondary	0.000	0.004
EC/Primary and Primary	0.103	0.406

EC/Primary and Prim/Secondary	0.424	0.972
EC/Primary and Secondary	0.000	0.000
Primary and Primary/Secondary	0.981	0.867
Primary and Secondary	0.000	0.000
Primary/Secondary and Secondary	0.007	0.001

In summary, *post hoc* comparisons using the Tukey HSD test indicated that the mean score for:

- 'Know students and how they learn' did not show significant differences between program areas
- 'Know the content and how to teach it' was significantly different between:
    - Primary and secondary program areas in Round 3

      This suggests that secondary graduates felt more effective in their subject disciplines than do primary graduates by their second year of teaching.

- 'Plan for and implement effective teaching and learning' did not show significant differences between program areas
- Create and maintain supportive and safe learning environments' was significantly different between:
    - the secondary program area and early childhood, early childhood/primary and primary program areas in Round 2
    - Secondary and primary program areas in Round 3

This suggests that secondary graduates felt less effective in this key area than do those from other program areas.

- 'Assess, provide feedback and report on student learning' was significantly different between:
    - Primary and early childhood program areas in Round 2
    - Primary and secondary program areas in Round 2

This suggests that in their first year of teaching, graduates from the primary area felt less effective than those from early childhood and secondary areas in this national standard measurement.

- 'Engage in professional learning 'was significantly different between:
    - Early childhood and secondary in Round 2

This suggests that those from a secondary program area felt less effective in their engagement with professional learning in their first year out than did those from an early childhood area.

- 'Engage professionally with colleagues, parents/carers and the community' was significantly different between:
    - Early childhood program areas and primary and primary/secondary program areas in Round 2
    - Secondary and all other program areas in Rounds 2 and 3

This suggests that in the first year of teaching, those from an early childhood program area felt more effective in this area than did graduates from other program areas. The results also suggest that those from a secondary program area felt less effective in the area of engaging with colleagues, parents and the community than did those from other program areas; and this continues into the second year of teaching.

Comparing graduate teachers' and principals' perceptions on effectiveness in the professional standards

The following Tables show what the graduate teachers thought of their effectiveness in terms of the Australian Professional Standards for Teachers compared to what their principals thought of the teachers' effectiveness in these seven areas. The percentages in the Tables are for teachers participating in the LTEWS Graduate Teacher Survey Rounds 2 and 3 and the principals of their schools who responded to the LTEWS Principal Survey in these rounds.

1. Effectiveness in the area of 'Know students and how they learn'

The first table shows what graduates and principals said about the graduates' effectiveness in the area of 'Know students and how they learn'.

Table 85. Comparison of teacher and principal perceptions on effectiveness in 'Know students and how they learn'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	0.0	100.0	0.0	100.0
Neither agree nor disagree	5.0	15.0	0.0	60.0	20.0	100.0
Agree	0.0	3.9	3.9	60.0	32.3	100.0
Strongly agree	1.7	3.3	8.3	46.7	40.0	100.0
TOTAL	0.8	4.7	4.7	56.8	33.1	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	0.0	0.7	0.0	0.4
Neither agree nor disagree	50.0	27.3	0.0	9.0	5.1	8.5
Agree	0.0	54.5	54.5	69.4	64.1	65.7
Strongly agree	50.0	18.2	45.5	20.9	30.8	25.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	0.0	100.0	0.0	100.0
Neither agree nor disagree	0.0	12.5	12.5	62.5	12.5	100.0
Agree	0.0	2.1	7.7	64.3	25.9	100.0
Strongly agree	2.9	1.4	4.3	53.6	37.7	100.0

TOTAL	0.9	2.3	6.8	61.1	29.0	100.0

Column percentages

Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	0.0	0.7	0.0	0.5
Neither agree nor disagree	0.0	20.0	6.7	3.7	1.6	3.6
Agree	0.0	60.0	73.3	68.1	57.8	64.7
Strongly agree	100.0	20.0	20.0	27.4	40.6	31.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: disagree n=1, neither n=20, agree n=155, strongly agree n=60; Principals strongly disagree n=2, disagree n=11, neither n=11, agree n=134, strongly agree n=78; Round 3 n=221: Teachers: disagree n=1, neither n=8, agree n=143, strongly agree n=69; Principals strongly disagree n=2, disagree n=5, neither n=15, agree n=135, strongly agree n=64

The first panel in each round presents row percentages, which are the percentages relative to teachers' level of agreement on their effectiveness in the first National Standard, 'Know students and how they learn'. Taking the row 'Agree' in Round 2, it can be seen that of the graduates who agreed they were effective in this area, 3.9 per cent of them had principals who disagreed they were effective in this area, and 60 per cent of principals agreed graduates were effective in this area. Similarly, of the teachers who strongly agree they were effective in this area, 1.7 per cent of their principals strongly disagreed they were effective, 3.3 per cent disagreed, 8.3 per cent neither agreed nor disagreed, 46.7 per cent agreed and 40 per cent strongly agreed that these graduates were effective in this key area. In both rounds of the survey, there was only one graduate teacher with a corresponding principal comment who disagreed he/she was effective in this area.

The second panel presents the figures as column percentages, that is, the percentages expressed in terms of principals' views on the effectiveness of their graduate teachers. Looking at the agreement column in Round 2 it can be seen that 69.4 per cent of principals also had their graduates agreeing they were effective. Of the principals who disagreed their graduates were effective in this are in Round 2 (n=11), no graduates disagreed, 27.3 per cent neither agreed nor disagreed, 54.5 per cent agreed and 18.2 per cent strongly agreed they were effective.

Just over 61 per cent of principals agreed teachers were effective in this area in Round 3 (as shown in the Totals row in the first Round 3 panel). Of the principals who agreed teachers were effective in this area in Round 3, 68.1 per cent had graduates who also agreed they were effective and 27.4 per cent of graduates who strongly agreed they were effective in this area.

Overall in Round 2, column totals show that 91.1 per cent of graduates agree or strongly agree they are effective in this area, and row totals show that 89.9 per cent of principals agree or strongly agree that graduates are effective in this area, showing a strong consensus between graduates and principals.

Overall in Round 3, column totals show that 95.0 per cent of graduates agree or strongly agree they are effective in this area, and row totals show that 90.1 per cent of principals agree or strongly agree that graduates are effective in this area, showing a reasonably strong consensus between graduates and principals. There was a larger percentage of principals than graduates who neither agreed nor disagreed in Round 3 (6.8 per cent compared to 3.6 per cent). This may be due to the timing of the survey for Round 3, which was at the beginning of the year, when principals would not be as familiar with their graduates' strengths as they would be at the end of the year, when Round 2 took place.

2. *Effectiveness in the area of 'Know the content and how to teach it'*

Table 86 shows what graduates and principals said about the graduates' effectiveness in the area of 'Know the content and how to teach it'.

Table 86. Comparison of teacher and principal perceptions on effectiveness in 'Know the content and how to teach it'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	0.0	100.0	0.0	100.0
Neither agree nor disagree	5.0	15.0	0.0	60.0	20.0	100.0
Agree	0.0	3.9	3.9	60.0	32.3	100.0
Strongly agree	1.7	3.3	8.3	46.7	40.0	100.0
TOTAL	0.8	4.7	4.7	56.8	33.1	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	33.3	14.3	0.0	3.3	3.5	3.8
Neither agree nor disagree	0.0	28.6	17.6	12.2	4.7	10.2
Agree	33.3	42.9	52.9	61.8	57.0	58.5
Strongly agree	33.3	14.3	29.4	22.8	34.9	27.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	25.0	75.0	0.0	100.0
Neither agree nor disagree	0.0	6.3	6.3	68.8	18.8	100.0
Agree	0.7	1.4	7.1	58.6	32.1	100.0
Strongly agree	0.0	3.3	8.2	55.7	32.8	100.0
TOTAL	0.5	2.3	7.7	58.8	30.8	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	5.9	2.3	0.0	1.8
Neither agree nor disagree	0.0	20.0	5.9	8.5	4.4	7.2
Agree	100.0	40.0	58.8	63.1	66.2	63.3

Strongly agree	0.0	40.0	29.4	26.2	29.4	27.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: disagree n=9, neither n=24, agree n=138, strongly agree n=65; Principals strongly disagree n=3, disagree n=7, neither n=17, agree n=123, strongly agree n=86; Round 3 n=221: Teachers: disagree n=4, neither n=16, agree n=140, strongly agree n=61; Principals strongly disagree n=1, disagree n=5, neither n=17, agree n=130, strongly agree n=68

The blue highlighted cells show the percentages for when graduates and their principals had the same level of agreement about graduates' effectiveness in the area 'Know the content and how to teach it'. Of the graduates who agreed they were effective in this area in Round 2, 60 per cent of their principals also agreed. Of principals who agreed their graduates were effective in this area in Round 2, 61.8 per cent of the graduates also agreed.

Overall in Round 2, column totals show that 86 per cent of graduates agree or strongly agree they were effective in this area, and row totals show that 89.9 per cent of principals agree or strongly agree that graduates were effective in this area, showing that graduates are slightly tougher on themselves than are their principals.

Overall in Round 3, column totals show that 90.9 per cent of graduates agree or strongly agree they are effective in this area, and row totals show that 89.6 per cent of principals agree or strongly agree that graduates are effective in this area, showing a strong consensus between graduates and principals.

3. Effectiveness in the area of 'Plan for and implement effective teaching and learning'

Table 87 shows what graduates and principals said about the graduates' effectiveness in the area of 'Plan for and implement effective teaching and learning'.

Table 87. Comparison of teacher and principal perceptions on effectiveness in 'Plan for and implement effective teaching and learning'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	14.3	71.4	14.3	100.0
Neither agree nor disagree	0.0	17.4	8.7	69.6	4.3	100.0
Agree	1.9	3.2	4.5	53.9	36.4	100.0
Strongly agree	0.0	5.8	1.9	44.2	48.1	100.0
TOTAL	1.3	5.1	4.7	53.8	35.2	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	9.1	3.9	1.2	3.0
Neither agree nor disagree	0.0	33.3	18.2	12.6	1.2	9.7

Agree	100.0	41.7	63.6	65.4	67.5	65.3
Strongly agree	0.0	25.0	9.1	18.1	30.1	22.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Round 3

Row percentages

Strongly disagree						-
Disagree	0.0	0.0	0.0	100.0	0.0	100.0
Neither agree nor disagree	0.0	11.1	11.1	72.2	5.6	100.0
Agree	0.7	1.4	4.9	57.7	35.2	100.0
Strongly agree	0.0	0.0	5.2	51.7	43.1	100.0
TOTAL	0.5	1.8	5.4	57.9	34.4	100.0

Column percentages

Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	0.0	2.3	0.0	1.4
Neither agree nor disagree	0.0	50.0	16.7	10.2	1.3	8.1
Agree	100.0	50.0	58.3	64.1	65.8	64.3
Strongly agree	0.0	0.0	25.0	23.4	32.9	26.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: disagree n=7, neither n=23, agree n=154, strongly agree n=52; Principals strongly disagree n=3, disagree n=12, neither n=11, agree n=127, strongly agree n=83; Round 3 n=221: Teachers: disagree n=3, neither n=18, agree n=142, strongly agree n=58; Principals strongly disagree n=1, disagree n=4, neither n=12, agree n=128, strongly agree n=76

The blue highlighted cells in Round 2 show that of the graduates who strongly agreed they were effective in the area of 'Plan for and implement effective teaching and learning', 48.1 per cent of their principals also strongly agreed. Of principals who strongly agreed their graduates were effective in this area in Round 2, 30.1 per cent of the graduates also strongly agreed, showing graduates' perceptions of their own effectiveness was not as positive as the perceptions their principals had of them.

Overall in Round 2, column totals show that 87.3 per cent of graduates agree or strongly agree they were effective in this area, and row totals show that 89 per cent of principals agree or strongly agree that graduates were effective in this area, showing a strong consensus between graduates and principals.

Overall in Round 3, column totals show that 90.5 per cent of graduates agree or strongly agree they were effective in this area, and row totals show that 92.3 per cent of principals agree or strongly agree that graduates were effective in this area, again showing a strong consensus between graduates and principals, with principals having a slightly more positive opinion than did graduates. These percentages also show a positive trend in effectiveness from Round 2 to Round 3, with graduate and principal perceptions of effectiveness increasing by 3 per cent. This needs to be treated with caution though, as the two rounds of surveys did not contain all the same respondents.

4. Effectiveness in the area of 'Create and maintain supportive and safe learning environments'

Table 88 shows what graduates and principals said about the graduates' effectiveness in the area of 'Create and maintain supportive and safe learning environments'.

Table 88. Comparison of teacher and principal perceptions on effectiveness in 'Create and maintain supportive and safe learning environments'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	33.3	66.7	0.0	100.0
Neither agree nor disagree	0.0	8.7	8.7	47.8	34.8	100.0
Agree	2.3	1.5	11.4	47.0	37.9	100.0
Strongly agree	2.6	1.3	6.4	43.6	46.2	100.0
TOTAL	2.1	2.1	9.7	46.2	39.8	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	4.3	1.8	0.0	1.3
Neither agree nor disagree	0.0	40.0	8.7	10.1	8.5	9.7
Agree	60.0	40.0	65.2	56.9	53.2	55.9
Strongly agree	40.0	20.0	21.7	31.2	38.3	33.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	50.0	50.0	0.0	100.0
Neither agree nor disagree	0.0	9.1	18.2	63.6	9.1	100.0
Agree	0.7	2.2	8.8	49.3	39.0	100.0
Strongly agree	0.0	0.0	4.2	51.4	44.4	100.0
TOTAL	0.5	1.8	8.1	50.7	38.9	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	5.6	0.9	0.0	0.9
Neither agree nor disagree	0.0	25.0	11.1	6.3	1.2	5.0
Agree	100.0	75.0	66.7	59.8	61.6	61.5
Strongly agree	0.0	0.0	16.7	33.0	37.2	32.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: disagree n=3, neither n=23, agree n=132, strongly agree n=78; Principals strongly disagree n=5, disagree n=5, neither n=23, agree n=109, strongly agree n=94; Round 3 n=221: Teachers: disagree n=2, neither n=11, agree n=136, strongly agree n=72; Principals strongly disagree n=1, disagree n=4, neither n=18, agree n=112, strongly agree n=86

The blue highlighted cells in Round 3 show that of the graduates who strongly agreed they were effective in the area of 'Create and maintain supportive and safe learning environments', 44.4 per cent of their principals also strongly agreed. Of principals who strongly agreed their graduates were effective in this area in Round 3, only 37.2 per cent of the graduates also strongly agreed, showing again that graduates perceptions of their own effectiveness was not as positive as the perceptions their principals have of them.

Overall in Round 2, column totals show that 89 per cent of graduates agree or strongly agreed they were effective in this area, and row totals show that 86 per cent of principals agree or strongly agree that graduates were effective in this area, showing a strong consensus between graduates and principals.

Overall in Round 3, column totals show that 94.1 per cent of graduates agreed or strongly agree they were effective in this area, and row totals show that 89.6 per cent of principals agree or strongly agreed that graduates were effective in this area, showing a reasonably strong consensus between graduates and principals, but not as strong as in Round 2.

5. Effectiveness in the area of 'Assess, provide feedback and report on student learning'

Table 89 shows what graduates and principals said about the graduates' effectiveness in the area of 'Assess, provide feedback and report on student learning'.

Table 89. Comparison of teacher and principal perceptions on effectiveness in 'Assess, provide feedback and report on student learning'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree						-
Disagree	0.0	8.3	16.7	50.0	25.0	100.0
Neither agree nor disagree	0.0	7.7	12.8	51.3	28.2	100.0
Agree	0.7	5.9	10.3	57.4	25.7	100.0
Strongly agree	2.0	6.1	8.2	49.0	34.7	100.0
TOTAL	0.8	6.4	10.6	54.2	28.0	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	6.7	8.0	4.7	4.5	5.1
Neither agree nor disagree	0.0	20.0	20.0	15.6	16.7	16.5
Agree	50.0	53.3	56.0	60.9	53.0	57.6
Strongly agree	50.0	20.0	16.0	18.8	25.8	20.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
			Row percentages			

Strongly disagree						100.0
Disagree	0.0	0.0	33.3	66.7	0.0	100.0
Neither agree nor disagree	0.0	5.0	25.0	60.0	10.0	100.0
Agree	1.3	1.3	16.8	59.7	20.8	100.0
Strongly agree	0.0	2.2	8.7	56.5	32.6	100.0
TOTAL	0.9	1.8	16.3	59.3	21.7	100.0

Column percentages

Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	5.6	3.1	0.0	2.7
Neither agree nor disagree	0.0	25.0	13.9	9.2	4.2	9.0
Agree	100.0	50.0	69.4	67.9	64.6	67.4
Strongly agree	0.0	25.0	11.1	19.8	31.3	20.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: disagree n=12, neither n=39, agree n=136, strongly agree n=49; Principals strongly disagree n=2, disagree n=15, neither n=25, agree n=128, strongly agree n=66; Round 3 n=221: Teachers: disagree n=6, neither n=20, agree n=149, strongly agree n=46; Principals strongly disagree n=2, disagree n=4, neither n=36, agree n=131, strongly agree n=48

The blue highlighted cells in Round 2 show that of the graduates who disagreed they were effective in the area of 'Assess, provide feedback and report on student learning', 8.3 per cent of their principals also disagreed. Of principals who disagreed their graduates were effective in this area in Round 2, 6.7 per cent of the graduates also disagreed. The percentages for disagreement with effectiveness should be treated with caution, as the number of responses in the disagreement categories was very small.

Overall in Round 2, column totals show that 78 per cent of graduates agreed or strongly agreed they were effective in this area, and row totals show that 82.2 per cent of principals agreed or strongly agreed that graduates were effective in this area, showing graduates' perceptions of their own effectiveness is not as positive as the perceptions their principals had of them.

Overall in Round 3, column totals show that 88.2 per cent of graduates agreed or strongly agreed they were effective in this area, and row totals show that 81 per cent of principals agreed or strongly agreed that graduates were effective in this area, showing a reasonably strong consensus between graduates and principals. Interestingly, there is an increase of 10 percentage points in agreement with effectiveness in this area from respondents who participated in Round 2 to those who participated in Round 3. This suggests a positive change in graduates' perceptions of their effectiveness in the area of assessment from the first year in teaching to the second.

6. Effectiveness in the area of 'Engage in professional learning'

Table 90 shows what graduates and principals said about the graduates' effectiveness in the area of 'Engage in professional learning'.

Table 90. Comparison of teacher and principal perceptions on effectiveness in 'Engage in professional learning'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	12.5	25.0	62.5	100.0
Neither agree nor disagree	0.0	4.8	14.3	28.6	52.4	100.0
Agree	0.0	2.5	7.5	38.3	51.7	100.0
Strongly agree	0.0	2.3	4.6	41.4	51.7	100.0
TOTAL	0.0	2.5	7.2	38.1	52.1	100.0
			Column percentages			
Strongly disagree		0.0	0.0	0.0	0.0	0.0
Disagree		0.0	5.9	2.2	4.1	3.4
Neither agree nor disagree		16.7	17.6	6.7	8.9	8.9
Agree		50.0	52.9	51.1	50.4	50.8
Strongly agree		33.3	23.5	40.0	36.6	36.9
TOTAL	-	100.0	100.0	100.0	100.0	100.0
Round 3						
			Row percentages			
Strongly disagree						-
Disagree	0.0	0.0	0.0	33.3	66.7	100.0
Neither agree nor disagree	0.0	0.0	21.4	42.9	35.7	100.0
Agree	0.7	0.7	3.7	47.8	47.1	100.0
Strongly agree	0.0	0.0	2.9	39.7	57.4	100.0
TOTAL	0.5	0.5	4.5	44.8	49.8	100.0
			Column percentages			
Strongly disagree	0.0	0.0	0.0	0.0	0.0	0.0
Disagree	0.0	0.0	0.0	1.0	1.8	1.4
Neither agree nor disagree	0.0	0.0	30.0	6.1	4.5	6.3
Agree	100.0	100.0	50.0	65.7	58.2	61.5
Strongly agree	0.0	0.0	20.0	27.3	35.5	30.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: disagree n=8, neither n=21, agree n=121, strongly agree n=87; Principals strongly disagree n=0, disagree n=6, neither n=17, agree n=90, strongly agree n=123; Round 3 n=221: Teachers: disagree n=3, neither n=14, agree n=136, strongly agree n=68; Principals strongly disagree n=1, disagree n=1, neither n=10, agree n=99, strongly agree n=110

The blue highlighted cells in Round 3 show that of the graduates who strongly agreed they were effective in the area of 'Engage in professional learning', 57.4 per cent of their principals also strongly agreed. Of principals who strongly agreed their graduates were effective in this area in Round 3, only 35.5 per cent of the graduates also strongly agreed, showing that graduates perceptions of their own effectiveness was not as positive as the perceptions their principals had of them in this key area.

