Studying the effectiveness of teacher education: final report

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Studying the Effectiveness of Teacher Education – Final Report

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Table of contents

List of tables

List of figures

Glossary

Block practicum	Practicum in schools structured as five days a week over one or more weeks.
Categorical variable	A variable made up of two or more categories.
Continuous variable	A numeric variable that can take on any value between its minimum and maximum value.
Dependent variable	The variable we think is an effect or an outcome (Field, 2013).
Distributed practicum	Practicum structured as 1-2 days a week in a school over an extended period of time.
Early career teacher	A recently graduated teacher. This is generally understood to be a teacher who has had no more than five years teaching experience.
Effect size	An indication of the magnitude of differences between groups (Pallant, 2011).
First in family	The first member of one's immediate family to complete a tertiary qualification.
Free-text responses	Responses to open-ended questions in the Graduate Teacher and Principal surveys. In most instances this was limited to 250 characters of text.
Graduate teacher	For the SETE study these are new teachers who: a) registered with either the Victorian Institute of Teachers (VIT) or the Queensland College of Teachers (QCT); and b) who graduated from an initial teacher education program in either 2010 or 2011. Graduate teachers were the main target population for the large-scale quantitative component of the research.
Graduate Teacher Survey	Surveys developed by SETE researchers to examine the effectiveness of teacher education in preparing teachers for diverse settings. There were four rounds of Graduate Teacher Surveys 2012-2014.
Independent variable	The variable thought to have an effect on the dependent variable. Also referred to as the predictor variable. This variable does not depend on any other variable (Field, 2013).
Initial teacher education	An accredited program that renders graduates eligible for teacher registration.
Internship	Internships are generally understood to be an extended period of independent or 'near independent' teaching towards the end of a teacher education program. This noted, internships do take different forms in different teacher education programs. They are usually 6-10 weeks in duration, following completion of the minimum number of practicum

days required for registration, though some institutions refer to an extended period of practicum in schools as an internship. Survey respondents were invited to indicate the length of the internship they completed and the type of supervision provided during the internship.

Preservice teachers	Teacher education candidates enrolled in a teacher education program.
Principal	The most senior role in a school. The principal commonly heads a school leadership team comprised of all senior school administrators. All members of this team are recognised as school leaders.
Principal Survey	Surveys developed by SETE researchers to examine principals' perceptions of the effectiveness of teacher education in preparing teachers for diverse settings. Sometimes principals delegated responding to the survey to other school leaders. There were three rounds of Principal Surveys, 2012-2013.
Professional experience	Terms and definitions of professional experience and its components vary across jurisdictions and between different providers. However, it generally includes supervised practicum (sometimes called student teaching or teaching practice), un-supervised field-based community or school observations, and internships where the intern is under general supervision of a mentor.
Main effect	The overall effect of an independent variable (Pallant, 2011).
Mean	The centre of a distribution calculated by adding all values and dividing the sum by the number of values (Burdess, 1994).
Multicollinearity	The occurrence of two or more highly correlated independent variables in a regression model.
Quartile	One of four equal groups into which a population or sample can be divided. The first or lower quartile is the number below which the bottom 25 per cent of the data set lies. The upper quartile has the top 25 per cent of data above it.
Significance level	The minimum probability (usually 5% or less) needed to reject the null hypothesis; which assumes no association between variables under investigation (Burdess, 1994). This is set at 5 per cent for most of the SETE analyses, thus if a p-value is found to be less than 0.05, then the result would be considered statistically significant and the null hypothesis would be rejected.
Socioeconomic Index Implied	This field indicates socioeconomic status ranking of a geographic area based on the community's financial ability to support a local school. The figure is calculated as an average of the information elements collected by the ABS and DEEWR and refer to specific census collection districts and statistical local areas. The index will provide you with a rank of those schools in well off area (a high score) and those in a less well-off area (those with a low score). This does not necessarily mean that a 'well-off'

school is located in a 'well-off' area nor vice versa but is a reflection of the households in that area (Write Response, 2010).

Standard deviation	The average distance between each value and the mean (Burdess, 1994).
Statistical association	When the value of the independent variable/s enables more accurate prediction of the value of the dependent variable (Burdess, 1994).
Variance	Measure of the spread of distribution. This is the square of the standard deviation (Burdess, 1994).