Overall in Round 2, column totals show that 87.7 per cent of graduates agreed or strongly agreed they were effective in this area, and row totals show that 90.2 per cent of principals agreed or strongly agreed that graduates were effective in this area, showing a strong consensus between graduates and principals.

Overall in Round 3, column totals show that 92.3 per cent of graduates agreed or strongly agreed they were effective in this area, and row totals show that 94.6 per cent of principals agreed or strongly agreed that graduates were effective in this area, also showing a strong consensus between graduates and principals. These percentages, over the two rounds, also confirms that for this key area, principals generally were more likely than graduates to agree that their graduates were effective in this area.

7. Effectiveness in the area of 'Engage professionally with colleagues, parents/carers and the community'

Table 91 below shows what graduates and principals said about the graduates' effectiveness in the area of 'Engage professionally with colleagues, parents/carers and the community'.

Table 91. Comparison of teacher and principal perceptions on effectiveness in 'Engage professionally with colleagues, parents/carers and the community'

	Principals					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Graduates						
Round 2						
			Row percentages			
Strongly disagree	0.0	0.0	100.0	0.0	0.0	100.0
Disagree	0.0	10.0	30.0	40.0	20.0	100.0
Neither agree nor disagree	0.0	0.0	14.6	58.5	26.8	100.0
Agree	1.6	3.9	17.8	47.3	29.5	100.0
Strongly agree	0.0	1.8	7.3	47.3	43.6	100.0
TOTAL	0.8	3.0	15.7	48.7	31.8	100.0
			Column percentages			
Strongly disagree	0.0	0.0	2.7	0.0	0.0	0.4
Disagree	0.0	14.3	8.1	3.5	2.7	4.2
Neither agree nor disagree	0.0	0.0	16.2	20.9	14.7	17.4
Agree	100.0	71.4	62.2	53.0	50.7	54.7
Strongly agree	0.0	14.3	10.8	22.6	32.0	23.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
			Row percentages			
Strongly disagree	0.0	0.0	100.0	0.0	0.0	100.0

Disagree	0.0	0.0	50.0	50.0	0.0	100.0
Neither agree nor disagree	0.0	0.0	31.0	44.8	24.1	100.0
Agree	0.8	3.1	13.0	49.6	33.6	100.0
Strongly agree	1.8	1.8	7.1	58.9	30.4	100.0
TOTAL	0.9	2.3	14.9	51.1	30.8	100.0

Column percentages

Strongly disagree	0.0	0.0	3.0	0.0	0.0	0.5
Disagree	0.0	0.0	6.1	1.8	0.0	1.8
Neither agree nor disagree	0.0	0.0	27.3	11.5	10.3	13.1
Agree	50.0	80.0	51.5	57.5	64.7	59.3
Strongly agree	50.0	20.0	12.1	29.2	25.0	25.3
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Note: Round 2 n=236: Teachers: strongly disagree n=1, disagree n=10, neither n=41, agree n=129, strongly agree n=55; Principals strongly disagree n=2, disagree n=7, neither n=37, agree n=115, strongly agree n=75; Round 3 n=221: Teachers: strongly disagree n=1, disagree n=4, neither n=29, agree n=131, strongly agree n=56; Principals strongly disagree n=2, disagree n=5, neither n=33, agree n=113, strongly agree n=68

Overall in Round 2, column totals show that 78 per cent of graduates agreed or strongly agreed they were effective in the area of 'Engage professionally with colleagues, parents/carers and the community', and row totals show that 80.5 per cent of principals agreed or strongly agreed that graduates were effective in this area, showing a strong consensus between graduates and principals. This area also had a considerable percentage of graduates and principals who had no opinion of graduates' effectiveness in this area (17.4 per cent and 15.7 per cent, respectively).

Overall in Round 3, column totals show that 84.6 per cent of graduates agreed or strongly agreed they were effective in this area, and row totals show that 81.9 per cent of principals agreed or strongly agreed that graduates were effective in this area, showing a reasonably strong consensus between graduates and principals. It also suggests that by the beginning of their second year of teaching, more graduates were in agreement on their effectiveness in this area than at the end of their first year (84.6 per cent compared to 78 per cent), whilst principal opinions remained fairly static. There was a slightly larger percentage of principals than graduates who neither agreed nor disagreed in Round 3 (14.9 per cent compared to 13.1 per cent).

4.4 Entry into Teacher Education

Across Australia, entry into teacher education is managed by state and territory-based tertiary admissions centres, with variations in practices across jurisdictions. Generally, entry into teacher education programs requires candidates to meet minimum tertiary entrance requirements for the state/territory, satisfy the entry pre-requisites for the specific program, and to be selected in competition with other eligible applicants.

Ingvarson, Beavis and Kleinhenz's (2004) mapping of selection processes found that teacher education providers used tertiary entrance scores as the main pre-requisite of admission for undergraduate degrees, and that smaller providers appeared to use a greater range of selection procedures. However, in 2011 the Australian Tertiary Admission Rank (ATAR) was the determining factor for entry into ITE programs for only 40 per cent of domestic undergraduate students, and 27 per cent of all students — 72 per cent of all ITE undergraduate program candidates are granted entry based on measures other than ATAR (Australian Institute For Teaching and School Leadership, 2013; Department of Industry, Innovation, Science, Research and Tertiary Education, 2012a). The Australian Institute for Teaching and School Leadership calculated that of the successful applicants for whom entry was based on ATAR, 28 per cent were scores of 80 and above and the majority were between 61 and 80 (Australian Institute of Teaching and School Leadership, 2011c). In addition, it should be noted that scholars like Teese and Polesel (2003) have problematised the use of ATAR as the primary measure for university entry finding ATAR to be highly correlated with socio-economic status and more reliable as a predictor of socio-economic status than of academic capability. Alongside this research, Gale and Mills (2013), citing national and international literature (see Dobozy, 2008; Tranter, Murdoch, & Saville, 2007; Win & Miller, 2005), report that students from low socio-economic status backgrounds enrolled in university programs perform similarly to students from high socio-economic status backgrounds.

In the mapping component of this project, LTEWS found that for undergraduate degree programs, institutions often listed ATAR and results of pre-requisite Year 12 subjects (typically general mathematics or mathematical methods and English) as the primary criterion for school leaver entry. It also showed that they take into account previous education, qualifications and work experience of mature-age and career change applicants in order to determine entry into teacher education programs. For entry into postgraduate/graduate teacher education programs, applicants generally require a 3-year bachelor's degree in any discipline other than teaching. For secondary teaching, that degree must include successful study in disciplines that enable students to qualify for two single teaching method subjects or one double method. Methods usually require a background of study for at least two years. In the main, postgraduate teacher education programs assume discipline knowledge expertise prior to entering the program and this is the basis of entry requirements and teacher registration requirements.

Other measures less frequently considered for entry into teacher education programs are interviews, portfolios, auditions, character references, residential location, socio-economic status and evidence of prior learning. Portfolios and auditions are most common in the programs with specialisations in Music and Fine Arts. Some examples are included in the mapping report (See Appendix 1). For example, pre-requisites for admission to Queensland University of Technology's Graduate Diploma in Education (Senior Years)/Bachelor of Fine Arts (Dance, Drama or Visual Arts) include successful audition for the dance major, and a successful portfolio and interview for the visual arts major.

Moreover, the mapping activity also revealed that factors such as residential address and socio-economic status are typically used in alternative entry schemes with an equity agenda. For example, the University of Ballarat offers the Regional Education Entry Program (REEP). Students who apply through REEP are assessed on their demonstrated motivation to succeed and their contributions to their school and community, not just their ATAR.

This program specifically seeks to increase the participation rates in higher education of students from rural and regional areas. Some institutions also offer bridging programs specifically designed to provide a pathway into teaching for school leavers with lower ATARs. For example, Victoria University operates the Portfolio Partnership Program (PPP), a partnership between the University and a selection of over 120 Victorian schools. Like REEP, the program assesses applications based on ATAR and a combination of goals, achievements and community involvement.

Box 12 lists the main findings of Section 4.4.

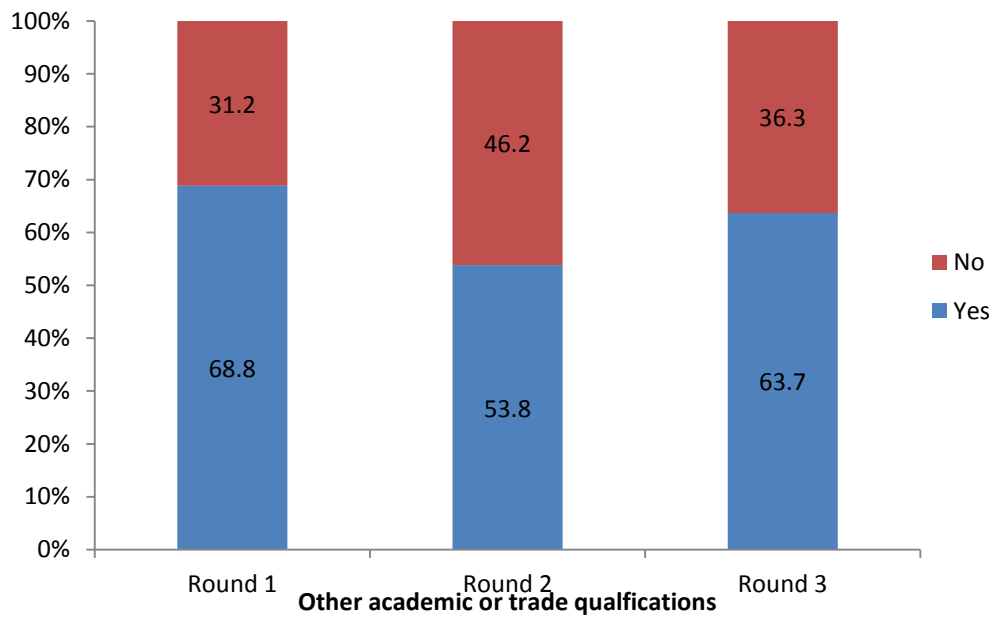
Box 12. Main Findings: Entry into teacher education programs

- ATAR as a measure of entry is only relevant for a relatively small percentage of those entering teacher education – school leavers commencing undergraduate programs. Analysis of the respondents' age shows that between 70 to 78 per cent of LTEWS respondents over the three survey rounds did not enter their teacher education programs immediately after completing their secondary education.
- A majority of graduates had prior academic or trade qualifications before entering their teacher education program. About 60 per cent of those with prior qualifications held bachelor degrees and 11-12 per cent held postgraduate qualifications. More secondary graduates had prior qualifications than those in primary or early childhood.
- The mapping of initial teacher education component of this study shows that teacher education providers use additional measures for program entry including prior qualifications, interviews, portfolios, auditions, character references, residential location, SES and evidence of prior learning.

As the entry characteristics including ATAR cut-offs for initial teacher education programs change from year to year, in LTEWS it was not possible to show meaningful connections between the entry characteristics for the 2011 graduate cohort and career paths.

In LTEWS, the data show that many respondents had came to teaching with prior qualifications, as shown in the figure below. In Round 1, 69 per cent of respondents indicated they had academic or trade qualifications prior to undertaking their teacher education program. In Rounds 2, this group consisted of 54 per cent of all respondents and in Round 3, 64 per cent.

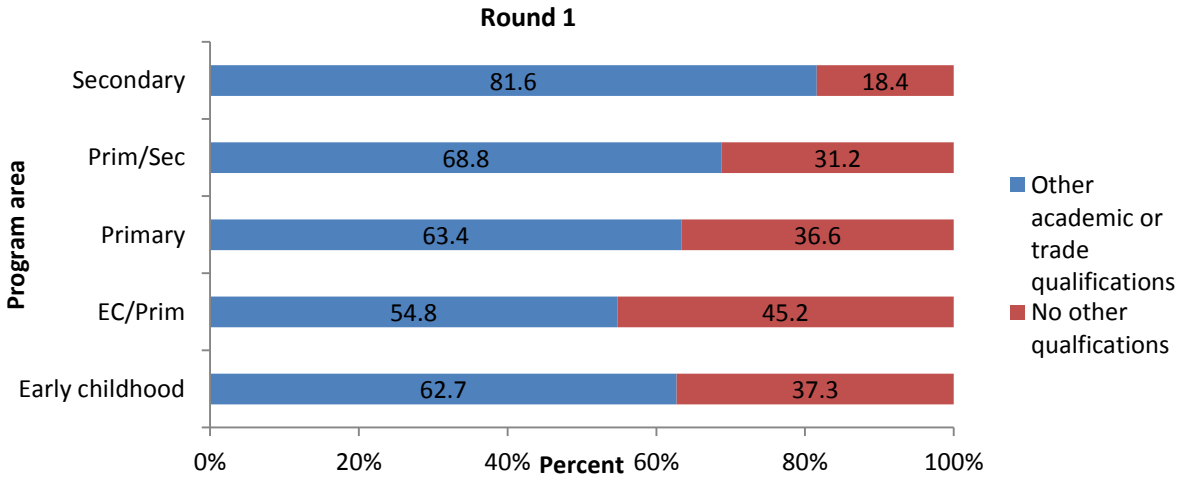
Figure 29. Graduate teachers with academic or trade qualifications in an area other than teaching



Note: Round 1 n=1,375; Round 2 n=2,765; Round 3 n=2,248

Figure 30 shows the percentage of respondents with prior qualifications, by the main area of their initial teacher education program. In all three survey rounds, the graduate teachers in the early childhood/primary area had the lowest percentage with prior qualifications but in Rounds 1 and 2 prior qualifications were held by over 54 per cent of them. The graduate teachers with the highest proportion having prior qualifications are those whose main area of study was secondary teaching.

Figure 30. Graduate teachers' main area of program – by previous qualifications



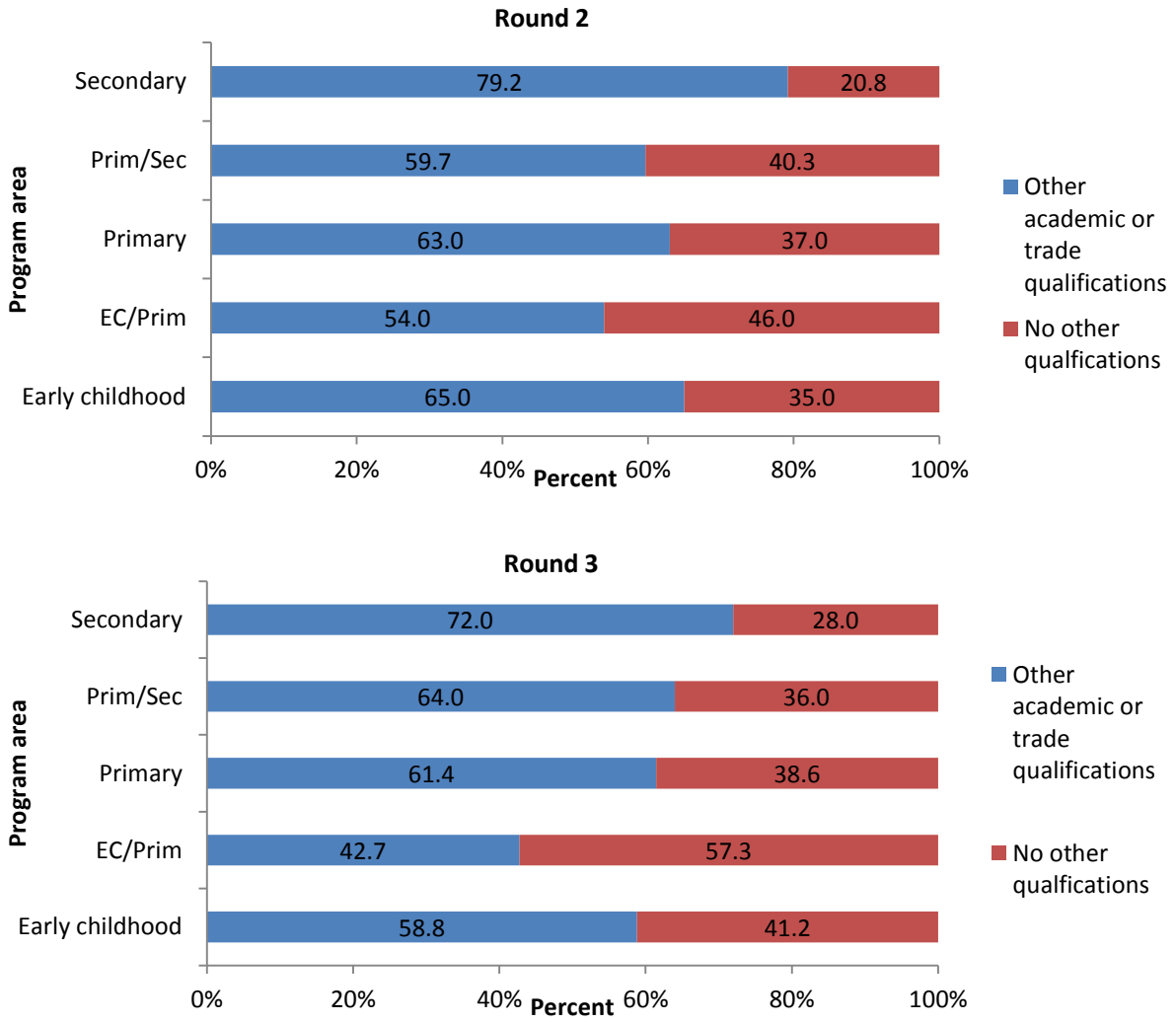


Table 92 below shows the breakdown of these prior qualifications. Across the three rounds of surveys, 59 to 60 per cent of graduate teachers with prior qualifications had a bachelor's degree, 13 to 14 per cent had a certificate and 11 to 12 per cent had a qualification at the postgraduate level.

Table 92. Graduate teachers by highest qualifications in fields other than education

	Round 1		Round 2		Round 3	
	n	n	n	%	n	%
Postgraduate degree level	120	12.7	171	11.5	177	12.8
Grad Diploma/Certificate level	71	7.5	105	7.1	120	8.7
Bachelor degree level	549	58.1	886	59.6	827	59.6
Advanced Diploma or Diploma level	70	7.4	121	8.1	78	5.6
Certificate level	135	14.3	204	13.7	185	13.3
TOTAL	945	100.0	1,487	100.0	1,387	100.0

As well as qualifications, approximately half of all graduate respondents in all three surveys stated they also had prior trade or industry experience before coming to teaching.

The data in the Tables and Figures above indicate that a large proportion of graduates in LTEWS did not enter teaching education programs straight from school. The table below looks at the age groups in which graduate respondents belonged at the time of answering the surveys.

Table 93. Graduate teachers by age

	Round 1		Round 2		Round 3	
	n	n	n	%	n	%
20-24	403	29.8	811	29.6	480	21.5
25-29	317	23.4	779	28.4	709	31.7
30-34	155	11.4	322	11.7	288	12.9
35-39	127	9.4	232	8.5	199	8.9
40-44	158	11.7	265	9.7	234	10.5
45-49	119	8.8	182	6.6	180	8.1
50+	75	5.5	151	5.5	146	6.5
TOTAL	1,354	100.0	2,742	100.0	2,236	100.0

If graduates were entering teacher education directly from secondary school, the data would show that the majority of respondents were in the 20-24 year old age group. This is not the case. Graduates in this age group were 30 per cent of respondents in Rounds 1 and 2 and 22 per cent in Round 3. This indicates that between 70 to 78 per cent of respondents over the three survey rounds did not enter their teacher education programs immediately after completing their secondary education.

4.5 The Practicum

This section examines the relevance and effectiveness of the practicum component of teacher education programs by drawing on analysis of the Graduate Teacher Surveys and the Principal Surveys, and supported by interview data and the activity which mapped teacher education programs across Australia as they were for the cohort being tracked (see Appendix 1). It discusses the nature of practicum and its impact on graduates' decisions whether or not to seek teaching employment, the structures and approaches considered effective for early career teaching, the ways in which practicum processes influence or support graduates' career retention and advancement, and the extent to which it is adequate for subsequent classroom teaching.