List of acronyms

ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum, Assessment and Reporting Authority
ACDE	Australian Council of Deans of Education
ACER	Australian Council for Educational Research
AEU	Australian Education Union
AGS	Australian Graduate Survey
AITSL	Australian Institute for Teaching and School Leadership
AQF	Australian Qualifications Framework
ASGS	Australian Statistical Geography Standard
ATAR	Australian Tertiary Admissions Rank
BaT	Becoming a Teacher study (Hobson et al., 2009)
BERA	British Educational Research Association
BERA-RSA	British Educational Research Association - Action Research Centre
CI	Chief investigator
CRT	Casual Relief teacher
DEECD	Victorian Department of Education and Early Childhood Development, now known as Department of Education and Training (DET)
DEEWR	Australian Government Department of Education, Employment and Workplace Relations
DEST	Australia Government, Department of Education, Science and Training
DIISRTE	Australian Government Department of Industry, Innovation, Science, Research and Tertiary Education
EAL	English as an Additional Language
ESA	Education Services Australia
FTE	Full time equivalent
ICSEA	Index of Community Socio-Educational Advantage
ICT	Information and Communication Technologies

ITT	Initial Teacher Training (used in the United kingdom)
LTEWS	Longitudinal Teacher Education and Workforce Study
MCEECDYA	Ministerial Council for Education, Early Childhood Development and Youth Affairs
NCTQ	National Council on Teacher Quality (United States)
OECD	Organisation for Economic Co-operation and Development
OP	Overall Position
PISA	Programme for International Student Assessment
QCT	Queensland College of Teachers
QDETE	Queensland Department of Education, Training and Employment
SETE	Studying the Effectiveness of Teacher Education (Australian Research Council Linkage Project)
SiAS	Staff in Australia's Schools survey
TAFE	Technical and Further Education
TEMAG	Teacher Education Ministerial Advisory Group
TRA	Teacher Regulatory Authority; e.g. VIT
TTF	Teaching Teachers for the Future project
VIT	Victorian Institute of Teaching
VITAE	Variations in Teachers' Work, Lives and Effectiveness project (Day, Stobart, Sammons, & Kington, 2006)
VTAC	Victorian Tertiary Admissions Centre

Executive summary

Teacher educators in Australia are increasingly being asked to defend the quality and impact of their work—specifically, their ability to prepare effective teachers. However, the kind of large-scale data sets that policy makers and other stakeholders seek are not readily available to inform questions about the value-add of teacher education. The large-scale and longitudinal 'Studying the Effectiveness of Teacher Education' (SETE) project set out to respond to these questions. The study therefore makes a unique contribution to teacher education research and will inform discussions about the form, impact and outcomes of teacher education in Australia.

SETE investigated the effectiveness of teacher preparation for early career teachers employed in diverse settings across Queensland and Victoria. It was a four-year longitudinal study that followed 2010 and 2011 graduates from initial teacher education to their first teaching positions and subsequent career pathways. In addition, it investigated their principals' perceptions of the graduates' effectiveness as beginning teachers. It is the first study of its kind in Australia in terms of breadth and scope, involving around 5,000 early career teachers and 1,000 principals.

The specific research questions for the study were:

1. How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

2. What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of school settings?

3. How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

As a way of understanding the experiences of graduating teachers as they transition from teacher education into employment in schools and their lived sense of preparedness and effectiveness, the project used the work of Lefebvre (1991) and Soja (1996) to interrogate the spaces where teacher education is understood differently: the conceived space; the perceived space; and, the lived space. This exposed the layers of factors influencing teachers' effectiveness and provided access to understanding of the dynamics between the teacher education program, the individual, and the workplace.

SETE employed a mixed method approach to collect, record and analyse data sets over time. A recursive strategy combining on-line surveys, database analysis/contextual mapping and case studies was used. First round case study data informed development of the first round survey instruments, then initial survey findings informed second year case study foci. This pattern continued over the four-year data collection period. Each of the methods thus produced stand-alone as well as mutually informing longitudinal findings.

SETE was funded by the Australian Research Council in partnership with the Victorian Institute of Teaching (VIT), the Queensland College of Teachers (QCT), the Victorian Department of Education and Early Childhood Development (DEECD, now known as the Victorian Department of Education and Training (DET)), and the Queensland Department of Education Training and Employment (QDETE).

Key findings

1. How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

Overall, the graduate teachers reported feeling prepared by their teacher education program and effective as beginning teachers across nine key areas of teaching:

- Teaching culturally, linguistically and socio-economically diverse learners
- Design and implementation of the curriculum
- Pedagogy
- Assessment and the provision of feedback and reporting on student learning
- Classroom management
- Collegiality
- Professional engagement with parents/carers and the community
- Professional ethics
- Engagement with ongoing professional learning

However, they considered that they were more effective than they had been prepared by their teacher education programs in all of these areas. Perceptions of preparedness and perceptions of effectiveness are highly correlated.

Graduate teachers reported being:

➤ better prepared by their teacher education program in Pedagogy, Professional ethics and Engagement with ongoing professional learning;
➤ less well prepared in Classroom management, Professional engagement with parents/carers and the community, Assessment and the provision of feedback and reporting on student learning, and Teaching culturally, linguistically and socio-economically diverse learners;
➤ more effective as beginning teachers in Professional ethics and Engagement with ongoing professional learning; and
➤ less effective in Teaching culturally, linguistically and socio-economically diverse learners, Design and implementation of the curriculum, Pedagogy and Assessment and the provision of feedback and reporting on student learning.

Graduate teachers' sense of effectiveness as beginning teachers was informed by successful students' learning, positive feedback from more experienced teachers, students and parents, and also by their own developing sense of confidence in making pedagogical and curriculum decisions. However, they often attributed their effectiveness to their own hard work and assistance from mentors.

Teacher education was credited with giving graduate teachers 'the tools' to work with and their effectiveness as a teacher built on this foundation. Graduate teachers argued that the preparation provided by their teacher education programs could have been enhanced by more time spent in schools, more time on strategies for teaching and less theory. Principals supported this thinking.

The two dynamic factors found to have the greatest bearing upon perceptions of preparedness and perceptions of effectiveness were employment and workplace context; those who were employed on an ongoing, permanent basis felt that they were better prepared and more effective in comparison to those in casual/contract positions, and graduate teacher perceptions were mediated by the workplace context.

2. What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of school settings?

Teacher education program characteristics were considered alongside graduates' perspectives on their preparedness and information about the schools in which the graduate teachers were working. While perceptions of preparedness were not often able to be causally linked with particular characteristics of teacher education, most of the graduate teachers felt as prepared by their teacher education program as they could be. They stated that teacher education provided foundational knowledge and skills upon which ongoing learning of teaching in context continued.

The Graduate Teacher Surveys revealed respondents were more likely to agree than to disagree that their teacher education program prepared them for their work as teachers, regardless of the school contexts in which they were employed and the teacher education programs they completed. This suggests that for graduate teachers working in Victoria and Queensland, there is value and quality represented in Australian teacher education.

➢ Over three quarters of graduate teacher respondents agreed that the knowledge gained during their teacher education program was important and two thirds of respondents believed it helped prepare them for their current teaching context.

➢ Perceptions of preparedness for the longitudinal sample revealed higher levels of agreement than disagreement; that is, on average, participants agreed rather than disagreed that their teacher education program prepared them to teach. This trend was also evident in each individual survey round.

Teachers' personal characteristics and school characteristics

➢ Teachers' personal characteristics and school characteristics, as measured in the surveys, appeared to account for little of the variance in overall perceptions of preparedness. Being female, working in a school with smaller numbers of Aboriginal and/or Torres Strait Islander students, speaking a language other than English and having previous industry experience were all positively correlated with perceptions of preparedness, but the effect size for these characteristics was generally small.

Program type

➢ Graduate teachers with Master's or Bachelor's qualifications perceived themselves as more effective than those with Graduate Diploma qualifications. Similarly, while a clear majority of graduate teachers reported that they were well prepared by their teacher education program, of those who said they were not, higher proportions had completed a Graduate Diploma than had completed Master's or Bachelor's teacher education degrees.

➢ Those with a Master's degree were more likely to agree that the knowledge gained through university-based units was important and helped prepare them for their current teaching context, than graduates with Graduate Diploma qualifications.

➢ Analysis of data for the Round 2, 3 and 4 Graduate Teacher Surveys indicates that graduates with a Master's or a Bachelor's degree perceived themselves as better prepared for teaching and more effective than their colleagues who had completed a Graduate Diploma. Though these differences are relatively small, the consistency of the findings suggests this was a persistent trend.

Program content

➢ Although the majority of participants regarded themselves as prepared and effective they did not consistently attribute this to the content of their teacher education programs. This raises questions about the content of teacher education programs, but also about the ability of the programs to make explicit the relationship between professional knowledge and professional practice.