Professional experience in schools is a requirement of all teacher education programs in Australia and although terms used to describe components of professional experience vary from state to state, 'professional experience' generally refers to a range of experiences including internships, observations, supervised teaching practice or practicum as well as community placements. In this report, we use the term 'practicum' to define the days in schools where pre-service teachers are supervised (i.e. the number of supervised days required for teacher registration purposes).

The Australian Government provides funding to Higher Education Institutions for practicum supervision. These Institutions then contract directly with individual schools for the provision of supervision of pre-service teachers. Until 2011, an Industrial Award, the *Australian Higher Education Practice Teaching Supervision Award 1990,* provided guidelines for the eligibility of teachers for practicum supervision as well as the rates for payment for supervising in all Australian States and Territories. Teacher regulatory authorities in each state and territory have required a minimum number of supervised practicum days for accreditation of teacher education programs. This is now framed by the new national program standards for accreditation of teacher education programs that detail consistent requirements for all states and territories. However, at the time of accreditation of the programs that the LTEWS cohort would have completed, there was much variety in what was required in each state and territory.

As noted earlier in this report, the past decades have seen many government inquiries on teacher education, including comments on the practicum. *Australia's Teachers: Australia's Future* (Committee for the Review of Teaching and Teacher Education, 2003) highlighted considerable variation in the professional experiences in teacher education programs and also financial and structural constraints. Ingvarson, Beavis and Kleinhenz's (2004) study underlined placement shortages and other structural processes that seemed to hinder pre-service teachers' opportunities for school-based professional experiences. Other studies have stressed the need for increased professional engagement between universities and schools in the professionalisation of the teaching profession (e.g Caldwell & Sutton, 2010; White, Bloomfield, & Le Cornu, 2010). Research has also shown that effective time spent in the classrooms during initial teacher preparation impacts on teachers' decisions to stay on the job longer (D. Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2007; U.S. Department of Education. National Center for Education Statistics, 2000). However, more needs to be known about the particularities of practicum approaches and delivery that can effectively support early career teachers to integrate their knowledge in skilful ways (White et al., 2010).

Box 13 lists the main findings for Section 4.5.

Box 13. Main Findings: The Practicum

- Nearly all graduates with a teaching position agreed that the skills they developed during the practicum were important and that this prepared them for their current teaching context, irrespective of the ways in which the practicum was structured – days per week or blocks.
- Regardless of the practicum type, virtually all graduates who were teaching considered that they were successful in influencing student learning
- Approximately a third of graduates either strongly agreed or agreed that their university-based units were relevant for their current teaching contexts. However, as compared to their practicum experiences, graduates felt that their university-based units were less helpful in preparing them for their current teaching contexts.
- More than 83 per cent of graduates undertook some of their practicum in one or more weekly blocks.
- Graduate teachers' and principals' responses highlight the value of the teacher education program including a combination of 1 to 2 days per week and block placements of 5 weeks duration, and then internships in the final part of the program.
- Graduate teachers and principals highlighted the value of an internship in the final part of the program to provide a sustained time transitioning into teaching employment. In free text responses, some principals highlighted the value of internships in helping them ascertain a graduating teacher's suitability for employment.
- Many graduate teachers stressed the need for greater theory and practice linkages to apply what they have learnt into real world contexts.
- Graduates who participated in the telephone interviews highlighted the importance of strong school partnerships for sustained and on-going professional learning in real-world settings in order to improve their effectiveness. Interviews with provider representatives revealed that difficulties associated with costs and the difficulties in finding partner schools to work with.
- Graduate teachers' interview responses highlighted inconsistencies in the quality and provision of university and teacher supervision during their practicum experiences. They also highlighted the value of professional learning conversations as they learn to teach and refine their practice.
- Graduates highlighted the value of completing a variety of teaching experiences in diverse settings in order to understand classroom complexities that come with different social and cultural spaces.
- In the interviews, graduates highlighted preferences for:
    - More practicum time
    - A range of practicum experiences in different types of school settings
    - More contact from their university supervisors during practicum, and strong partnership and mentoring structures from both the university and teachers in schools.

4.5.1 The nature of the practicum and graduates' decisions about whether or not to seek teaching employment.

In the surveys, graduate teachers were asked about the ways in which their teacher education practicum was structured. Respondents to the surveys were asked if the practicum component of their teacher education program included:

- 1-2 days a week in schools over an extended period of time
- Five days a week over one or more weeks (Block)
- An internship

The responses, as shown in the table below, indicate that the most common type of practicum is a block, where pre-service teachers are in a school for five days a week for a number of weeks.

Table 94. Graduate teachers – by the structure of the practicum in their teacher education program

The structure of the practicum in your program ...	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
1-2 days a week over an extended period	337	24.5	513	24.9	557	29.4
5 days a week over 1 or more weeks (Block)	1,246	90.6	1,882	91.2	1,583	83.4
Internship	360	26.2	576	27.9	670	35.4

Note: 1. Round 1 n=1,375; Round 2 n=2,063; Round 3 n=1,895

2. Graduates could indicate that they took part in more than one form of practicum component, and therefore the responses do not add to 100 per cent.

To formulate an answer to the question: 'Does nature of teacher practice incorporated into teacher preparation programs appear to influence graduates in deciding whether or not to seek teaching employment?' – two questions from the datasets were analysed in relation to the structure of the practicum in order to examine the employment patterns for graduates who undertook different practicum structures:

- Are you currently employed as a teacher?
- Are you currently seeking work as a teacher?

The first question was asked of all graduates in each survey round. When cross-tabulated with the practicum structures, the results suggest that graduates who participated in an internship had a higher percentage in teaching employment in Round 1 than did those whose practicum was composed of 1 to 2 days a week or a block of time. This result must be regarded with caution, as it was not repeated across the subsequent rounds, suggesting the high possibility of extraneous variables such as the institution where these internships were organised, institutional and/or program relationships with schools, and the states or territory in which these programs were located.

The second question was asked of those who *did not have a teaching position* in a school. When cross-tabulated with the practicum structures, the results show there is no relationship between practicum structures and the likelihood of unemployed graduates seeking work as a teacher.

Table 95. Graduates' practicum structures – by employment as a teacher and seeking work as a teacher

The structure of the practicum in the teacher education program ...	Round 1		Round 2		Round 3	
	n	%	n	%	N	%
Currently employed as a teacher						
1-2 days a week over an extended period	256	76.2	430	87.0	469	85.4
5 days a week over 1 or more weeks	914	73.7	1,545	84.3	1,297	83.1
Internship	290	80.6*	460	82.1	563	85.0
Total	1,324	74.0	2,618	84.7	1,866	83.6
Currently seeking work as a teacher						
1-2 days a week over an extended period	68	81.0	42	65.6	52	65.0
5 days a week over 1 or more weeks	293	84.0	200	69.4	171	64.8
Internship	61	81.3	69	69.0	63	63.6
Total	371	83.6	402	68.4	309	63.1

Note: 1. Graduates could indicate that they took part in more than one form of practicum component therefore the number of responses is not equal to the total.
2. *Round 1, those with an internship who are currently teaching is statistically significant ($p<0.005$).

Overall, these data show that the likelihood of graduates having a teaching position in a school, or the likelihood of seeking or not seeking teaching employment for graduates who are not employed as teachers, have no relationship to the structure of the practicum incorporated in their teacher education program.

4.5.2 Structures and approaches in practicum considered by graduates and principals as being effective in preparing teachers for initial employment.

There were two questions in the Graduate Teacher Survey that asked about the practicum component of graduates' teacher education programs. The questions required a response on a five-point Likert scale to indicate the level of agreement with the following statements:

- The skills I gained during the professional experience/practicum components of my teacher education program were important
- The professional experience/practicum components of my teacher education program helped prepare me for my current teaching context

Table 96 shows the importance of the practicum for gaining skills, according to graduate teachers across the three rounds of the LTEWS Graduate Teacher Survey. As the results show, between 96 to 98 per cent of graduate teachers either strongly agreed or agreed that the skills they gained during practicum were important over all three rounds.

Table 96. Graduate teachers with a teaching position – by their view of *importance of skills gained* in practicum

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Strongly Disagree	5	0.5	8	0.4	4	0.2
Disagree	5	0.5	17	0.8	17	1.0
Neither Agree nor Disagree	11	1.2	37	1.8	54	3.2
Agree	223	23.9	637	30.4	525	30.6
Strongly Agree	688	73.8	1395	66.6	1113	65.0
Total	932	100.0	2,094	100.0	1713	100.0

A question was asked of graduate teachers currently teaching about the relevance of their practicum experience for their current teaching context. The results are shown in the table below.

Table 97. Graduate teachers with a teaching position – by their view of *relevance of practicum* to current teaching

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Strongly Disagree	11	1.2	20	1.0	16	0.9
Disagree	33	3.5	54	2.6	69	4.0
Neither Agree nor Disagree	28	3.0	114	5.4	113	6.6
Agree	269	28.9	774	37.0	675	39.2
Strongly Agree	591	63.4	1130	54.0	848	49.3
Total	932	100.0	2092	100.0	1721	100.0

Ninety-two per cent of graduate teachers either strongly agreed or agreed that their practicum prepared them for their current teaching context in Round 1, and by Round 3 the level of agreement was still considerably high at 88.5 per cent.

In the interviews and survey free text responses, graduate teachers highlighted the important role the practicum played in their overall program experience, for example:

> *that's [practicum] definitely, probably, the biggest thing throughout university. I got a lot out of those practicums…definitely after each lesson talking to teachers about what worked, what didn't, what I could do next time to improve and things … and then those conversations going on in your head after every lesson.*
>
> *Graduate teacher, full-time contract, metropolitan, primary school*

Many of them indicated that they preferred longer and sustained practicum time in the classrooms, for example:

In the Graduate Teacher Survey, respondents were asked about their level of agreement with the statement, 'The skills I gained during the professional experience/practicum components of my teacher education program were important'. The analysis cross-tabulated responses with the types of practicum components in which graduates participated. Table 98 below shows teaching graduates' level of agreement with the statement. Results shown here are only an indication of how views differ across the three practicum components because graduates were able to select as many practicum components as were relevant to them in the surveys.

> *Experience during practicum in classrooms is intangible. If I could change the course, I would extend the graduate diploma from 1 year to 18 months, increasing school time and reducing on campus time. I imagined the cost of this would be greater, however, the value of hands on experience would produce far more effective graduate teachers.*
>
> *Graduate teacher, full-time permanent, primary school*

Table 98. Graduate teachers with a teaching position – by their view of the importance of skills gained *in practicum, by practicum component*

Skills gained during practicum were important	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 1					
1-2 days a week	0.8	0.0	0.8	28.6	69.8
Block	0.5	0.6	1.0	23.1	74.9
Internship	0.0	0.7	0.7	22.3	76.2
Round 2					
1-2 days a week	0.0	0.2	0.7	31.6	67.5
Block	0.5	0.8	1.7	30.1	67.0
Internship	0.0	0.2	1.2	25.4	73.2
Round 3					

1-2 days a week	0.7	0.9	0.7	33.9	63.8
Block	0.2	0.7	2.6	29.8	66.6
Internship	0.4	1.0	2.9	30.0	65.8

There are no significant differences across the three practicum components in terms of the agreement with the statement that practicum skills were important. Between 96 to 99 per cent of respondents either agreed or strongly agreed in all three rounds, regardless of the practicum component in which they took part.

Table 99 below shows the graduates' level of agreement with the statement *The professional experience/practicum components of my teacher education program helped prepare me for my current teaching context*, cross-tabulating responses with practicum components in which graduates participated. Again, results shown here are only an indication of how views differ across the three practicum components because graduates were able to select multiple options in the surveys as were relevant to them

Table 99. Graduate teachers with a teaching position – by their view of *relevance of practicum to current teaching, by practicum component*

Practicum helped prepare for current teaching context	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 1					
1-2 days a week	2.4	4.9	3.3	29.0	60.4
Block	0.9	3.3	2.9	29.0	63.8
Internship	0.7	5.5	3.3	27.5	63.0
Round 2					
1-2 days a week	0.5	2.2	5.6	39.3	52.4
Block	1.2	2.5	5.1	36.7	54.4
Internship	0.7	2.1	4.8	33.9	58.4
Round 3					
1-2 days a week	1.1	2.7	5.7	43.6	46.8
Block	0.7	3.3	6.1	40.1	49.7
Internship	0.8	4.2	6.3	37.1	51.6

There are no significant differences across the three practicum components in terms of the agreement with the statement that practicum was relevant to their current teaching context. Between 89 to 93 per cent of respondents agreed or strongly agreed in all three rounds, regardless of the practicum component in which they took part. Interestingly the total percentage of disagreement, whilst small across all three rounds, tended to decrease more over time than did the level of agreement. So the slight decrease in agreement levels over time did not correspond with an increase in disagreement levels, but rather an increase in those who neither agreed nor disagreed.

As noted in Section 4.4.1, for most graduates, a block of time – five days a week over one or more weeks – was a more common form of practicum than an internship or practicum of 1 to 2 days a week over a period of time. Table 100 below shows the type of practicum undertaken by the respondents by their program type.

Table 100. Graduate teachers' practicum components, by program type

	Masters		Bachelor		Grad/postgrad Diploma	
	N	%	n	%	n	%
Round 1						
1-2 days a week	63	37.5	177	28.3	94	17.2
Block	157	93.5	578	92.3	509	93.1
Internship	33	19.6	240	38.3	87	15.9
Round 2						
1-2 days a week	121	33.7	255	20.1	135	14.2
Block	257	71.6	897	70.8	713	75.1
Internship	61	17.0	396	31.3	115	12.1
Round 3						
1-2 days a week	114	43.5	285	33.4	147	20.9
Block	205	78.2	726	85.0	607	86.3
Internship	79	30.2	399	46.7	175	24.9

Note: Round 1: Masters n=168, Bachelor n= 626, Grad dip n=547; Round 2: Masters n=359, Bachelor n= 1,267, Grad dip n=949; Round 3: Masters n=299, Bachelor n= 944, Grad dip n=767

In all three rounds, responses show the majority of those in all three program levels undertook a block practicum. Masters graduates have the highest percentage of practicum experience involving 1 to 2 days per week (from 33.7 to 43.5 per cent of them have completed practicum in this form), and bachelor's graduates have the highest percentage of those who complete an internship (from 31.1 per cent in Round 2 to 46.7 per cent in Round 3). Some states have extended practicums that are referred to as internships, so the figure for internships is not completely reliable.

Internships have been introduced into many teacher education programs to facilitate pre-service teachers' transition into beginning teaching. Internships are often a block of 6 to 10 weeks in schools and the intern usually takes full responsibility for planning, developing, teaching, assessing and reporting for a class or classes over a sustained period of time, sometimes a whole term. During this period, the intern is immersed in the school as a beginning teacher, including the classroom and across-school experiences expected of a beginning teacher. Unlike a pre-service teacher completing a supervised practicum, an intern does not require direct supervision in the classroom at all times, although 'general' supervision is usually provided by the supervising teacher as a mentor. Internships are usually covered by signed formal agreements with relevant parties. But, the term 'internship' can mean different things in different states and territories and even across teacher education programs within a state or territory. However, it is generally recognised that an internship is a 'near independent teaching' experience towards the end of a teacher education program after the pre-service teacher has successfully completed the

majority of the program coursework as well as the required number of supervised practicum days (e.g. Victorian Institute of Teaching[10]).

In the 'Mapping of Initial Teacher Education Programs in Australia in 2011' report, over 43 per cent of the teacher education programs included internships as part of their professional experiences (See Appendix 1). Some some providers refer to an extended period in schools as an internship. For example, at The University of New South Wales (UNSW) College of Fine Arts, all pre-service teachers of the Bachelor of Design/Bachelor of Art Education program undertake 12 weeks of Professional Experience Internships in New South Wales high schools. During the Professional Experience Internship, pre-service students teach full-time and participate in the administrative and professional obligations of the school such as staff meetings and community consultations, as well as sports and other co-curricular activities. However, the internship at the UNSW College of Fine Arts is supervised by co-operating teachers and student teachers' progress is jointly assessed by the co-operating teachers and faculty of the School of Art Education.

Overall, graduate teachers' and principals' responses highlighted the value of longer practicums, in particular, extended placements in schools such as internships to provide a transition into teaching employment. Some principals also highlighted internships in helping them ascertain a graduating teacher's suitability for employment. Some principals' free text responses on their suggestions for changes to teacher education are as follows:

- 'Extended internships – short placements do not allow adequate exposure to the ongoing nature of teaching.'
- 'Gaining experience teaching in a variety of contexts, experiencing the whole process from planning-teaching-assessing-reporting. Internships are very valuable for the beginning teacher to understand fully what is expected of them when they begin their career.'
- 'Internship for 10 weeks is fabulous.'
- 'In school placements with quality teachers Internships for extended periods.'
- 'Internships and Applied Curriculum Project immerse students in the life of the school.'
- 'Practicums and internships are vital for the students to practice the skills they need to develop in the classroom. The theory of teaching and subject-specific information is important but refining the Mechanics of Teaching is paramount for them being successful.'
- 'School based supervised practicum and internships in multiple phases integrated with tertiary coursework.'
- 'Extended internships – short placements do not allow adequate exposure to the ongoing nature of teaching.'

Internships were seen as beneficial when structured as a final part of the program in combination with a range of practicum (1 to 2 days per week and block placements of 5 weeks duration) throughout the course. The survey results show that internships are generally more prevalent in the undergraduate degrees, with over 31 to 47 per cent of bachelor's graduates completing an internship as compared to graduate teachers from other programs. This finding is further verified in the mapping data. The length and duration of the bachelor program allows for greater flexibility and time required for such sustained and extended practicum.

[10] http://www.vit.vic.edu.au/finditfast/Teacher-education-programs/Pages/Interns.aspx

Details on the length of internships completed by LTEWS graduate teacher respondents are shown in Table 101 below. Just under half of the respondents who undertook an internship stated the internship duration was between 4 to 6 weeks in length (Round 2 – 41 per cent; Round 3 – 46 per cent). The next most common internship length was 10 to 12 weeks. From the mapping data, the duration of the internships range from 4 weeks such as in the University of Queensland's Graduate Diploma in Education (Middle Years of Schooling) to 18 weeks such as at Charles Darwin University's Alice Springs Campus.

Table 101. Graduate teachers – by length of internship as part of practicum component in teacher education program

	Round 2		Round 3	
Length of internship	n	%	n	%
2-3 weeks	8	2.0	4	2.8
4-6 weeks	165	40.6	65	45.5
7-9 weeks	67	16.5	25	17.5
10-12 weeks	143	35.2	42	29.4
13-15 weeks	23	5.7	7	4.9
TOTAL	406	100.0	143	100.0

A snapshot of programs that incorporate internships is available in Appendix 1: Attachment D. Attachment D gives an indication of the length of the internships, the level of study of the degree within which they are embedded, and the teaching scope. However, as mentioned, a challenge encountered in this study was that some institutions refer to an extended period in schools as an internship even though the pre-service teachers are closely supervised, and this time in schools is part of the required number of practicum days for registration purposes (as in a supervised practicum, often with the perplexing name 'supervised internship').

Table 102 below shows the length of internship cross-tabulated with the type of supervision respondents received.

Table 102. Graduate teachers' length of internship – by type of supervision provided during internship

	General supervision only, as for graduate teachers		Constant supervision by a mentor teacher/s		Other, please specify		Total	
	n	%	n	%	n	%	n	%
Round 2								
2-3 weeks	6	75.0	2	25.0	0	0.0	8	100.0
4-6 weeks	90	54.5	59	35.8	16	9.7	165	100.0
7-9 weeks	28	41.8	34	50.7	5	7.5	67	100.0
10-12 weeks	62	43.4	65	45.5	16	11.2	143	100.0
13-15 weeks	3	13.0	17	73.9	3	13.0	23	100.0
TOTAL	189	46.6	179	43.6	40	9.8	408	100.0

Round 3								
2-3 weeks	3	75.0	1	25.0	0	0.0	4	100.0
4-6 weeks	36	55.4	20	30.8	9	13.8	65	100.0
7-9 weeks	14	56.0	8	32.0	3	12.0	25	100.0
10-12 weeks	10	23.8	28	66.7	4	9.5	42	100.0
13-15 weeks	0	0.0	6	85.7	1	14.3.	7	100.0
TOTAL	63	44.1	63	44.1	17	11.9	143	100.0

In terms of supervision during internship, the survey data responses on the type of supervision provided during internships illustrates that 46 per cent of respondents received general supervision only, while 44 per cent of them had constant supervision by a mentor teacher/s. Data from both rounds show graduate teachers who indicated a shorter internship tended to have more general supervision than respondents with a longer internship.