Professional experience

The teacher education program mapping process shows considerable variation in professional experience processes and structures across the country. In almost all case studies, professional experience was identified as the core of learning teaching.

According to the graduate teacher survey respondents:

➢ Skills developed during the supervised practicum component of professional experience were important (95 per cent agreement).

➢ The practicum prepared them for their current teaching context (approximately 90 per cent agreement across the survey rounds) irrespective of the ways in which it was structured – days per week or blocks of time in schools. However, participants reported feeling better prepared if they had a practicum in a similar type of setting to the school in which they were employed.

➢ Those who completed an internship (the definition of which was not universally agreed) felt slightly better prepared.

Having a practicum in a school similar to place of first/early employment impacted positively upon perceptions of preparedness and effectiveness. This is significant given the large number of programs that are based in metropolitan areas, and the number of employment opportunities in regional contexts.

The case studies and responses to open-ended questions identified numerous views about where teacher education might be improved, including opportunities for extending professional experience components of the program and for better preparing graduate teachers for the challenges associated with managing classrooms and creating safe and supporting learning environments.

Commonly identified strengths of teacher education programs included high quality university teaching staff, valuable practicum experiences and opportunities for practical application of

professional knowledge in assessments and other activities that afforded theory-practice links.

3. How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

The career pathways of graduate teacher respondents were influenced by multiple factors including the professional capabilities that graduate teachers developed as a result of their teacher preparation, the conditions of the current job market and employment opportunities, and particular workplace conditions. The following summarises the findings in relation to employment, mobility and retention.

Employment

➢ Graduating from a teacher education degree and gaining an initial full-time ongoing position, with the likelihood of a permanent position to follow, no longer constitutes the norm for Australia teacher education graduates

➢ Graduates of Bachelor's teacher education degrees were more likely to be employed in full time permanent positions. Graduates with Graduate Diploma qualifications were less likely to be in full time permanent positions and more likely to be part time permanent or casual.

➢ In the first three years of employment, graduate teachers were more likely to move to full time or part time permanent positions and less likely to be employed on a casual basis.

➢ Metropolitan schools had the largest demand and approximately 65 per cent of SETE graduate teachers who were in the teaching workforce worked in schools in major cities. This proportion of graduate respondents employed in schools located in major cities remained fairly constant over the time of the project, as did those in inner regional areas (slightly over 20 per cent). Teachers employed in outer regional, remote and very remote schools constituted approximately 12 per cent of all SETE respondents with a teaching position.

➢ Graduate teachers with a specialisation in mathematics or in special education were more likely to be working in their specialist area.

➢ 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 third or fourth year after graduation.

Mobility

➢ The main reason for teacher mobility was better employment opportunities.

➢ The lack of job security was the most common reason given by graduate teachers for leaving the teaching profession and was a concern raised by many who chose to stay.

➢ Most graduate teachers stayed to teach in the state/territories in which they had completed their teacher preparation.

➢ Of the Round 3 respondents, 29 per cent taught in schools in areas where they lived prior to entering the university program and about 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 2011 graduates 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.

➢ The patterns of mobility 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.

Retention

➢ There are important links between teachers' sense of being effective, their satisfaction with their work and retention.

➢ Teachers' decisions to remain in their schools and in teaching are influenced by a combination of the intrinsic and extrinsic rewards that they receive in their work. Intrinsic rewards include such things as their capacity to make a difference and effectively contribute to students' learning, the enjoyment of teaching and working with children, developing new teaching and leadership skills, etc.

➢ When schools develop and maintain support systems for new teachers that include serious mentoring and induction that are oriented on improving professional practice, teachers are more likely to stay in their school and are less likely to move to other schools or leave teaching.

The contribution of SETE: Thinking about a 'transitional teacher education'

Overall, the large-scale and longitudinal SETE study highlights the messy, non-linear and sometimes unexpected ways of learning teaching that problematize generally accepted ways of thinking about graduates' preparedness for teaching by their teacher education programs and their effectiveness as early career teachers. SETE findings and analyses suggest that preparing, supporting and retaining high quality early career teachers requires a reconsideration of teacher education across the real and/or perceived divides created by the dichotomies embedded in policy talk globally. It explicitly supports notions that schooling and educating teachers be viewed as a collective responsibility between universities, schools, systems and communities within a newly created real or imagined third space.

The SETE study has produced a wealth of evidence for further close analysis and reflection. Policy and practice changes, if they are to be future focused and meet changing community expectations of the university and schooling sectors, will benefit from the evidence that this large scale mixed method project has generated. Connecting teacher and student learning and examining the impact of social, cultural and institutional influences on teaching and learning (see Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills & Stern, 2015) are a next step.

1. Context for the study

Teacher education is, and has been for some time, a highly scrutinized domain in Australia. In the last decade alone there have been no fewer than forty reports on various aspects of teacher education and since the 1970s more than 100 reviews (for example Auchmuty, 1980; Caldwell & Sutton, 2010; Committee for the Review of Teaching and Teacher Education, 2003; Ebbeck, 1990; Education and Training Committee, 2005; House of Representatives Standing Committee on Education and Vocational Training, 2007; Ramsey, 2000). These reports have made a range of recommendations for changes to teacher education such as entry requirements, the length and content of the programs, the length and design of professional experience and partnerships with schools, professional standards for teaching, certification, induction and ongoing professional development.

Teacher education attracts this attention because it is often positioned as a mechanism for achieving pressing or urgent political agendas (Bates, 2005). One example is the current attention to global and economic competitiveness as measured by indicators like the Programme for International Student Assessment (PISA) and the policy decisions about teacher education being framed according to the logic: 'the improvement of student performance through the improvement of teachers via the improvement of teacher education' (Bates, 2004, p.119). In this way, teacher education has increasingly been positioned as a 'policy problem'.

> When teacher education is defined as a policy problem, the goal is to determine which of the broad parameters that can be controlled by policy-makers (e.g., teacher testing, subject matter requirements, alternate entry pathways) is most likely to enhance teacher quality. (Cochran-Smith, 2008, p.273)

Interestingly, this sustained 'improvement' agenda has actually produced relatively little in the way of fundamental change in teacher education (Bates, 2007) and despite frequent criticism, teacher education —as a field—has not articulated a response that speaks to the effectiveness of teacher preparation programs (Rowan, Mayer, Kline, Kostogriz, & Walker-Gibbs, 2015). This is consistent with the situation in other countries. After a four-year review of preservice teacher education research in the US by the American Educational Research Association's Panel on Research and Teacher Education, Zeichner concluded:

> The main issue in our view is to develop a research program in teacher education that can address the variety of questions that investigators seek about teacher education and its connections to the various kinds of outcomes important to society. (Zeichner, 2005, p.738)

The panel pointed out that there was little evidence of a shared research program linking teacher education with professional learning and impact on student learning outcomes. Without a substantive research base to support decisions around the best curriculum, pedagogy, theory and practice for teacher education, it is difficult for the field to defend itself against criticism. As Grossman (2008) has noted, a significant problem for teacher education relates to the fact that 'as researchers and practitioners in the field of teacher education, we seem ill prepared to respond to critics who question the value of professional education for teachers with evidence of our effectiveness' (p.13). Grossman goes on to claim that 'the ability of a profession to sustain its jurisdiction lies partly in the power and prestige of its academic

knowledge' (pp. 53-4), highlighting the fact that, in the US as in the rest of the world, research in teacher education currently lacks both. As she argues:

> To respond effectively to critics, university-based teacher educators must be able to prove credible evidence of the effectiveness of their practice in preparing teachers. (Grossman, 2008, p.14)

Reviews of teacher education research have concluded that the research base relating to effectiveness and impact is characterised by isolated, often unrelated and small-scale investigations (Cochran-Smith & Villegas, 2015; Cochran-Smith, Villegas, Abrams, Charvez-Moreno, Mills & Stern, 2015; Cochran-Smith, 2005). In Australia, Murray, Nuttall and Mitchell concluded:

> The scope and scale of the research can be attributed to a variety of factors, including the relative newness of teacher education research as a legitimate field of empirical investigation, the relatively small-scale funding that teacher education research is able to attract, and a recognition within the field of the importance of investigating aspects of one's own practice in order to both understand and improve teacher education pedagogy. (Murray et al, 2008, p.235)

This perceived lack of evidence has informed regular calls in Australia for large-scale research projects to investigate the value of teacher education, many of which are underpinned by the expectation that such studies will provide generalizable and definitive 'answers' to inform 'best teacher education practice'. Indeed, the very first national review of teacher education in 1980, the Auchmuty Report, recommended that teacher education research should include 'longitudinal studies of the socialisation of teachers, covering . . . the early years of teaching, with particular reference to the acquisition of professional attitudes and values' (Auchmuty, 1980, p.218). Twenty-two years later, the Australian Commonwealth Government's Productivity Commission highlighted the need for an evidence base to evaluate teacher preparation and also track the subsequent performance of graduating teachers (Productivity Commission, 2012) (see also Education and Training Committee, 2005). Nationally and internationally, these types of studies are rare.