4.5.3 The ways in which the practicum appears to influence or support graduates' career retention or advancement

As noted, the nature of the practicum incorporated into teacher education programs was a construct that consisted of three components:

- 1-2 days a week over an extended period of time
- Five days a week over one or more weeks (Block)
- Internship

These practicum components were cross-tabulated with variables on retention and advancement in the longitudinal datasets – looking at Cohorts 2 and 3, which track changes over the six-month period from October 2012 to March 2013, and the 12-month period from March 2012 to March 2013.

No relationship was found between the practicum components and respondents' retention or advancement. The number of respondents in each cell in these calculations was too few, causing such an increase in the size of the standard error that results are not reliable. The table below shows that the results of this cross-tabulated data demonstrates the small number of responses per cell, and that there was no relationship between practicum components and retention or advancement. The responses to the practicum components were recorded as 'Yes' (participated in this practicum component) and 'No' (did not participate in this practicum component).

The table shows the number of responses and the percentage for graduates who did and did not participate in the three practicum components, cross-tabulated firstly with retention and attrition (i.e. leaving teaching) and then cross-tabulated with whether or not graduates held a leadership position in a school. The responses in the data below are those graduates who participated in the two Graduate Teacher Surveys over the 12 months from March 2012 to March 2013 (Cohort 3).

Table 103. Graduates' participation in practicum components types – by retention and attrition, and by leadership position as a teacher in a school

	1-2 days a week				Block				Internship			
	Yes		No		Yes		No		Yes		No	
	n	%	n	%	n	%	n	%	n	%	n	%
Cohort 3												
Retained	91	92.9	267	90.8	335	91.3	23	92.0	110	92.4	248	90.8
Attrition	7	7.1	27	9.2	32	8.7	2	8.0	9	7.6	25	9.2
Total	98	100.0	294	100.0	367	100.0	25	100.0	119	100.0	273	100.0
Leadership	18	15.1	41	12.1	55	13.1	4	13.1	14	11.6	45	13.4
No leadership	101	84.9	297	87.9	365	86.9	33	86.9	107	88.4	291	86.6
Total	119	100.0	338	100.0	420	100.0	37	100.0	121	100.0	336	100.0

Attrition numbers were small across cross-tabulations with all practicum components. There was also no relationship between whether or not respondents participated in a practicum component and whether or not they were retained in teaching. For example, 91.3 per cent of those who participated in a block practicum were retained as a teacher and 92.0 per cent of those who did not participate in a block practicum were retained.

The results of these cross-tabulations were not analysed by the three separate school variables because the resulting number of respondents in each cell for each school variable analysis was too small to ensure reliable results.

4.5.4 The extent to which the practicum is adequate for subsequent classroom teaching

Teacher regulatory authorities in each state and territory require a minimum number of supervised practicum days in order for teacher education programs to be accredited. The legislated minimum number of supervised practicum days by state and territory is provided in Table 104 (as available on teacher regulatory authority websites early 2012, during the time of the teacher education mapping component of this study).

Table 104. Teacher regulatory authority requirements for minimum days for supervised practicum by state/ territory (early 2012)

State/Territory	4-year undergraduate programs	1-year graduate programs	2-year graduate programs
Australian Capital Territory	80	45	60
New South Wales	80	45 (50 for 18 month programs)	60
Northern Territory	90	55	Not specified
Queensland	80	55	Not specified
South Australia	80	45	45
Tasmania	80	n/a	70
Victoria	80	45	60
Western Australia	80	45	60

The minimum practicum requirement ranges from 80 days for a four-year undergraduate program to 45 to 55 for a 1-year graduate program and from 45 to 70 for an 18-month to 2-year graduate program. Although all teacher education programs have to meet the minimum requirement in the relevant state or territory in order to be accredited, the mapping component of this study (See Appendix 1) showed that many providers exceeded the required minimum number of practicum days. This was often informed and guided by the providers' philosophical goals and program outcomes. As noted above, when the teacher education mapping data was being collected for this study, the minimum number of supervised practicum days varied within and between states and territories. However, since then the Australian Institute for Teaching and School Leadership has provided national requirements:

> The professional experience component of each program must include no fewer than 80 days of well-structured, supervised and assessed teaching practice in schools in undergraduate and

> double-degree teacher education programs and no fewer than 60 days in graduate entry programs. (Australian Institute of Teaching and School Leadership, 2011a, p.15)

While these recent requirements might mean more practicum for some providers, and although many graduate teachers in this study expressed the need for more in-school experiences, what is more significant are the ways in which they described how the practicum could be better structured and delivered to provide optimal professional experiences that, in turn, support effective preparation for teaching. The quality and relevance of such experience is crucial in addressing the realities of today's increasingly complex and ever-changing school contexts (Le Cornu, 2010; Le Cornu & Ewing, 2008).

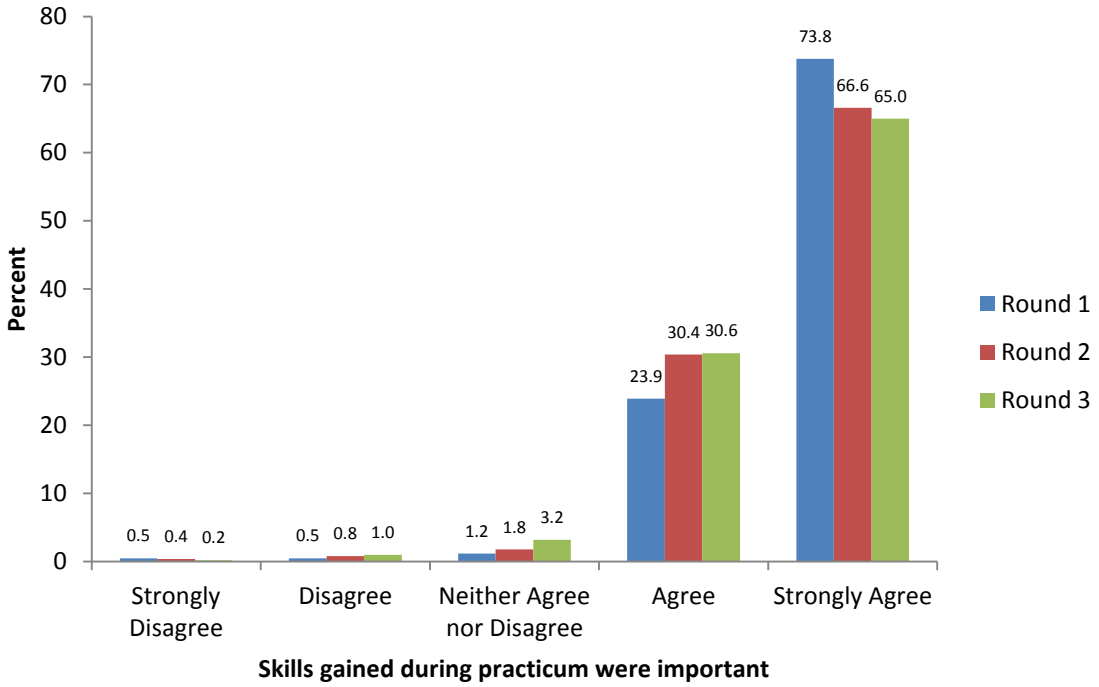
A different commitment is required to move from the notion of 'personally owned professional knowledge' (Le Cornu & Ewing, 2008, p.1803), to a more shared learning process where pre-service teachers, supervisors, peers and educators from schools engage in a reciprocal learning process to co-construct knowledge about teaching (Edwards & Mutton, 2007; Le Cornu & Ewing, 2008). This involves a shift from thinking about practicum as a linear relationship between supervisor and pre-service teacher to the notion of an integrated and participatory process of teaching and learning.

The Figure below shows graduates' views on the importance of their practicum for gaining skills. This question was asked of graduates with a teaching position in a school. It was measured on a five-point Likert scale of agreement from strongly disagree to strongly agree. In all three rounds, graduates almost all strongly agreed or agreed that the skills they gained during practicum were important:

- Round 1: 98 per cent
- Round 2: 97 per cent
- Round 3: 96 per cent

The percentage of teaching graduates who strongly disagreed or disagreed that the skills gained in practicum were important was approximately one per cent across all three rounds of surveys.

Figure 31. Graduate teachers with a teaching position – by their view of the importance of skills gained during practicum



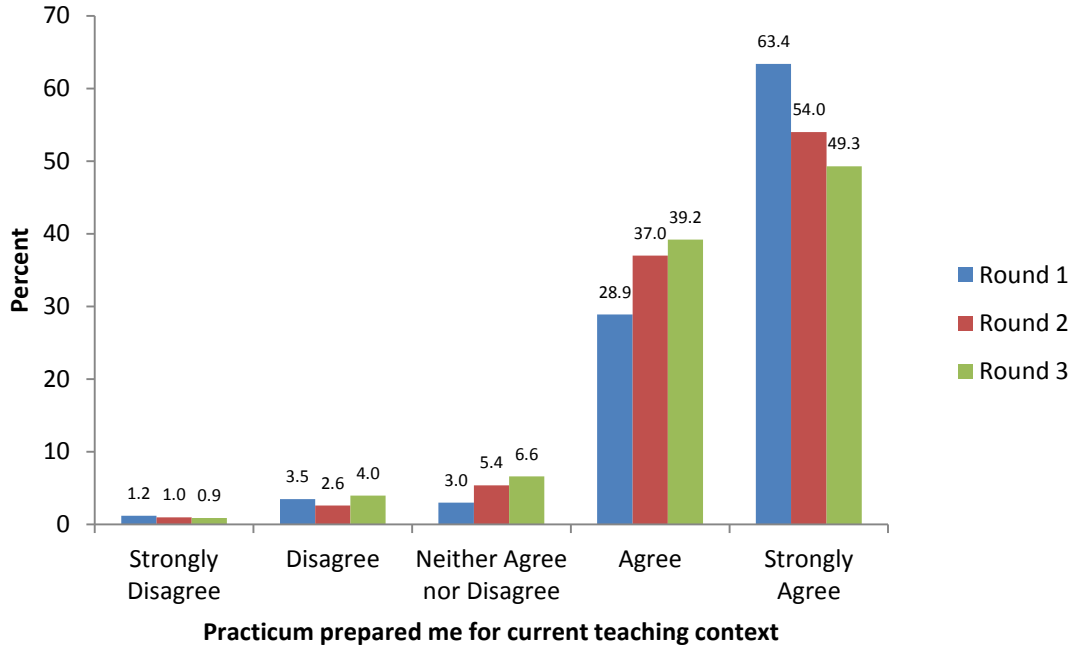
Note: 1. Round 1 n=932; Round 2 n=2,094; Round 3 n=1,713.

The Graduate Teacher Survey also asked graduate teachers currently teaching about the relevance of their practicum experience to their current teaching context. The results are shown in Figure below. The majority of graduate teachers either strongly agreed or agreed that their practicum prepared them for their current teaching context:

- Round 1: 92 per cent
- Round 2: 91 per cent
- Round 3: 89 per cent

The percentage of teaching graduates who strongly disagreed or disagreed that the skills gained in practicum helped prepare them for their current teaching context was approximately one per cent across all three rounds of surveys.

Figure 32. Graduate teachers with a teaching position – by their view of the relevance of practicum to current teaching context



Note: Round 1 n=932; Round 2 n=2,092; Round 3 n=1,721

These findings were echoed in the interviews, where graduate teachers talked about the teaching practicum as the most enriching part of their teacher education program (‘It was the most valuable learning in the course’*).* They described the value of the teaching practicum as ‘intangible’ and a valuable time to experience the realities of classrooms (‘You get to experience real teachers out in schools rather than just the 'ideal' situation that is represented in tutorials).

Round 2 of the Graduate Teacher Survey asked graduates currently teaching about the relevance of their university-based study to their current teaching. See Table 105 below. Sixty-five per cent of graduates either strongly agreed or agreed that their university-based units were relevant for their current teaching contexts. Only about 14 per cent of the graduate teachers strongly agreed that their university-based units of their teacher education program were relevant to their current teaching context. This has a much lower agreement level than the ‘strongly agree’ relevance of the practicum to current teaching contexts as noted above. The data shows that graduate teachers feel university-based units, though relevant, were less helpful in preparing them for their current teaching contexts, than their practicum experiences.

Table 105. Graduate teachers with a teaching position – by their view of relevance of university-based units to current teaching, Round 2 survey

The university-based units of my teacher education program help prepared me for my current teaching context	N	%
Strongly Disagree	61	2.9
Disagree	246	11.7
Neither Agree nor Disagree	418	20.0
Agree	1,074	51.3
Strongly Agree	296	14.1
TOTAL	2,095	100.0

In order to gauge 'adequate' classroom teaching, graduates were asked if they had been successful in influencing student learning in their current teaching position. The response was measured on a five-point Likert scale from strongly disagree to strongly agree. This was then cross-tabulated with the three different practicum components to see if the graduates' experiences of these practicum components had any effect on their perceptions of success in the classroom. The results are shown in the table below.

Table 106. Graduate teachers with a teaching position – by practicum component and perception of success in influencing student learning

In my current teaching position I have been successful in influencing student learning	Round 1 %	Round 2 %	Round 3 %
Practicum component: 1-2 days a week over an extended period			
Strongly disagree	0.8	0.2	0.2
Disagree	1.6	0.5	0.5
Neither agree nor disagree	15.9	10.1	5.2
Agree	51.8	63.8	59.8
Strongly agree	29.8	25.4	34.3
Practicum component: 5 days a week over 1 or more weeks (Block)			
Strongly disagree	0.2	0.1	0.1
Disagree	1.0	0.6	0.7
Neither agree nor disagree	17.5	11.6	5.9
Agree	50.6	63.9	58.8
Strongly agree	30.7	23.9	34.6
Practicum component: Internship			
Strongly disagree	0.0	0.0	0.2
Disagree	1.1	0.5	0.6
Neither agree nor disagree	16.1	9.6	6.7

Agree	48.7	67.9	56.2
Strongly agree	34.1	22.0	36.4

Note: 1-2 days a week: Round 1 n=245; Round 2 n=406; Round 3 n=440. Block: Round 1 n=871; Round 2 n=1,444; Round 3 n=1,227. Internship: Round 1 n=273; Round 2 n=427; Round 3 n=525

Each of the practicum components showed similar findings for graduates' perceptions of success in influencing student learning. So regardless of the practicum component type, the majority of graduates strongly agreed or agreed they had been successful in influencing student learning. Across all three survey rounds, in all three practicum components, the percentage who strongly disagreed or disagreed was at or below one per cent, except for one instance in Round 2 where it was two per cent. The only change across the three surveys rounds was the 'neutral' influence group, which decreased in size across the three surveys for all three practicum components.

Interviews and free text responses – graduate teachers and principals

The interviews with and free text responses from graduate teachers and principals provided a deeper understanding of the extent to which practicum was relevant for subsequent classroom teaching. The following aspects were raised:

- Coherent framework for practicum processes
- Diversity of practicum settings in schools and communities
- Leveraging School Partnerships and Professional Communities

Coherent framework for practicum processes

Interview responses stressed the need for effective practicum processes that enable the application of skills into practice. Graduate teachers and principals' responses suggest a coherent framework for practicum programs, structured with a combination of 1 to 2 days per week, block placements of 5 weeks duration, culminating in an internship at the final part of the program.

This framework for practicum teaching and learning works more effectively with school-university partnerships that can provide 'shared communities of learners' in the practicum experience:

> 'More practical time – not necessarily in whole day blocks however. Going in to a class in small groups and then reflecting on lessons would definitely be beneficial.'

- 'More frequent placements with the "2 days a week" model and then "blocks". More help from lecturers during this time with more visitation.'
- 'Longer placement e.g. throughout the whole year of my post-graduate … would have been happy to work in classroom for 1 to 2 days per week and then do some blocks. Think this learning for me would have been more beneficial.'
- 'Working closely with qualified mentor' as well as observing and engaging with exemplary teachers who can provide 'constructive feedback and valuable knowledge.'

Graduate teachers described significant practicum delivery enhancement that would better support their preparation for their current school contexts. Many felt that they would benefit from more practicum time *(*e.g. 'I honestly believe that more time needs to be spent in the classroom … more in class experience would allow for better prepared and experienced teachers'). However, important issues relate to the quality of the practicum

experience, more than the length of time in schools. Some universities provide pre-service teachers with the opportunities to micro teach in class before actual school placements and receive feedback from peers and university mentors on their teaching (Kazemi, Franke, & Lampert, 2009), while others do not. Other programs adopt a strong focus on an 'inquiry-oriented approach' (Zeichner, 1983) where pre-service teachers, on return to the universities, discuss and address classroom issues and challenges they faced or observed during school placements.

Other graduate teachers mentioned administrative difficulties relating to school placements *(*e.g. 'I had to organise my own and as most schools in my area were affiliated with another universities'). Some experienced difficulties in securing quality school placements with experienced mentors in the same subject disciplines as theirs. Pre-service teachers benefit from quality mentoring support in schools (See Box 14 below). This serves as a bridge between the theoretical knowledge about teaching (Philosophy of Education, Psychology, Sociology of Education) and practical knowledge of teaching (curriculum design and implementation, classroom management, teaching methods, assessment and evaluation) (Le Cornu & Ewing, 2008; White et al., 2010).

Diversity of practicum settings in schools and communities

Teaching is a complex and multifaceted activity. In interviews, graduate teachers highlighted the value of completing a variety of teaching experiences in diverse settings (e.g. *'More time spent in a diverse range of classrooms', 'better opportunities for diverse placements'*).

The central tenet of this issue lies in the need to prepare graduate teachers to learn in a range of settings that typify those in which teachers work. While the graduate teachers have an astute perception about what their teacher preparation can provide, their responses indicate the need for practical application of skills and knowledge in a range of settings, schools and communities, where they can draw on frames of reference or a developing repertoire of ideas to handle a range of issues. This is often perceived to be more effective in undergraduate degrees where the length and duration of the program allows for more flexibility and time for extending learning.

I think the planning for lots of learners, a fair diversity across the - you know the breadth of the classroom. I think I quite believe in schools as a social community so that really came with me - that sociological side of it and a lot of the understanding that came on board there during my studies.

Graduate teacher, part-time permanent, primary school

The challenges of coping with 'diversity in the classroom' are well documented. Similarly, the principals highlighted graduate teachers' lack of preparedness in diverse settings ('understanding of low SES communities', 'nature of rural students and catering to a broad range of learning needs within each class' and 'understanding of the curriculum model'*).* One principal spoke about the 'culture shock' that graduate teachers have when teaching in remote schools ('not acknowledging the context and living away from family in remote locations'). Others spoke of the lack of preparation in applying '*differentiation'* and translating 'various philosophies of teaching and pedagogical approaches into practical teaching strategies' that in turn have a bearing on student engagement and classroom behaviour.

Box 14. *An effective teacher needs to build rapport*

A Chinese Australian, Holly is teaching at a primary school in Sydney that caters for an ethnically diverse community, including children from China, Hong Kong, Taiwan, Thailand and Korea. She has been working as the ESL teacher at the school, looking after small groups of children in a support role that requires continual communication with their classroom teacher. She has been doing this for twelve months, while the ESL teacher has been on leave, and she has now secured another twelve-month position at the same school as a Kindergarten teacher, with a class of around 20 children. She came to the school with an appreciation of cultural diversity, but this has grown during the time that she has been teaching:

> *Yes, so I think cultural diversity is … a difficult thing but maybe something that you can … get as you grow and teach for a long period of time.*

Holly has been able to engage in rich professional learning, focusing on the teaching of grammar (or explicit language instruction with children from backgrounds other than English). In doing this, she has been building on a 'passion' that she first discovered when she was at university. There one of her lecturers provided an inspiring model for her as a committed language teacher. She has since maintained contact with this person, who visits her school regularly. Holly also draws inspiration from another university lecturer with respect to the role of drama in facilitating language and literacy development. Holly would like to think that in the future she will become known as someone who is very knowledgeable about language and grammar. This specialisation is at the heart of her sense of professional identity.

She has engaged in sustained professional learning during the time that she has been at the school, both through work with her peers – she cites her collaboration with a more experienced colleague in developing a unit of work designed to enrich students' language and literacy – and from her interactions with the children, where she has been very sensitive to issues of cultural difference. She also observes her colleagues teaching in their classrooms, partly because of her position as an ESL teacher in a support role, and she has learnt a lot from this, especially about the importance of establishing rapport with students and creating a classroom environment that supports their learning:

> *I do believe that a really good teacher, like an effective teacher needs to build rapport with their students first. To really get to know each of them and to develop a relationship with them and make them feel comfortable.*

She continually emphasises the quality of the support that she has received from colleagues at her school. She feels that she has played a role in the learning her students have experienced this year, though she is diffident about this, acknowledging the part that others have played. As ESL teacher, Holly is conscious of the need to tread gently when offering advice to other teachers about how best to support their students who come from backgrounds other than English. She has developed a refined sense of the complexities of negotiating interpersonal relationships within institutional settings.

Holly has a sense of what she will need to learn in the coming year in her efforts to take charge of a whole class of kindergarten students. She clearly sees her ongoing professional learning as integral to her growth as a teacher and her capacity to contribute to her school community.

Graduate teacher, full-time contract, primary school

Graduate teachers and principals' responses infer that classroom management is not something that can be taught and studied but needs to be put into action ('it's easy to talk about classroom management at university but when you're doing it, it's not about thinking about it. It's about implementing it and finding out really quickly what is … what does work and what doesn't'*)*. Effective approaches to this include structuring experiences in these settings with strong mentoring and supervision support.

Many wanted a range of quality practicum experiences in different types of school settings (e.g. 'more consideration or choice on what type of school chosen for practicum'*)*. Many would have liked more support and contact from their university supervisors (e.g. 'More contact with university lecturers/mentors on school rounds for advice and support'). They highlighted the importance of having strong mentoring support from both the university and their colleagues in schools. Some talked about the financial impost whilst on teaching practicum, especially in a final, often lengthier, practicum (e.g. 'Some form of wage for teachers in final practical. 12 weeks without pay is tough and a real deterrent to some people').

Leveraging School Partnerships and Professional Communities

School partnerships are favoured by many graduate teachers as a way of developing sustained and on-going professional learning, in real-world settings, to improve teacher effectiveness. One of the challenges in teacher education is the nature of the links between both university and school experiences.

Studies on effective practicum programs highlight the strong university-school partnerships that help pre-service teachers work reflexively to shape and improve their practical teaching skills (e.g. Darling-Hammond & Bransford, 2005; Elmore, 2002; Ramsey, 2000). The *Effective and Sustainable University–School Partnerships* Report (Kruger, Davies, Eckersley, Newell, & Cherednichenko, 2009) concluded that effective partnerships between schools and universities are achieved by 'working together' based on three conditions:

- A focus on ***Trust*** between the pre-service teachers, peers, and educators bringing together expertise, and to be committed in partnership with a shared recognition of each other's roles and expectations.
- Working in ***Mutuality*** with one another collaboratively towards a shared goal that benefits each stakeholder – the pre-service teachers in developing teaching expertise, and the value added to schools, universities and communities from this process of partnership.
- Developing relationships based on ***Reciprocity*** where each stakeholder recognises and values the experiences, knowledge and expertise that others bring to this process.

Many graduate teachers highlighted the need for more collaboration and contact between universities and schools.

- 'The university needs to establish better partnerships with local and rural schools'
- 'Stronger partnerships with schools, so that teacher training was also part of the ongoing life of a school, part of every day, not just part of a disconnected university'
- 'Partnerships should be established between the universities and the local schools to enable more regular observation and other opportunities to participate in broad range of school life.'
- 'Ongoing practical experience throughout the course, by way of school partnerships/ or mentoring.'

- 'More help making partnerships with schools so student teachers can be involved more often with schools and not just in a single block.'
- 'There needs to be a stronger relationship between the university and schools. Time in classrooms must be increased, experiencing different learning areas, age groups, cultural groups and schools.'

From the mapping data, 'community partnerships' and 'school-university partnerships' were nominated by many teacher education providers as key distinguishing features of their programs. The majority of teacher education providers have developed partnerships models with schools or school clusters to increase school contact and to improve the quality and effectiveness of professional experience. However, costs and the difficulties in finding partner schools to work with are issues raised by many teacher education providers.

Interviews with the providers' representatives revealed further insights into some of these school partnership initiatives. Some use a cluster-school approach, placing students in schools located within a confined geographic area. Others focus on providing opportunities for pre-service teachers to experience the work of teachers in a range of diverse settings. This also includes practical experience in remote Australian Aboriginal and/or Torres Strait Islander schools and communities, as well as in international contexts. Other institutions integrate action research and learning partnerships with community agencies to prepare pre-service teachers for the wider community issues. These innovative approaches strengthen theory and practice linkages, drawing the nexus between theory, knowledge and practice. See Appendix 1: Section 4.4 for more case examples of school-university partnerships from the mapping of initial teacher education programs.

Current research demonstrates that a central factor in the ability of graduate teachers to develop professional learning and growth in their early years of their career is that their practicum programs manifest features of professional learning communities (Cochran-Smith, 2003). Learning partnerships in professional conversations are the focus of learning communities. The research reports that professional conversations in successful partnerships are coherently planned, organised and supported in teaching practicum programs (Darling-Hammond, 2006b; Le Cornu, 2010; McLaughlin & Black-Hawkins, 2007).

Overall, the survey and interview data show that graduate teachers value the practicum as an important part of their teacher education experience and feel that it is relevant for their current teaching context. More than 96 per cent of graduate teachers agree with the importance of their practicum for gaining skills for the classroom and the practicum experiences were seen as more helpful in preparing them for their current teaching contexts as compared to university-based units of their teacher education programs. Clearly, the practicum is a highly valued part of the teacher education experience. The interviews and free text responses revealed deeper understanding about the quality of the practicum experiences and the extent to which these processes can be further improved to enhance graduates skills and knowledge for teaching.

As expressed by the graduate teachers, the quality of practicum experiences matters, and suggestions for enhancement include building a coherent framework for practicum structures that provide a combination of 1 to 2 days per week, block placements of 5 weeks duration and an internship at the final part of the program, sustained classroom experience in schools, and mentoring support. Graduate teachers responses also suggest the benefit of preparing teachers to teach and learn in a diverse range of settings, fostering these opportunities through strong school-university partnerships in ways that develop shared communities of learners in building sustained professional learning. Effective practicum programs provide pre-service teachers with extensive time throughout the program to 'learn to practice *in* practice' (Darling-Hammond, 2010). In this way, pre-service teachers are

viewed as active learners of their practice, engaging in reflective conversations towards their teaching in the social contexts they teach.

4.6 Discipline Areas Studied and then Taught in Schools

Section 3.2 discussed the utilisation of graduate teachers across teaching areas. This section examines their qualifications to teach in a specialist area and the extent to which teachers actually teach the subjects they studied, longitudinally across all three survey rounds. It specifically focuses on secondary graduate teachers with a teaching position, and who are teaching in their specialist discipline areas.

Darling-Hammond and Bransford (2005) highlighted the balance of discipline-based knowledge and pedagogy in effecting successful teaching and learning in the classroom. The literature reminds us that a strong discipline-based knowledge preparation is important but not sufficient for teaching. Effective teacher education programs usually try to integrate curriculum studies, discipline-based knowledge and pedagogy in a dynamic relationship that promotes practical inquiry and reflection (Darling-Hammond, 2006b; Department of Education (DfE), 2010; Menter, Hulme, Elliot, & Lewin, 2010).

Box 15 lists the main findings for Section 4.6.

Box 15. Main Findings: Disciplines studied and then taught in schools

- There was an increase in secondary graduate teachers teaching in their specialist area for most specialisations from their first year after graduation to their second year of teaching, except for science, technology, health and physical education and special needs. The largest increase was in society and the environment, from 13 to 16 per cent. This corroborates with earlier findings on all graduate teachers teaching in specialist area in Section 3.2.1.
- In all rounds, there was no significant difference between program types in the mean scores for preparation or effectiveness in discipline-based expertise.
- There was no significant difference between males and females in their effectiveness in teaching in the area of specialist expertise although females were significantly more likely to agree they were prepared in their discipline-based expertise than males in the Round 2 survey.

In each of the three Graduate Teacher Surveys, only those graduates who were currently teaching were asked if they had qualifications to teach in a specialist area. To recall, the number and percentage of respondents who were employed as a teacher in a school at the time of each survey is as follows:

- Round 1: 980 respondents employed as a teacher – 74 per cent of all respondents
- Round 2: 2,217 respondents employed as a teacher – 85 per cent of all respondents
- Round 3: 1,830 respondents employed as a teacher – 84 per cent of all respondents

Table 107 below shows the number and percentage of respondents in each of the three surveys who indicated they were employed as a teacher and their main area of teaching.

Table 107. Graduate teachers with a teaching position – by main area of teaching

	Round 1		Round 2		Round 3	
	N	%	n	%	n	%
Early Childhood	38	3.9	85	3.8	62	3.4
EC/Primary	62	6.3	124	5.6	109	6.0
Primary	356	36.3	804	36.3	637	34.8
Prim/Secondary	80	8.2	209	9.4	157	8.6
Secondary	423	43.2	894	40.3	719	39.3
Other	10	1.0	-	0.0	13	0.7
Not stated	11	1.1	101	4.6	133	7.3
Total Secondary	503	51.4	1,103	49.7	876	47.9
TOTAL	980	100.0	2,217	100.0	1,830	100.0

The group of respondents of particular interest, when looking at specialist area qualifications, are secondary teachers: 51.4 per cent of all respondents in Round 1, 49.7 per cent in Round 2 and 47.9 per cent in Round 3. The data in following three sub-sections will report on these respondents only.

4.6.1 The relationship between the discipline area studied and the extent to which graduates enter, and remain in, teaching.

The following data report on respondents whose main area of teaching is secondary and who have employment as a teacher in a school. The table below shows the dataset by the discipline areas in which they have qualifications to teach.

Table 108. Graduate teachers currently teaching whose main area of teaching includes secondary – by discipline area in which they have qualifications to teach

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
English	122	24.3	193	17.5	189	21.6
Mathematics	49	9.7	92	8.3	128	14.6
Society and the Environment	187	37.2	262	23.8	241	27.5
Science	154	30.6	257	23.3	180	20.5
The Arts	108	21.5	179	16.2	157	17.9
LOTE	33	6.6	60	5.4	69	7.9
Technology	65	12.9	107	9.7	96	11.0
Health & PE	85	16.9	151	13.7	106	12.1
Special needs	4	0.8	14	1.3	19	2.2
Other	11	2.2	22	2.0	4	0.5
Not stated	65	12.9	395	35.8	-	0.0
TOTAL	503		1,103		876	

Note: Numbers do not add to the total, percentages do not total 100, as respondents were able to select two specialist areas in Rounds 1 and 2, and up to 10 areas in Round 3. As Round 3 collected data on specialist areas in a different format from Rounds 1 and 2, results should be treated with caution.

In Round 1, of the respondents who indicated they were secondary trained and had a teaching position, 37.2 per cent of them had qualifications to teach in society and the environment. Science had the next largest percentage

of these graduate respondents, with 30.6 per cent. The hard-to-staff area of mathematics had 9.7 per cent of teaching secondary graduates with this qualification specialisation and LOTE had 6.6 per cent.

In Round 2 there was a large percentage of secondary trained teaching respondents who did not indicate their area of specialisation (35.8 per cent). In Round 3, the largest percentage of these respondents had qualifications to teach in society and the environment (27.5 per cent), followed by English (21.6 per cent). Mathematics had 14.6 per cent, LOTE 7.9 per cent and technology 11 per cent.

The following looks at the secondary trained graduate teacher respondents over time/ longitudinally. To recall, we look at two groups of graduate teachers over time for analysis longitudinally:

- *Cohort 1*: A group of *679 graduate teachers* for whom we can follow their teacher employment status from **Round 1 to Round 2**. Cohort 1 data show changes over the six-month period from March to October 2012.

- *Cohort 2*: A group of *1,050 graduate teachers* for whom we can follow from **Round 2 to Round 3**. These graduate teachers are known as Cohort 2. Cohort 2 data show changes over the six-month period from October 2012 to March, 2013.

- *Cohort 3:* A group of *544 graduate teachers* for whom we can follow their teacher employment status from **Round 1 to Round 3**. Cohort 3 data show changes over the 12-month period from March 2012 to March, 2013.

The table below shows that for secondary trained graduate respondents, employment as a teacher in a school rose for Cohort 1 by 10.1 per cent for those with secondary training only and by 14.6 per cent for those with primary and secondary training. Employment levels remained fairly similar for Cohort 2, which takes into account changes from October 2012 to March 2013 – the end of their first year of teaching and the beginning of their second year.

Table 109. Graduate teachers' main area of teacher education program – by employment as a teacher in a school, Cohorts 1 and 2

Program area	Cohort 1 Round 1 %	Cohort 1 Round 2 %	Change %	Cohort 2 Round 2 %	Cohort 2 Round 3 %	Change %
Teaching in a school						
Early Childhood	72.0	92.0	+20.0	93.8	93.8	0.0
EC/Primary	66.7	91.9	+25.2	76.4	85.5	+9.1
Primary	73.7	90.1	+16.4	87.8	86.5	-1.3
Primary/Secondary	65.7	80.3	+14.6	87.1	84.9	-2.2
Secondary	75.2	85.3	+10.1	83.3	81.2	-2.1
Other	-	-		100.0	100.0	0.0
TOTAL	73.2	87.2	+14.0	85.3	84.2	-1.1

Note: Cohort 1 n=679; Cohort 2 n=1,050

Table 110 below shows that for secondary trained graduate respondents, employment as a teacher in a school rose by 5.9 per cent from the beginning of their first year to the beginning of their second year of teaching for those with secondary training only, and by 8.1 per cent for those with primary and secondary training.

Table 110. Graduate teachers' main area of teacher education program – by employment as a teacher in a school, Cohorts 1 and 2

Program area	Round 1 %	Cohort 3 Round 3 %	Change %
Teaching in a school			
Early Childhood	68.4	89.5	+21.1
EC/Primary	64.0	84.0	+20.0
Primary	73.6	86.9	+13.3
Primary/Secondary	73.5	81.6	+8.1
Secondary	71.1	77.0	+5.9
Other	50.0	100.0	+50.0
TOTAL	71.8	82.1	+10.0

Note: Cohort 3 n=544

Table 111 below shows secondary graduates who have a teaching position. It shows this group by their specialist area qualifications, and the percentages who were teaching in their specialist area or teaching outside of their specialist area.

Table 111. Secondary graduate teachers currently teaching who participated in more than one LTEWS Graduate Teacher Survey – by whether or not teaching in their specialist areas

	Cohort 1		Cohort 2		Cohort 3	
	Round 1	Round 2	Round 2	Round 3	Round 1	Round 3
	%	%	%	%	%	%
Teaching in specialist area						
English	14.3	11.6	10.1	14.5	14.4	14.8
Mathematics	7.9	7.5	4.6	10.0	5.3	11.2
Society and the Environment	8.6	7.2	7.2	16.7	13.0	16.1
Science	14.6	12.5	9.7	14.5	14.4	13.2
The Arts	11.8	9.7	8.2	10.8	11.1	12.5
LOTE	4.3	3.4	3.2	4.9	2.9	3.3
Technology	6.1	5.0	4.4	6.5	6.7	6.2
Health & PE	5.7	5.6	4.8	6.2	5.8	5.3
Special needs	0.4	0.3	0.8	1.1	0.5	0.3
Other	1.4	1.6	1.3	0.2	1.4	0.0
Not stated	0.0	0.9	0.0	0.0	0.0	0.0
Teaching outside specialist area						
English	0.7	0.3	0.6	2.4	1.4	3.3
Mathematics	0.0	0.0	0.0	0.8	0.0	0.3
Society and the Environment	2.1	1.9	1.1	3.0	2.9	4.6
Science	4.6	2.8	3.4	1.6	3.8	2.3
The Arts	1.8	1.6	1.3	1.8	2.4	2.0
LOTE	1.8	0.9	0.2	0.8	0.5	1.3
Technology	0.7	0.6	0.4	1.1	1.0	1.0
Health & PE	1.4	1.3	1.1	1.9	1.0	1.6
Special needs	0.0	0.0	0.0	0.5	0.0	0.3
Other	0.0	0.0	0.0	0.5	0.0	0.3
No specialist area	11.8	25.3	0.0	0.0	0.0	0.0
TOTAL	100.0	100.0	100.0	100.0		

Note: Cohort 1: Round 1 n=280. Round 2 n=320; Cohort 2: Round 2 n=475, Round 3 n=467; Cohort 3: Round 1 n=208, Round 3 n=227

For *Cohort 1*, there was a large percentage of secondary trained teaching respondents who did not indicate their area of specialisation in Round 2 (25.3 per cent), therefore all specialist areas show a decrease in the percentage of respondents teaching in them. This may not actually have been the case had there been more respondents who indicated their specialisation.

For *Cohort 2*, there was an increase in the percentage of secondary graduates teaching in their specialist area for all specialisations. The largest increase was in society and the environment, from 7.2 per cent of Cohort 2 at the end of 2012, to 16.7 per cent at the beginning of 2013. There was also an increase of those with a specialisation in English who were teaching outside their specialist area, from 0.6 per cent at the end of 2012, to 2.4 per cent in 2013.

For *Cohort 3*, there was an increase in the percentage of secondary graduates teaching in their specialist area for most specialisations, except for science, technology, health & physical education and special needs. The largest increase was again in society and the environment, from 13 to 16.1 per cent. As with Cohort 2, the largest increase of those teaching outside their area of specialisation was English, from 1.4 per cent at the beginning of respondents' first year of teaching, to 3.3 per cent at the beginning of their second year.

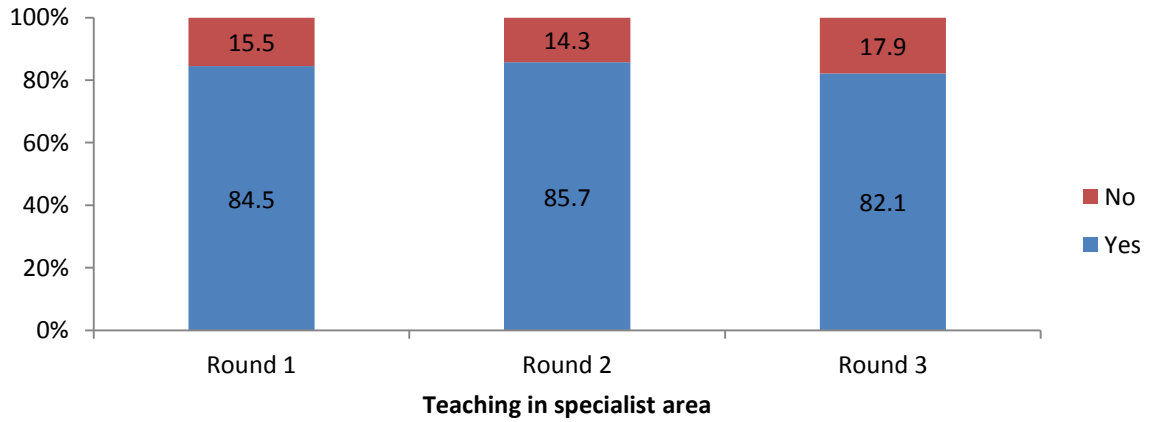
The low percentages of teaching secondary graduates who are specialists in mathematics and LOTE could be due to the persistent shortages of qualified teachers in secondary schools subjects such as mathematics. The Productivity Commission Report (2012) reports on the workforce subject-based shortage of teachers in mathematics, science, technology, languages including English, and in the area of special needs. The Staff in Australia's Schools survey 2010 (McKenzie et al., 2011) estimated that there were up to 400 unfilled positions for mathematics teachers in secondary schools, and that 8 per cent of schools had a vacancy for these positions. The Australian Council of Deans of Science (Harris & Jensz, 2006) reported falling numbers of students undertaking tertiary mathematics and the reduction of mathematics faculty staff in Australian universities.

From this data, it can be inferred that many of the secondary graduate teachers were teaching 'out-of-field' in subjects such as mathematics, technology and LOTE. It must be noted, however, that these figures should be interpreted with care given a proportion of respondents who did not complete this information. Despite recent program initiatives to increase the supply of teachers in these areas (e.g., Career Change Program in Victoria and the Step into Teaching Scholarships to support high achieving science and mathematics graduates to teach in state high schools. and the Australian Government's teaching scholarships program to attract highly qualified mathematics and science graduates into school-based programs), this shortage remains a challenge as principals rely on 'out-of-field' teachers to teach mathematics in their schools. Other reports have similarly reported on the crisis of out-of-field teaching (Australian Association of Mathematics Teachers, 2006; Education and Training Committee, 2006; Harris & Jensz, 2006; Vale, 2010).

4.6.2 The extent to which graduates who enter teaching teach the subject disciplines they studied in teacher education programs

This section again focuses on secondary trained graduates with formal qualifications in a specialist area – this includes middle school (primary/secondary) and secondary teachers. The Figure below shows secondary graduates with a teaching position who have a qualification to teach in a specialist area, by the percentage who are teaching in their specialist area. We can see that across the three surveys, between 82 to 86 per cent are teaching in their area of specialisation.

Figure 33. Secondary graduate teachers with a teaching position who have a specialist qualification – by currently teaching in their specialist area



Note: Round 1 n = 441; Round 2 n=707; Round 3 n=676)

Table 112 below investigates this data further, and shows the number of these graduates who have qualifications to teach in each of the specialist areas and the percentage who are teaching in these areas.

Table 112. Secondary graduate teachers with a teaching position who have a specialist qualification – by currently teaching in a specialist area

	Round 1		Round 2		Round 3	
Specialist area	No. with qualifications	Teaching in this area %	No. with qualifications	Teaching in this area %	No. with qualifications	Teaching in this area %
English	123	89.5	198	92.2	189	95.8
Mathematics	49	100.0	93	98.0	128	117.2
Society and the Environment	190	81.0	271	79.5	241	68.0
Science	156	79.8	264	74.8	180	90.0
The Arts	109	85.3	182	86.8	157	69.4
LOTE	36	77.8	63	92.5	69	91.3
Technology	65	87.9	110	90.2	96	103.1
Health & PE	85	79.6	152	84.9	106	76.4
Special Needs	4	100.0	14	100.0	19	273.7

Other	11	100.0	22	76.9	4	150.0
Not stated	3	-	1	-	-	
TOTAL	441	84.5	707	85.7	676	82.1

The specialist area with the largest number of respondents in Round 1 is society and the environment (190) followed by science (156). The 'hard to staff' specialist areas show mathematics with 49, LOTE with 36, technology with 65 and special needs with 4. It must be noted here that the majority of graduate respondents with qualifications to teach in Special Needs are at the primary level, so this Figure of 4 does not include them. As the percentages show, the specialist areas with the highest uptake includes mathematics and special needs (both 100 per cent).

Round 2 also had the largest number of secondary graduates with qualifications in society and the environment (271) and science (264). The highest uptake of specialist trained graduates was again in mathematics and special needs. In Round 3, society and the environment had the largest number (241) followed by English (189). The uptake for mathematics, technology and special needs exceeded the number of graduates in these areas (117.2 per cent, 103.1 per cent and 273.7 per cent, respectively), which means there are graduate respondents who were teaching in these areas without qualifications that match that specialist area.

From the data, it is clear that for ‘hard to staff’ subjects such as mathematics and special needs, graduate teachers who are qualified in these areas teach in their specialist areas. At the same time, the findings, in all three rounds, showed that these teaching areas have one of smallest number of secondary graduates with qualifications.

4.6.3 The extent to which the discipline areas studied in teacher education programs were adequate in content and relevance for subsequent classroom teaching

Analysis of the survey data, along with the mapping and interview data, contribute to the discussion in this section. Broad findings from the initial teacher education mapping frame the discussion:

- All programs have to meet the standards of the appropriate regulatory authorities in order to be accredited (See below for the states' requirements on discipline studies).
- Most teacher education providers require pre-service teachers to undertake at least two years in disciplinary subject(s).
- There is general emphasis on preparing pre-service teachers to acquire strong subject-based knowledge, incorporating the discipline-based grounding in the initial part of the program.
- For most teacher education providers, discipline-based subjects are conducted by other faculties in the institution.
- For primary teaching, most teacher education providers require pre-service teachers to undertake key discipline-based units in conjunction with curriculum studies for all key learning areas in line with the requirements of the teacher registration authorities.

In general, it is required that discipline studies should be of sufficient depth and (a) related teaching methodology studies to cover the primary school curriculum or (b) at least one but preferably two subject areas in the secondary school curriculum.

In Table 113, respondents were asked to indicate their level of agreement on whether their teaching in a specialist area was effective, from strongly disagree to strongly agree on a five-point Likert scale. Approximately 80 per cent of graduate teachers and principals agreed and strongly agreed that their teaching in a specialist area was effective, in both Rounds 2 and 3.

Table 113. Secondary graduate teachers with a teaching position and their principals – by level of agreement that their teaching in a specialist area is effective

	Round 2		Round 3	
	n	%	n	%
Graduates				
Strongly disagree	3	0.3	4	0.5
Disagree	43	4.0	20	2.4
Neither agree nor disagree	197	18.5	149	18.0
Agree	617	58.0	481	58.1
Strongly agree	203	19.1	174	21.0
Total	1,063	100.0	828	100.0
Principals				
Strongly disagree	8	2.2	4	1.2
Disagree	27	7.5	13	3.8
Neither agree nor disagree	56	15.6	43	12.6
Agree	172	48.0	183	53.8

Strongly agree	95	26.5	97	28.5
Total	358	100.0	340	100.0

Note: Principal responses are on individual teachers, and include teachers from all school levels (primary, secondary and combined)

Table 114 compares the mean scores on the each of the statements across the three rounds of surveys. The decrease in agreement on the preparation statement is shown clearly here in the mean scores.

Table 114. Comparison of mean for preparation and effectiveness in specialist area expertise

	Round 1		Round 2		Round 3	
	Mean	SD	Mean	SD	Mean	SD
Preparation for:						
Specialist area expertise	3.83	0.957	3.27	1.071	3.18	1.131
Effective in:			3.92	0.746	3.97	0.728
Specialist area expertise						

An independent-samples t-test was conducted to compare the means in preparation for teaching and effectiveness in teaching in a specialist area of expertise by gender. The results are shown in the table below.

There was a significant difference in the scores for male and female preparation in Round 2, with females significantly more likely to agree they were prepared than males. Specifically, the results suggest that in Round 2, female respondents felt their teacher education program better prepared them in specialist area expertise than did male respondents. For the other two rounds there was no significant difference between the gender, nor was there any significant difference between males and females in their effectiveness in teaching in the area of specialist expertise.

Table 115. Comparison of mean for preparation and effectiveness in specialist area expertise – by gender

	Round 1		Round 2		Round 3	
Specialist area expertise	Mean	SD	Mean	SD	Mean	SD
Preparation						
Males	3.69	1.051	3.17	1.085	3.11	1.101
Females	3.88	0.914	3.31	1.063	3.21	1.143
Effectiveness						
Males			3.94	0.764	4.01	0.655
Females			3.91	0.739	3.95	0.756

Note: Round 1: Males n=134, Females n=348; Round 2: Males n=323, Females n=740; Round 3: Males n=246, Females n=582 Preparation *p* value: Round 1 p=0.059; Round 2 p=0.042; Round 3 p=0.243 Effectiveness *p* value: Round 2 p=0.473; Round 3 p=0.223

A one-way between subjects ANOVA was conducted to compare the means in preparation for teaching and effectiveness in teaching in specialist area of expertise by program type. The results are shown in the table below. In all three surveys, there was no significant difference between program types in the mean scores for preparation or effectiveness in specialist area expertise (See Appendix 11 for the margin of errors).

The interview and survey free text responses showed that graduate teachers are increasingly aware of the contextualised nature of their teaching as they progresses into their second year post-graduation, taking into consideration the institutional framework of schools and communities in impacting on their teaching effectiveness. In retrospect, responses from the free text question 'What do you like to see changed in teacher education' illustrated the concern of strengthening the linkages between discipline-based expertise and curriculum strategies in order to foster stronger practical application to impact on student learning:

- 'More subjects that are actually related to teaching and the classroom.'
- 'More focus on numeracy and literacy concepts and how to teach them specifically.'
- 'A lot of the subjects weren't at all practical, and our most valuable lecturers were the ones who were or had been teachers.'
- 'Far too much emphasis is placed on the University Degree rather than the practical application of the profession. Far greater 'on the job' training would be more beneficial than completing subjects of different names but rehashing the same content.'
- 'I felt that the practical components of my course provided me with excellent preparation. The university based subjects I found did little to support me in my early years as a teacher and certainly not in the setting I found myself in.'
- 'More practical based subjects'
- 'I would like to see University subjects selected to better represent the 'real' teaching world.'

The notion of the lack of coherence between discipline expertise and pedagogical knowledge was also echoed in the principals' responses:

- 'Lack of confidence with content and specific subject area pedagogical knowledge'
- 'A solid grounding in curriculum knowledge and a range of pedagogical practices which they can build upon.'

4.7 Preparation to Teach Culturally, Linguistically and Socio-Economically Diverse learners, ICT, and Numeracy and Literacy

In addition to the general domains that comprise the Australian Professional Standards for Teachers, LTEWS investigated whether graduates' initial teacher education adequately equipped them to address the challenges they faced in their first year of teaching in three specific areas, namely:

- Teaching culturally, linguistically and socio-economically diverse learners
- Use of ICT
- Literacy and numeracy

Section 4.6 examines graduates' perceptions of their preparation and effectiveness in these three areas and the extent to which preparation in these areas influenced their decisions to seek teaching employment, and the school in which they work.

Box 16 lists the main findings of Section 4.7.

Box 16. Main Findings: Preparation to teach culturally, linguistically and socio-economically diverse learners, ICT, and numeracy and literacy

- Only about half of the graduate teachers felt well prepared in the three areas of 'Teaching culturally, linguistically and socio-economically diverse learners', 'Use of ICT', with slightly more feeling well prepared in 'Numeracy and Literacy'. Preparedness in these areas was rated lower than for the seven areas of the Australian Professional Standards for Teachers. Graduates felt least prepared to 'Teach culturally, linguistically and socio-economically diverse learners'. It is noteworthy, that in surveys and interviews they recorded experiencing significant professional learning in this area during their first year of employment.

- Graduates considered that they were more effective in teaching than they had been prepared for in relation to the three areas of 'Teaching culturally, linguistically and socio-economically diverse learners', 'Use of ICT' and 'Literacy and numeracy'. More than 70 per cent of the graduates considered that they were effective in these specified areas.
- Principals' level of agreement with being effective as a teacher in these areas was much higher than respondents' agreement that their teacher education programs prepared them in these areas.
- There was no relationship between graduates feeling well prepared for 'Teaching culturally, linguistically and socio-economically diverse learners', 'Using ICT', and in 'Numeracy and literacy' and the type of school in which graduates were employed, the geographic location of their school or whether or not the school in which graduates were employed was an Aboriginal and Torres Strait Islander focus school.

4.7.1 The extent to which preparation in these areas appears associated with graduates who seek and obtain teaching employment and the school in which they work

Graduates' perceptions of their preparedness in key areas of teaching (teaching culturally, linguistically and socio-economically diverse learners; ICT; and numeracy and literacy)

The surveys asked graduates to say how well they felt their teacher education program prepared them in these key areas. Table 116 shows the results of graduates' level of agreement with the statements about preparation for teaching in these areas. These questions were only asked of those respondents who were currently teaching.

Table 116. Graduate teachers – by level of agreement that teacher education programs prepared them in key areas of teaching

Preparation for:	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 1					
Teaching culturally, linguistically and socio-economically diverse learners	2.2	12.4	34.7	43.1	7.6
Use of ICT	6.6	15.4	16.4	43.2	18.4
Literacy and numeracy	2.8	9.5	24.4	47.2	16.1
Round 2					
Teaching culturally, linguistically and socio-economically diverse learners	3.0	17.6	24.6	44.7	10.0
Use of ICT	4.9	16.1	21.8	44.5	12.7
Literacy and numeracy	2.5	11.0	21.9	50.9	13.7
Round 3					
Teaching culturally, linguistically and socio-economically diverse learners	4.2	17.9	26.5	42.1	9.3
Use of ICT	6.3	18.2	22.4	40.6	12.6
Literacy and numeracy	3.9	13.0	19.7	51.4	12.0

Note: Round 1 n=935; Round 2 n=2,099; Round 3 n=1,727

All three areas had over 50 per cent of graduate teachers agreeing or strongly agreeing they felt well prepared by their teacher education programs, but this level of agreement was much lower than for the seven areas of the Australian Professional Standards for Teachers (See Section 4.3 Content and relevance of teacher education programs for subsequent classroom teaching). Literacy and numeracy preparation had the highest level of agreement of the three areas, with 63 per cent agreeing or strongly agreeing their programs prepared them in this area in Rounds 1 and 3, and 64.6 per cent in Round 2. Preparation to teach culturally, linguistically and socio-economically diverse learners had the lowest percentage of agreement of the three areas. In Round 1, this was 50.7 per cent, Round 2 .54.7 per cent and Round 3, 51.4 per cent.

The percentage of disagreement with preparation in the three areas rose over the three rounds of surveys. In Round 1, 14.6 per cent disagreed or strongly disagreed that their teacher education program prepared them to teach culturally, linguistically and socio-economically diverse learners. In Round 2 this had risen to 20.6 per cent and in Round 3 it was 22.1 per cent. The area with the highest percentage of disagreement (i.e. disagreed or

strongly disagreed) about teacher education program preparation was in the use of ICT, which in Round 3 was 24.5 per cent.

However, in addition to asking how well their teacher education programs had prepared them to handle these three areas of teaching, graduates were asked how effective they felt they were within these areas, and this produced a markedly different impression of how they were faring.

Graduates' perceptions of their effectiveness in key areas of teaching (teaching culturally, linguistically and socio-economically diverse learner, ICT, and numeracy and literacy)

Table 117 below shows the results of graduates' level of agreement with the statements about being effective as teachers in these areas.

Table 117. Graduate teachers – by level of agreement that they are effective in key areas of teaching

Effective in:	Strongly disagree %	Disagree %	Neither agree nor disagree %	Agree %	Strongly agree %
Round 2					
Teaching culturally, linguistically and socio-economically diverse learners	0.3	5.0	23.8	54.4	16.4
Use of ICT	0.2	3.7	16.6	52.4	27.2
Literacy and numeracy	0.3	1.8	14.4	63.3	20.2
Round 3					
Teaching culturally, linguistically and socio-economically diverse learners	0.3	3.9	21.0	57.4	17.4
Use of ICT	0.2	3.6	12.9	54.8	28.5
Literacy and numeracy	0.1	1.9	13.3	63.9	20.8

Note: Round 2 n=2,099; Round 3 n=1,727

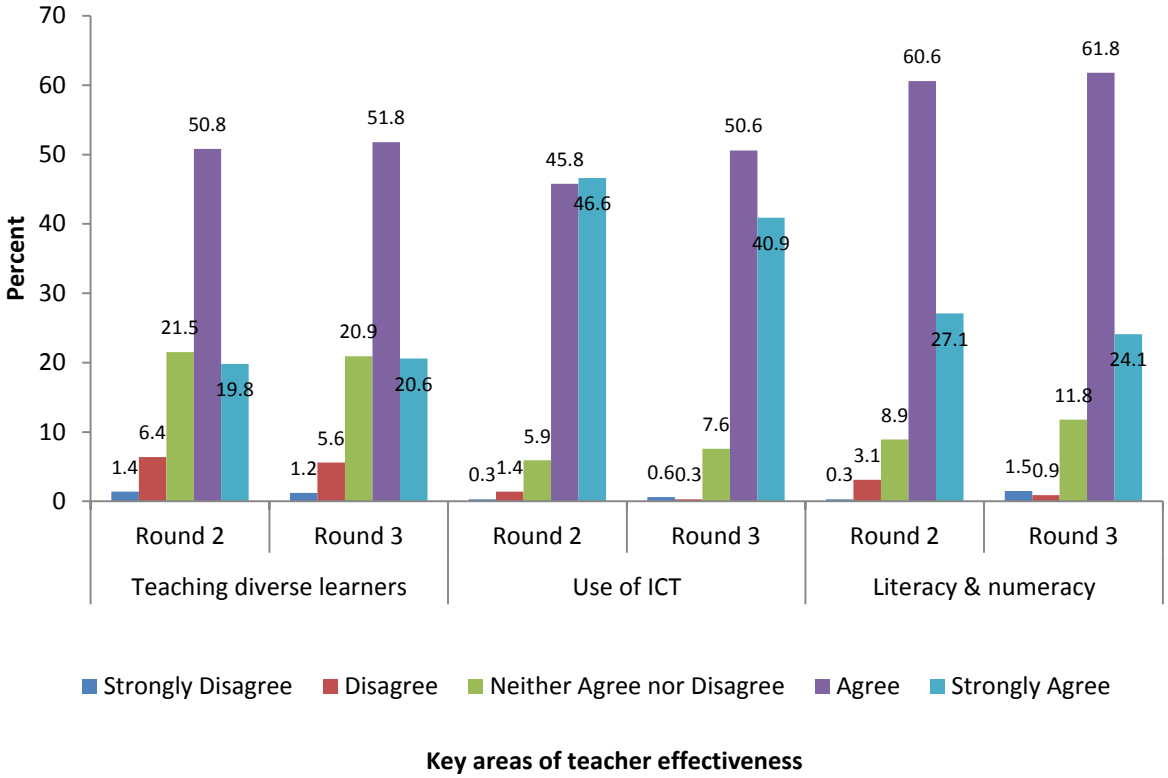
The level of agreement with being effective as a teacher in these areas is much higher than respondents' agreement that their teacher education programs prepared them in these areas. This finding corroborates the findings for the level of preparation and effectiveness of the seven National Standards in Section 4.2.4 where graduate teachers rated their effectiveness higher than the preparedness in these key teaching areas.

Literacy and numeracy had the highest level of agreement (i.e. the percentage of those who agreed or strongly agreed) that they were effective in this area: 83.5 per cent in Round 2 and 84.7 per cent in Round 3. There was a very small percentage of respondents who disagreed (i.e. disagreed or strongly disagreed) they were effective in these three areas, with teaching culturally, linguistically and socio-economically diverse learners having the highest percentage of disagreement, which was 5.3 per cent in Round 2 and 4.2 per cent in Round 3.

Principals' perceptions of graduates' effectiveness in key areas of teaching (teaching culturally, linguistically and socio-economically diverse learners; ICT; and numeracy and literacy)

With these results in mind, it is useful to note how principals perceived the effectiveness of graduates in these three key areas. Figure 34 below shows their responses to questions about the effectiveness of their graduate teachers in these areas.

Figure 34. Principals' views of the effectiveness of individual graduate teachers in key areas



Note: Round 2 n=358, Round 3 n=340

These responses show that principals saw the majority of graduate teachers as being effective in these three key areas. The area with the greatest percentage of agreement (i.e. agree or strongly agree) on graduate teacher effectiveness is 'Use of ICT', with 92 per cent in both Rounds 2 and 3.

The key area with the largest percentage of disagreement (i.e. disagree or strongly disagree) on graduate effectiveness is 'Teaching culturally, linguistically and socio-economically diverse learners', with 7.8 per cent of principals stating this in Round 2 and 6.8 per cent in Round 3. This is the area in which graduates also had a higher percentage disagreeing they were teaching effectively.

Graduates' perceptions of their preparedness – by school geographic location graduates'

The characteristics of the school in which they were working affected graduates' perceptions, and the extent to which their teacher education programs prepared them to meet the challenges of these three key areas, are discussed here. The graduates' responses to how well they felt their teacher education programs prepared them in these three areas were recorded on a five-point Likert scale from strongly disagree to strongly agree, which were then put into three groups, as follows:

- strongly disagree and disagree were merged into one category named 'Disagree'
- strongly agree and agree were merged into one category named 'Agree'

- neither agree nor disagree remained a category on its own, and was not used for the purpose of this analysis

The 'Disagree' group and the 'Agree' group as to being prepared in the three areas, were cross-tabulated with the following school data:

- school geographical area (i.e. major city, inner regional, out regional, remote and very remote)
- school type (i.e. early childhood, secondary and combined)
- Aboriginal and Torres Strait Islander focus (i.e. schools with and without an Aboriginal and Torres Strait Islander focus)

The two tables below show the results of these cross-tabulations. Table 118 shows the percentage for graduates who 'Disagree' and 'Agree' that their teacher education program prepared them in teaching diverse learners, use of ICT, and literacy and numeracy, cross-tabulated with school geographic location.

Table 118. Graduates' level of agreement that teacher education programs prepared them in key areas – by school geographic location

	Teach diverse learners		Use of ICT		Literacy & numeracy	
	Disagree	Agree	Disagree	Agree	Disagree	Agree
	%	%	%	%	%	%
Round 1						
Major city	55.0	58.5	57.8	61.5	55.9	60.9
Inner regional	24.0	21.2	20.5	20.2	25.5	20.0
Outer regional	16.3	15.1	15.1	13.9	14.7	14.3
Remote	3.9	2.8	4.9	2.3	3.9	2.1
Very remote	0.8	2.4	1.6	2.1	0.0	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Round 2						
Major city	60.0	63.0	63.5	60.3	64.5	60.7
Inner regional	22.2	21.3	23.3	22.9	22.3	22.8
Outer regional	11.9	9.7	9.4	10.7	8.0	11.0
Remote	3.8	3.0	2.1	3.5	2.4	2.6
Very remote	2.2	3.1	1.6	2.6	2.8	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
Major city	55.3	63.3	59.0	62.1	58.8	60.7
Inner regional	21.6	18.9	19.7	19.8	18.5	19.8
Outer regional	13.3	11.9	13.7	11.6	17.7	12.6
Remote	3.5	3.0	2.7	3.3	2.3	3.1
Very remote	6.3	2.8	4.9	3.1	2.7	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

The analysis shows that there was no relationship between them feeling well prepared in these three areas and the type of school in which they were employed. For areas where the percentages suggest that there may be a difference between the two groups – e.g. Round 1, very remote schools show that 0.8 per cent of those who disagree they are prepared to teach diverse learners, whereas there were 2.4 per cent of those who agreed they are prepared in this area – the numbers are too small, (thereby increasing the standard error) to ensure reliable results.

Graduate teachers level of preparedness – by Aboriginal and Torres Strait Islander (ATSI) focus

Table 119 shows the percentage for graduates who 'Disagree' and 'Agree' that their teacher education program prepared them these areas, cross-tabulated with schools with and without an Aboriginal and Torres Strait Islander focus.

Table 119. Graduates' level of agreement that teacher education programs prepared them in key areas – by school Aboriginal and Torres Strait Islander focus

	Teach diverse learners		Use of ICT		Literacy & numeracy	
	Disagree	Agree	Disagree	Agree	Disagree	Agree
	%	%	%	%	%	%
Round 1						
No ATSI focus	88.4	87.0	87.0	87.6	88.2	85.7
ATSI focus	11.6	13.0	13.0	12.4	11.8	14.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Round 2						
No ATSI focus	88.9	88.6	87.9	88.5	89.2	88.0
ATSI focus	11.1	11.4	12.1	11.5	10.8	12.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Round 3						
No ATSI focus	86.2	88.1	85.7	88.4	89.2	86.4
ATSI focus	13.8	11.9	14.3	11.6	10.8	13.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

There does appear to be a small difference in all three rounds of the Graduate Teacher Survey between the 'Disagree' and 'Agree' groups in the area of literacy and numeracy. For example, for graduates who disagreed they were prepared in this area in Round 1, 11.8 per cent of them were teaching in an Aboriginal and Torres Strait Islander focus school, whereas for those who agreed they were prepared in literacy and numeracy in Round 1, 14.3 per cent of these graduates were teaching in an Aboriginal and Torres Strait Islander focus school.

A chi-square test was conducted to compare the percentages for the 'Disagree' and 'Agree' groups. There was no significant difference between the two groups. Again, as with geographic location of schools, the analysis shows there was no relationship between the feeling well prepared in these three areas and whether or not the school in which graduates were employed was an Aboriginal and Torres Strait Islander focus school.

What implications do these findings have for initial teacher education?

The responses from graduates and school principals as discussed in this section suggest that graduates face particular challenges in teaching culturally, linguistically and socio-economically diverse learners and teaching literacy and numeracy, in comparison with other areas that were specified in the survey. To arrive at a better understanding of why respondents felt less well prepared by their teacher education programs in these areas, it is useful to examine the free text responses elicited by the surveys, as well as the interviews that were conducted with selected graduates in each state. Taken as a whole, the LTEWS data prompts critical reflection on how the professional learning graduates experienced during their pre-service program provides a framework for the ongoing professional learning they experience on entering teaching.

The importance of preparing early career teachers to address the issue of cultural, linguistic and socio-economic diversity is emphasised in the Australian Professional Standards for Teachers (e.g. Standards 1.3, 2.4, 3.7, 7.3). In free text comments and interviews, graduates use similar language to that which is used in the Standards to describe the challenges they had been facing. This is not to assume that these early career teachers are consciously drawing on these standards, simply to say that they are using a language that they hold in common with other members of the profession that has been adopted by the Australian Institute for Teaching and School Leadership and other regulatory authorities around Australia. The LTEWS 'Mapping of Initial Teacher Education Programs in Australia in 2011' report (See Appendix 1) shows that teacher educators are very aware of the importance of promoting the importance of diversity, ICT and literacy and numeracy (they are required to show that their programs address these dimensions in order for them to be accredited) and so one can also read the graduates' responses as evidence that they have appropriated the language of their teacher education programs in order to give an account of their experiences as early career teachers.

It is clear from the surveys and interviews that these graduates have been inducted into a professional discourse that enables them to talk about and reflect on their work. There is obviously a considerable difference between the capacity to speak the language specific to education as a field of inquiry and the ability to teach effectively – this is precisely what respondents are saying when they emphasise the importance of the practicum experience within their initial teacher education programs. Yet such a professional discourse is nonetheless an indispensable condition for entering the profession and grappling with the professional challenges that teaching poses. Otherwise these early career teachers would simply not be able to identify problems and consider how they might best be addressed. The question of how well initial teacher education can equip graduates to handle the complexities of teachers' work is about the dividing line between learning 'about' teaching and using that learning in practice. It concerns the difference between acquiring a professional discourse and applying the language and concepts of that discourse in order to actively engage in specific school settings.

With respect to the question of these early career teachers' capacity to grapple with cultural, linguistic and socio-economic diversity, both the survey free text responses (when they were invited to identify two key challenges they were facing, using their own language) and the interviews show that they are using words like 'diversity' and 'difference' to identify complex issues that have emerged in the course of their work.

It should be noted, however, that the question of their capacity to handle diversity is implicit in other challenges they name. One respondent, for example, specified 'professional ethics and reporting on student welfare' as a key challenge, which conjures up a situation where this person might have encountered behaviour that was outside his or her customary frame of reference or system of values. This comment might, in short, refer to a situation where this teacher has been confronted by difference or diversity, prompting reflexive scrutiny of his or her values and beliefs. The same might be said about free text responses referring to 'assessment and catering for diverse learners', and 'assessment for students with a disability', not to mention other examples of challenges where

respondents name curriculum and pedagogical issues that conceivably involve addressing the needs of students from a diverse range of backgrounds.

Overall, the free text responses indicate a marked capacity on the part of respondents to reflect critically on the meaning of what they are doing, drawing on the professional knowledge available to them (professional knowledge that they have developed through their initial teacher education programs), rather than simply worrying about problems (e.g. behaviour management) in a narrowly pragmatic way.

As discussed in Section 4.2.4, many survey respondents indicated that assessment and reporting was an issue for them and this clearly impinges on the question of catering for cultural, linguistic and socio-economic diversity, or at least it might do so. 'Effective authentic assessment'; 'expectation of passing students who really shouldn't be'; 'reporting and grading a multilevel classroom'; 'reporting back to parents … knowing how to provide feedback on students learning without sound too negative' – these statements by respondents about key challenges that they have been facing imply continuing attempts on their part to grapple with the values and expectations of students and their parents within particular school communities.

One respondent makes an explicit connection between assessment and responding to cultural diversity by reflecting on his or her experience in teaching in an Australian Aboriginal and/or Torres Strait Islander community by saying: 'As a remote, 100% Australian Aboriginal and/or Torres Strait Islander school, assessment in the past has been largely formative. The only exception has been in the area of standardised literacy tests. In the area of numeracy, in particular, students have made some significant progress this year, but this is not demonstrated by summative test results'. The SETE interviews have produced similar instances of early career teachers expressing concerns about standardised testing (i.e. NAPLAN) vis-à-vis the attitudes and values evinced by students at their school. (This is not to say that their concerns are justified, merely to indicate that they are engaging in a professional discourse that makes connections between assessment issues and issues of socio-cultural diversity.)

The question of graduates' capacity to grapple with diversity can be usefully considered in relation to what respondents had to say about 'behaviour management'. This loomed large as a key challenge they were facing in the Round 1 survey, and many respondents simply named this challenge without elaborating any further. Other respondents, however, showed signs of conceptualising this challenge in terms of difference or diversity, and a capacity to recognise and respond to the students in their classes. Here are some examples from the free text responses in Round 1 survey where respondents were asked to name two key challenges they were experiencing as early career teachers – many used the term 'behaviour management'.

- 'Behaviour management is still a struggle, but is slowly improving as I get to know my students';
- 'setting boundaries, expectations, dealing with disruptive and defiant behaviours…'
- 'behaviour management – knowing the correct words to use and things to say and being clear about expectations'
- 'behaviour management, whilst catering to a diverse range of learning abilities'
- 'class with range of issues from behaviour to low literacy and catering to each student'
- 'classroom management (especially with long term disengaged students)'
- 'classroom management has been a great challenge at a school where the majority of students have a low socio- economic background and who place no value whatever on education…'

As indicated above, not all the respondents who named 'behaviour management' as one of their 'key challenges' contextualised it in the way these last two respondents do, as requiring an understanding of the values and expectations of students from a 'low-socio economic background'. Such responses are nonetheless interesting in the way they show early career teachers drawing on the intellectual resources available to them in order to name and address challenges that they have encountered. One senses a disposition on the part of some respondents to resist being judgmental, to try to interpret the behaviour of their students as symptomatic of larger issues or social contexts – a disposition that (arguably) partly derives from their initial teacher education, and thus prompts thought about what the 'effectiveness' of teacher education might really mean.

It does not seem reasonable to expect early career teachers to immediately show a capacity to handle all the things named by the term, 'behaviour management' (experienced teachers who transfer schools face difficulties establishing their authority in a new setting). What one might reasonably expect is a capacity on the part of early career teachers to try to understand the behaviour of their students, and on this basis to develop strategies that might enable them to create a more generative classroom environment.

It is noteworthy that classroom management dominated the challenges listed in the Round 1 survey, sometimes reflecting the casual/relief teachers' status of respondents, and in one or two instances the fact that they were teaching out of field. There was, however, a marked decline in the number of respondents specifying behaviour management or classroom management as a key challenge from Round 1 to Round 2 survey. This suggests that these early career teachers were moving beyond 'survival' mode, vis-à-vis the classes they were teaching, and that they were beginning to take stock of other dimensions of their school settings, beyond the classroom door. This is not to say that they were no longer experiencing enormous pressures, but that they were beginning to put aspects of their work into perspective and engage in significantly new professional learning as they moved beyond their initial teacher education, assuming the professional responsibilities associated with their new roles. (In this respect, it is worth remarking that casual/relief teachers who were interviewed showed a markedly diminished capacity to build on their initial teacher education, remaining preoccupied with behaviour management issues without being able to make strong connections to questions of pedagogy and curriculum. In some instances, interviewers even sensed that the knowledge these graduates had acquired through their initial teacher education was being eroded because they were not in a position to apply it.)

The challenge of addressing the needs of students from diverse backgrounds was also apparent in comments made by respondents about important dimensions of schooling, such as 'curriculum' and 'engagement', including the challenges associated with implementing the new Australian curriculum. Such comments showed respondents thinking beyond the immediate contexts of their classrooms and locating their work within larger curriculum and policy settings. One respondent, for example, listed 'curriculum planning – sorting through and finding the best formats to suit the diverse range of learners in our small school'.

Whilst this capacity to make connections with the whole school context (and in some case the larger policy context of the Australian curriculum) is evident in Round 1 survey, this disposition appears to become more marked in the second survey, where some of the comments take on a more 'political' character with respect to the constraints under which respondents feel they are working, with one remarking that 'restrictive curriculum requirements make it difficult to cater for diversity and manage behaviour.' Once again the way these early career teachers have appropriated the language of their profession, and are attempting to give an account of their challenges in terms of issues like 'curriculum' or 'assessment', as key dimensions to consider when addressing 'diversity', is noteworthy. Many comments show respondents thinking relationally, rather than treating issues in isolation, recognising that

the complex phenomena that they are encountering in their first year of teaching can only be understood when they are placed within larger contexts.

> *It is unbelievable. My lowest student in year 7 does 12 take away 7, marking down 12 strips on a piece of paper and crossing out seven of them and counting what's left over. That's what my lowest student does and then my highest student is actually operating about where he should be and the gap between that is just enormous … it makes it very difficult … for anyone to teach. For me it's especially difficult because I'm still working out how to get ideas across to students.*
>
> *Graduate teacher, full-time contract, off-campus*

This kind of shift from a focus on one's immediate classroom context to a wider awareness of the institutional setting of the school and the community it serves is a familiar one. For the purposes of this study, evidence of the continuing professional learning of graduates raises questions about how, exactly, memories of their initial teacher education figure within their emerging professional identities and their ongoing professional learning. The learning that they experienced in the course of assuming their professional responsibilities within their new institutional settings provides a new perspective in which to view their memories of their pre-service education (this becomes more obvious in interviews with graduates than in the survey responses, when some provide very vivid accounts of what it has felt like to step from initial teacher education into the unfamiliar context of a specific school community).

The free text responses and interviews suggest that graduates at least recognise the challenge of meeting the needs of students from socially and culturally diverse backgrounds. And, given the culturally and socially situated nature of those needs, as frequently conveyed by those graduates who were interviewed, questions emerge about the extent to which any teacher education program can reasonably be expected to anticipate all the challenges that graduates face, beyond instilling in them a capacity to be responsive to their new situations and to learn from them (i.e. a reflective disposition that graduates generally affirmed as being a positive characteristic of their teacher education programs). The positive characteristic of 'reflective practice' as a strength of their teacher education programs is discussed in Section 4.2.2 of the report.

This issue of the nature and scope of the professional learning that initial teacher education can reasonably provide can be explored further through considering respondents' comments on their preparedness to teach literacy, one of the other areas in which they registered a lower level of agreement with the proposition that their teacher education program had equipped them to meet the challenges of their first year. In the Round 1 survey, there was some indication from a (very) small number of respondents that they felt they did not have adequate skills to teach literacy (see details below). Other respondents, however, seemed less concerned about their capabilities as literacy teachers. By naming 'literacy' as a challenge, they were instead registering the challenges with which they were grappling, given the particular cohort of students they were teaching. These challenges included (again drawing on free text responses): the wide range of abilities in a class, the challenges of teaching ESL students, low literacy levels (with a couple mentioning Australian Aboriginal and/or Torres Strait Islander students). This is congruent with the other insight that has been explored above, namely that by and large their initial teacher education programs have equipped them to identify the issues or challenges with which are faced. The task with which they are now presented involves accepting their professional responsibilities and applying the knowledge and experience that they have acquired in their initial teacher education programs in order to address those challenges and to learn from these new experiences. Some graduates cited the challenges of implementing a

literacy program, involving organising their classes and establishing routines, as indicated in this comment from Round 1 free text responses:

> *Developing a well working literacy rotation has taken some time and effort. Initially I found it difficult to run a really successful literacy class. Teaching times were disrupted by other students doing independent work. I now have what I consider a great system, with all students knowing what they are to be doing at each time slot. Teaching times with my small groups are running more smoothly due to less interruptions as each rotation group now has a leader, reader and thinker. This puts the responsibility of learning and organisation back onto the students. They have responded well to this system.*
>
> *Graduate teacher, free text response*

Far from naming a major challenge that derives from any lack on the part of his or her teaching education program, this comment reflects a considerable amount of knowledge about how to organise a class for literacy, and so might just as easily be read as a sign of success instead of a problem. (This is borne out when one reads the respondents' comments with respect to the 'successes' they have experienced, many of which convey their satisfaction at having been able to successfully grapple with a professional challenge.

Other comments that reflect a broadly similar attitude towards the challenge of organising classes for literacy learning include (using the words of respondents): 'the implementation of a new whole school approach within the literacy program', 'developing effective literacy programs', 'knowing how to implement literacy and numeracy programs which meet the needs of schools and parents as opposed to university-driven approaches to these areas' – all comments that reflect a concern with literacy as a whole school responsibility.

The last remark, which juxtaposes teacher education, juxtaposing the challenge of implementing whole school literacy and numeracy programs that meet the needs of school communities with so-called 'university-driven' approaches to literacy and numeracy, was matched by some other negative remarks about teacher education, including the following:

- 'Explicit knowledge of phonics and phonemic awareness when teaching Literacy (this was not taught explicitly at University)'
- 'I didn't know enough about teaching literacy. No teacher should leave university not knowing how to teach a child to read. I had no idea.'

But such comments did not proliferate, and the overriding impression generated by the surveys was that the respondents were working successfully to implement literacy programs (where the emphasis falls on 'programs', showing a consciousness of literacy as a whole school responsibility).

One respondent made a very positive comment about the way his or her initial teacher education program addressed the challenges of literacy teaching.

> *As someone who has English as an additional language, literacy is something I generally always had to work harder with and put more effort in. Numeracy comes off naturally as I had always loved it but literacy presented a challenge. The literacy course we had in [my Initial Teacher Education Course] was amazing and it opened up so many strategies for teaching.*
>
> *Graduate teacher, free text response*

This comment is mirrored by several comments made in Rounds 1 and 2 about the successes that respondents have experienced. Many refer to literacy, especially with respect to students who have been experiencing literacy difficulties, such as this comment from Round 1.

> *I have worked with a Literacy class that behaviourally was very difficult and struggled with many aspects in learning. For most students, I was able to improve their confidence in themselves, engage them in learning and see importance of Literacy. It certainly wasn't easy, but it was very rewarding!'*
>
> *Graduate teacher, free text response*

This kind of altruistic impulse is evident in many comments in both the surveys and the interviews, showing that respondents were deriving significant rewards from their interactions with young people. There was also a sense that some were continuing to engage in rich professional learning and that they were beginning to refine their skills as literacy educators, as is suggested by this selection of comments about the successes they had experienced (using the words of the respondents):

- advancing students' literacy, developing strong literacy programs, development of phonics
- Remedial reading
- VCAL Literacy – engaging students
- Connecting students' learning to real life – organising activities and visits from authors/illustrators/performers to enhance literacy development in the school community
- developing an interest in literacy for students who are unable to read or write
- improvement of student skills – students who have been challenged by literacy in the past have demonstrated their understanding and improved on their analysis and evaluative skills in the arts
- improving literacy through development of a love of reading
- providing differentiated literacy tasks

The principals' survey reflects a generally positive estimation of graduates' effectiveness in the areas of catering for diversity, ICT and teaching literacy and numeracy, although their free text responses showed a pronounced emphasis on the need for early career teachers to cater for diversity as one of the key challenges they saw them as facing. The principals also made connections between issues of classroom management and the need to differentiate curriculum 'so that all learners are catered for' (as one respondent put it). Three respondents pointed to an apparent lack of knowledge with respect to the teaching of literacy ('teaching literacy without proper training').

However, such perceptions of the effectiveness (or otherwise) of initial teacher education programs with respect to addressing diversity, ICT and teaching literacy and numeracy need to be placed alongside graduates' accounts of the professional learning they have experienced in these areas, as shown by the 'successes' they have had (in the free text responses) and the stories they told in the interviews.

With respect to literacy and numeracy, graduates' statements about their 'successes' (as recorded in the free text responses) do more than provide a counterbalance to their comments about their lack of preparedness in this area. Indeed, their perceived effectiveness in this respect, as recorded by both graduates and school principals is cause for optimism that early career teachers have the capacity to develop a reflective practice that is increasingly

responsive to the literacy and numeracy needs of their students, and the same might be said about ICT and catering for the needs of students from socially diverse communities. The significant difference between the levels of agreement with respect to their preparedness and their current effectiveness indicates that they have been engaging in ongoing professional learning that has taken them beyond the learning they experienced in their pre-service programs. They have, in short, joined the profession with a disposition to continue learning.

An interesting finding that prompts further thought about the effectiveness of teacher education is that graduates rated their effectiveness in several key areas more highly than their sense of preparedness. The difference between their apparent dissatisfaction with their preparation and their sense of effectiveness within their current institutional setting is especially apparent in the areas of cultural linguistic diversity, literacy, numeracy and ICT.

5. Conclusion

The *Longitudinal Teacher Education Workforce Study* (LTEWS) investigated the career progression of 2011 graduate teachers from teacher education into teaching employment in all states and territories across Australia during 2012 and the first half of 2013. It also tracked their perceptions, over time, of the relevance and effectiveness of their teacher education programs. LTEWS was conducted concurrently with the *Studying the Effectiveness of Teacher Education* (SETE) project, which is a three-year project investigating these issues in Queensland and Victoria funded by the ARC and industry partners. The findings from SETE were incorporated with the LTEWS findings to provide the national data set discussed in this report.

LTEWS utilised a mixed-method approach using quantitative and qualitative data collection methods including three rounds of Graduate Teacher Surveys and Principal Surveys as well as telephone interviews with graduate teachers. The Graduate Teacher Survey data were analysed in two ways, firstly as three separate snapshots (March 2012, October 2012, March 2013) and also from a longitudinal perspective on graduate teachers who were followed across this time period. The analysis was also informed by the interview data collected between May 2012 and May 2013 after each survey round.

The cohort of 2011 graduate teachers followed in LTEWS was diverse. The average age of respondents early in their first year after graduation was 32 years, with 53 per cent under 30 years of age and 81 per cent female. Eighty-six per cent came from English-speaking backgrounds, 1 per cent identified as Aboriginal or Torres Strait Islander, and 42 per cent identified as the first in their immediate family to gain a tertiary qualification. Fifty-two per cent had graduated from a graduate entry teacher education qualification (including 12 per cent from masters programs), while 46 per cent had graduated with a four-year undergraduate bachelor's degree. The majority were qualified to teach secondary school (44 per cent) and primary school (37 per cent). More than three-quarters had completed their teacher preparation in Victoria (29 per cent), Queensland (24 per cent) and New South Wales (23 per cent).

Overall, the findings support the already well established view that learning to teach is a continuum involving pre-service teacher education, induction into the profession and then ongoing professional learning and development (e.g. Ball & Cohen, 1999; Conway, Murphy, Rath, & Hall, 2009; Feiman-Nemser, 2001; Putnam & Borko, 2000). High quality pre-service teacher education programs must prepare graduate teachers for highly effective beginning teaching but also provide the foundation for further professional learning and growth. This view is reflected in the four professional stages of a teaching career – Graduate, Proficient, Highly Accomplished and Lead – as outlined in the Australian Professional Standards for Teachers (Australian Institute of Teaching and School Leadership, 2011c). Further, this notion of ongoing learning to teach underpins the evolving work of the Australian Institute of Teaching and School Leadership in relation to the Australian Teacher Performance and Development Framework (Australian Institute for Teaching and School Leadership, 2012). Both the LTEWS surveys and the follow-up interviews provide evidence to show that the majority of graduates understand the importance of their initial teacher education in providing them with the necessary knowledge and skills to enter the profession as effective beginning teachers, but they also acknowledged that their professional learning and growth continued during their first years of teaching. It is therefore important that teacher educators work collaboratively with employers and jurisdictions in helping to bridge pre-service teacher education and beginning teaching in order to assist smooth transitions into the profession and ongoing professional learning.

This concluding chapter of the report provides discussion of the findings in the areas of focus for the project: i) the relevance and effectiveness of teacher education; and ii) the career progression of new teachers. It also considers future research possibilities based on the conduct of and findings from LTEWS.

Pre-service Teacher Education

Over 75 per cent of the graduates who had gained teaching employment at the time of the surveys said they would recommend their teacher education program to someone else, while two-thirds of the new graduates who had not been successful in gaining employment as a teacher said they would recommend their teacher education program. The data show that graduate teachers with a teaching position were more positive about their initial teacher education than those without a teaching position.

Entry to and exit from teacher education

There is currently considerable public debate over who should enter the teaching profession, with a particular focus on Australian Tertiary Admission Rank (ATAR) scores. While higher ATAR scores of entrants into teacher education is certainly desirable, it must be noted that ATAR as a measure of entry is only relevant for a percentage of those entering teacher education programs, that is, school leavers commencing undergraduate programs. For example, the Australian Institute of Teaching and School Leadership (2013) found that 60 per cent of students who entered undergraduate teacher education courses in 2011 did so based on entry requirements other than an ATAR. In LTEWS, about three-quarters of graduates did not enter their teacher education program directly from secondary school, and more than half had other qualifications before entering teacher education. The capacity of mature age graduates to reflect critically on their professional practice became very apparent in the interviews, showing the potential of such people to contribute to the profession.

As the 'Mapping of Initial Teacher Education Programs in Australia in 2011' report (See Appendix 1) shows, teacher education providers use a variety of measures such as portfolios, written statements, previous qualifications, work history, interviews and so on, to make decisions about admission into teacher education programs, thus accommodating the variety of prior experiences that prospective teachers bring to teacher education.

It has been argued that student learning can be enhanced where the profile of the teaching workforce reflects in some way the diversity of the school student population. Forty-two per cent of LTEWS graduate teacher respondents identified as the first in their family to gain a tertiary qualification. Many current and recent policies are aimed at career changers entering teaching. Thus, the importance of selection procedures that continue to build a diverse teaching workforce is highlighted.

While it is important to examine more closely the value and effectiveness of various mechanisms used to select teacher education applicants, it is also important to note that the new nationally-framed regulation system for accreditation of teacher education includes an increased emphasis on outcomes and the need for graduates from teacher education to be able to provide evidence that they have the requisite professional knowledge, practice and engagement capabilities for beginning teaching as outlined in the Australian Professional Standards for Graduates (Australian Institute of Teaching and School Leadership, 2011c). Attention to the outcomes of teacher education (that is, to the graduates and their capabilities) is relevant when considering the quality of the teaching profession, and positioning of it within a system for teacher evaluation across all professional stages of a teaching career (see for example, Darling-Hammond, 2006a, 2013; Darling-Hammond, Newton, & Chung Wei, 2012; Darling-Hammond, Newton, & Wei, 2010).

Length and level of qualification

In LTEWS, one-year prepared teachers reported feeling less prepared for teaching by their teacher education programs in knowing students and how they learn, knowing the content and how to teach it, and in literacy and numeracy, when compared to other program types. Moreover, those with two-year graduate teacher education qualifications planned to move into leadership positions early in their careers. Taken together, these findings suggest support for the recent decision of the Standing Council on the new accreditation requirement for two-year graduate entry programs. However, length of program by itself is not a guarantee of quality of either the program or the graduating teachers. Moreover, other issues identified by the Productivity Commission (2012), such as the impact on teacher supply, must be considered along with their recommendations that some evaluation of two-year programs be undertaken to inform the implementation of this new program standard.

Content

Even though the Australian Professional Standards for Teachers (Australian Institute of Teaching and School Leadership, 2011c) were not in place for the programs in which the LTEWS cohort studied, graduates generally felt prepared and effective in relation to these standards. In particular, graduates reported feeling well prepared to 'Know students and how they learn', 'Plan for and implementing effective teaching and learning' and "Engage in professional learning'. Graduates felt most effective in 'Knowing students and how they learn', 'Knowing the content and how to teach it', 'Planning for and implementing effective teaching and learning' and 'Creating and maintaining supportive and safe learning environments'. The principals generally endorsed the assessments of teacher graduates about their effectiveness in relation to the standards, but they had more positive perceptions of the effectiveness of graduates than the graduates themselves to 'Plan for and implement effective teaching and learning'.

However, the following two standards are clearly of concern: 'Engage professionally with colleagues, parents/carers and the community', and 'Assess, provide feedback and report on student learning'. Graduates felt least prepared and least effective in these areas. Principals also highlighted engagement with parents, families and communities as one of the key challenges that they believed beginning teachers faced.

In relation to the other specified teaching areas in this study, graduates felt least prepared in the area of 'Teaching culturally, linguistically and socio-economically diverse learners'. Only slightly more felt prepared in the other two specified areas 'Use of ICT' and 'Literacy and numeracy'. Less than a third of the graduates and providers indicated 'Teaching culturally, linguistically and socio-economically diverse learners' as a distinguishing feature of their teacher education programs. This seems to be an area requiring more attention in teacher education programs. It is worth noting, however, that in surveys and interviews graduates recorded experiencing significant professional learning in 'Teaching culturally, linguistically and socio-economically diverse learners' during their first year of employment.

Principals identified beginning teachers' main challenges as classroom management, pedagogy and catering for diverse learners, with poor teaching skills and classroom management as the most common cause of a difficult transition into teaching. However, they also noted lack of school support and induction, lack of interpersonal/communication skills, and lack of adequate teacher preparation as important factors.

Thus, LTEWS findings provide much guidance for improving teacher preparation. It is noted however that LTEWS graduate teacher respondents rated their effectiveness in many areas more highly than their sense of preparedness. Moreover, survey and interview findings indicated that graduates recognised the frame of reference

that their teacher education program provided for early career teaching. At the same time, they acknowledged the ongoing professional learning and development in schools as they continually built upon their skills and knowledge to effectively enact their roles and responsibilities in schools. This reflects a socialisation into the profession that is well documented in the research literature (e.g. Cherubini, 2009; Feiman-Nemser, 2001; Zeichner & Gore, 1990) and the importance of consolidating initial teacher preparation with adequate support, development and learning provided to graduates in their initial teaching years.

In addition, we note the power of 'learning to practice *in* practice' (Darling-Hammond, 2010) which requires actually being in a specific context for that practice – in fact, in a range of specific contexts over time. For example, graduates talked about their developing competence in 'Teaching culturally, linguistically and socio-economically diverse learners' during the first year and a half after graduation, as they worked in specific culturally, linguistically and socio-economically diverse learning contexts. Thus, it is important for teacher education providers and employers to work together to identify the abilities and capabilities relevant for each phase of a teaching career, particularly those for beginning teaching.

This is not to suggest that some areas should not be focused on in teacher education. After all, graduates are fully responsible for the learning of all students in their classes, in the same way as experienced teachers. Rather, the findings support close examination and clear articulation of the developing knowledge and skills across the four professional stages of a teaching career – Graduate, Proficient, Highly Accomplished and Lead – as outlined in the Australian Professional Standards for Teachers. It is important that explicit attention be given in teacher education accreditation (Australian Institute of Teaching and School Leadership, 2011a) to what graduate teachers need to know and be able to do for effective beginning teaching, and that this is articulated with ongoing professional learning opportunities designed to develop the knowledge and skills expected at progressive stages of a teaching career. Teacher education content and processes, including the practicum, should ensure a solid foundation for this growth and development as well as a smooth transition into teaching and effective beginning teaching. However, LTEWS findings do support a view that teacher education programs must give specific attention to ways in which graduate teachers are prepared to (i) engage professionally with colleagues, parents/carers and the community, (ii) teach culturally, linguistically and socio-economically diverse learners, and (iii) assess, provide feedback and report on student learning (particularly in programs preparing primary teachers).

Practicum and internships

There is general consensus in research and various reviews of teacher education that the practicum is a significant and valued part of learning to teach. Graduates in this study were clearly of the view that the skills they gained during their practicum were relevant and important for teaching. They felt that their practicum experiences were more relevant in preparing them for their current teaching contexts than their university-based units, though they also acknowledged the importance of university-based learning. Free text and interview responses indicated that graduates and principals valued a practicum program involving a combination of a 1-2 days per week model, block placements and culminating in an internship transiting into professional practice. Graduates and principals noted the value of internships and extended periods of time in schools towards the end of a teacher education program to support transition into full-time teaching.

Survey and interview responses identified the need for stronger linkages between content, theory and application in their teacher education. Graduates saw the practicum as a vitally important context for applying the theories and knowledge developed in university-based settings. This is particularly crucial in light of the need to increase their capacities in the three identified main areas of concern: 'Engaging professionally with colleagues, parents/carers and the community', 'Teach culturally, linguistically and socio-economically diverse classrooms',

and 'Assess, provide feedback and report on student learning'. Graduates' responses indicated the value of quality practical experiences in a range of diverse settings and strong school-university partnership programs to strengthen practical knowledge and skills. The interview findings showed that graduates' recognised the importance of quality practicum experiences and placement supervision in fostering an increased awareness of their roles and participation in schools, through observation of good practices and working closely with colleagues and mentors.

As the Mapping report shows, there is considerable variation of practicum processes and structures across teacher education providers and programs (See Appendix 1). This mapping showed teacher education program providers' commitment towards school-university partnerships, with some developing partnerships with schools or school clusters in remote or international communities to provide teacher education students with practical experiences in a range of settings. However, the findings in this study showed that only about 30 per cent and 20 per cent of graduates indicated 'School linkages' and 'Community-based learning' as distinguishing features of their teacher education program respectively. The graduate teachers provided a similar picture of their teacher education program. This is clearly an area needing further attention. Given the importance of the practicum and the fact that learning to teach occurs in multiple places, strong partnerships between schools and universities must reflect a common purpose with respect to the professional learning of teacher education students, including the specification of differentiated but complementary roles and responsibilities of the partners. These partnerships provide a basis for stronger linkages between content, theory and application in teacher education and thus improve the quality of the practicum experience.

As with earlier studies, many teacher education providers contacted for the mapping activity highlighted financial and structural constraints, such as the cost of providing practicum and placement shortages, that impact on the provision for practicum experience within teacher education programs. We note that past reviews have made repeated calls for greater investments in building school-university partnerships in teacher education programs to bridge theory and practice (Caldwell & Sutton, 2010; House of Representatives Standing Committee on Education and Vocational Training, 2007; Ramsey, 2000). This would appear to be an issue that still needs attention.

Beginning Teaching and Career Establishment

Graduates in this study wanted to teach for altruistic reasons (to make a difference, or to work with children) and to work in a subject area or specialisation of interest. While a majority moved into teacher employment after graduation, only a fifth commenced teaching on a permanent basis. Employers and principals seem to like the flexibility this affords their workforce planning as well as the opportunity to ascertain the quality of a graduate before taking them on full time.

However, for the LTEWS cohort, casual or relief employment seemed to hinder their professional learning and career progression. Those with a full-time position and more classroom experience were able to avail themselves of professional learning opportunities and felt that they were becoming increasingly effective. Many graduates employed on short-term contracts, in relief positions, or casually, did not receive any support in their first year of teaching. This was identified by them in interviews as a particular challenge to their ongoing professional learning and transition into the profession.

Principals reported that the most common form of school support provided to new graduate teachers was ongoing professional learning opportunities. Graduates considered this type of support was the most effective to them as an early career teacher, followed by an informal mentor arrangement. However, while almost all principals

identified induction programs as available in their schools, about a quarter of graduate teachers identified this as not available in their schools.

The graduates who were tracked in this study were not very mobile. Many stayed to teach in the state or territory in which they completed their teacher preparation program. Moreover, this was often in the area in which they lived prior to their teacher preparation, or one that was very similar. Over the survey period a majority stayed teaching in their initial school into their second year of teaching, with attrition being higher than average in schools in outer regional and very remote areas.

More than three-quarters of the graduates were teaching in their area of specialisation, especially those teaching mathematics, science, technology, special needs and LOTE. Graduate teachers with specialist qualifications in society and the environment, the arts and health and physical education were least likely to be teaching in their specialist areas.

Three-quarters of principals agreed that they liked to employ graduate teachers, although many did not have the available vacancies. Graduates were attracted to their schools because of a better location and accessibility, reputation for performance or use of technologies, size and newness, and partnership arrangement with universities. Graduates considered that the most effective types of school support were ongoing professional learning opportunities and informal mentor arrangements.

Most new graduates who were teaching saw themselves either teaching or in leadership positions in three years. Very few planned to leave the education sector altogether during that time. Future plans were mediated by their teaching employment status during the first 12-18 months of teaching. Nearly all graduates who were not teaching had other employment, with many working in the education sector more broadly. Employment outside teaching rose significantly in the first year after graduation. In particular, the data shows that graduates with masters degrees taking employment outside teaching almost doubled over this period.

Further Research

Successive government inquiries into teacher education have recommended large-scale research projects investigating the value of teacher education (e.g. Education and Training Committee, 2005). The recent Productivity Commission (2012) recommended that the Australian Government support a study to:

- follow graduate teachers for at least five years
- track more than one cohort of graduate teachers to enable analysis of any future experimentation in pre-service training, induction and professional development
- include additional measures of teacher effectiveness
- gather detailed information on the induction and mentoring arrangements that graduate teachers undertake
- collect information on what factors influence where graduate teachers seek initial employment, and why early-career teachers leave their initial place of employment. (p.29)

A study such as the LTEWS can provide valuable data and analysis to inform these issues. Even though aiming to be longitudinal, the funding timeframe meant that the graduates were only followed for a little over one year after graduation. Moreover, the response rates, while adequate to make the various claims reflected in this report, were such that in some instances deeper analysis of relationships and connections between variables was not possible.

The only other large scale and longitudinal empirical investigation into the effectiveness of teacher education that has been attempted in Australia (Louden et al., 2010), had to be abandoned due to very low response rates. Survey fatigue is a very real issue and has, we believe, had an impact on the response rate, especially given that, for LTEWS alone, graduates were invited to complete three surveys in 12 calendar months. At the same time, regulatory authorities and employers were also surveying these graduates, attempting to answer similar questions about teacher education and beginning teaching. One survey a year to which all stakeholders have input and access may be a possibility to reduce the survey demands on early career teachers.

Another issue needing attention is accurately mapping the components and dimensions of teacher education. The 'Mapping of Initial Teacher Education Programs in Australia in 2011' report (See Appendix 1) noted the difficulty of accessing and validating the dimensions of programs, brought about as much by the constant changes to programs and the availability of information and personnel who might validate that information, as by a lack of consistency and comparability in the terminology used to describe the features or dimensions of initial teacher education. The Australian Institute for Teaching and School Leadership's data report (2013) was compiled from publicly available information, but LTEWS sought to examine the dimensions of programs in much more depth and link that information to the data collected in the surveys and the telephone interviews with graduates. This kind of work is needed to fully understand issues of effectiveness and preparation.

While LTEWS has provided evidence to further understand the value and effectiveness of teacher education in Australia, there is scope for more work. It is generally agreed that impact on student learning is an important outcome for teacher education, and there are a range of ways this can be measured. LTEWS has addressed these questions of effectiveness and impact on student learning by drawing on perceptions – perceptions of the graduate teachers about their effectiveness and influence on students' learning as well as the perceptions of their principals. In the US, value-added models have been used in some states to examine such questions. However many researchers have challenged these approaches (see for example, Cochran-Smith et al., 2012; Darling-Hammond & Youngs, 2002; Kennedy, Ahn, & Choi, 2008). Further work is needed to fully understand 'effectiveness' and 'impact on student learning' in the range of diverse contexts in which new teachers commence their teaching career (see for example, D. J. Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Grossman et al., 2010), and to incorporate the range of measures suggested by the Productivity Commission report (2012).

LTEWS has clearly shown that it is not possible to investigate issues about the value and effectiveness of teacher preparation without conceptualising it within a 'learning to teach' continuum and the prospect of ongoing professional growth. This is not a new realisation for researchers investigating the effectiveness of teacher education. For example, in the Netherlands, Brouwer and Korthagen (2005) conducted a 4.5 year longitudinal study with 357 pre-service teachers, 128 co-operating teachers, and 31 university supervisors from 24 graduate teacher education programs using quantitative survey data, as well as in-depth qualitative data collected over a period of 4.5 years. The study was designed to evaluate effects of a program intended to improve the integration of theoretical and practical learning, but had the unanticipated consequence of demonstrating that variables relating to school context had a larger impact on the formation of new teachers than the program effects they were attempting to document. In the UK, the six-year longitudinal Becoming a Teacher (BaT) study (Hobson et al., 2009) set out to explore beginner teachers' experiences of initial teacher training (ITT), induction and early professional development in England. They similarly found the crucial importance of the school context with respect to the graduates' capacity to engage in ongoing professional learning. Like these studies, LTEWS has shown the value of a mixed-methods approach that draws together large-scale quantitative data collection methods and small-scale qualitative interviews as part of a cohesive research design. By utilising this mixed-methods approach, it became possible to arrive at a deeper understanding of early career teachers' movements from graduation into the teaching workforce, and how this experience might be linked to their pre-service teacher education programs.

We suggest that further longitudinal large-scale mixed-methods research be undertaken, drawing on the methodologies and data of this project, and recommendations of the Productivity Commission. This could be a comprehensive national research program, following pre-service teachers from the beginning of their enrolment in teacher education and then into the first three to five years of teaching incorporating a range of measures of effectiveness of teacher education and its impact on student learning. Stakeholders, including employers, regulatory authorities and teacher education providers, could reduce the survey burden placed on principals and graduate teachers by implementing one survey per year nationally that everyone supports and draws from.

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