Internationally, some researchers have explored questions of effectiveness by following teacher education graduates into their early years of teaching. The Teacher Pathways Project in New York City in the US, for example, (Centre for Education Policy and Analysis, 2012) is investigating different pathways into teaching, the characteristics of those programs and the impact of those characteristics on a range of things, including student achievement in reading and mathematics (Boyd et al., 2006; Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009). Work in the Australian context (Louden, Heldsinger, House, Humphry, & Darryl Fitzgerald, 2010) has identified only that it is important to recruit well-qualified entrants to the teaching profession. In the Netherlands, Brouwer and Korthagen (2005) conducted a 4.5 year longitudinal study using quantitative survey data as well as in-depth qualitative data designed to evaluate effects of a program intended to improve the integration of theoretical and practical learning. 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, including: i) the reasons that some did not complete their ITT, others completed but did not take up a teaching post, and others took up a teaching post but subsequently left the profession; and ii) the extent to which beginning teachers' experiences of ITT, induction and early career progression, and their retention or

attrition, were subject to variation relating to the ITT route that they followed. And while not explicitly focussing on the effect of teacher education, the 'Variations in Teachers' Work, Lives and Effectiveness' (VITAE) project (Day, Stobart, Sammons, & Kington, 2006), focused on identifying variations in different aspects of teachers' lives and work and examining possible connections between these and their effects on pupils as perceived by the teachers themselves and as measured by value-added national test scores (Day, Kington, Stobart, & Sammons, 2006; Day, Stobart, et al., 2006). What most of these studies highlight is the complexity of studying the effectiveness of teacher education, which is contrary to the linear, cause-and-effect framing of teacher education and beginning teacher effectiveness often being sought by policy makers.

More recently, Sleeter's analysis of almost 200 articles published in 2012 in leading international teacher education journals 'did not see evidence of an emerging, shared research program designed to inform policy' (2014, p.151). As she concludes:

> The problem […] is that the weight of the research, being fragmented, often narrowly focussed, and usually not directly connected to a shared research agenda on teacher education, does not position teacher educators strongly to craft an evidence-based narrative about teacher education that might counter policies and reports like the NCTQ's[1]. (Sleeter, 2014, p.152)

She suggests that teacher education organisations should collaborate and develop a research agenda that links teacher education with its impact on teachers and on students, focus more on preparation for and rewarding of research that contributes to building a knowledge base, and emphasise collaboration amongst researchers. Similarly, the Report of the *BERA-RSA Inquiry into the Role of Research in Teacher Education* highlights the 'need for more research that looks systematically at the effectiveness of different types of teacher education' (BERA, 2014, p.37).

It is important to acknowledge that the findings from the many small-scale studies of teacher education have informed teacher education practice in valuable ways. Nevertheless, these studies do not produce the data sets that policy makers generally appear to be seeking; indeed they never set out to do so. The prevailing view is that this body of work has not and does not systematically build a knowledge base for teacher education. In this absence, attention turns to the quality of the entrants into teacher education and control of the content of the teacher education curriculum as proxies for ensuring quality beginning teachers for the profession.

Moreover, despite the attempts to follow graduates into their early teaching appointments in the projects noted above, researchers have questioned the value-add of teacher education in terms of impact on student learning. In the US for example, examination of various forms of standardised student tests at points in time have been promoted as valid measures of teacher education graduates' impact (and therefore a teacher education program's impact) on student learning. However, researchers have critiqued these approaches (see for example Cochran-Smith, Cannady, et al., 2012; Cochran-Smith, McQuillan, et al., 2012; Kennedy, Ahn, & Choi, 2008). But it remains that teacher education is still not in a position to speak back with authority and confidence to questions about the effectiveness of teacher preparation.

Teacher educators in Australia therefore find themselves in a difficult position. On the one hand they are repeatedly asked to defend the quality and impact of their work—and,

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[1] A 2013 Report from the National Council on Teacher Quality concluding that preservice ITE is mired in mediocrity and does not improve student learning.

specifically, their ability to prepare effective teachers—while lacking access to the kind of large-scale data sets that might best allow them to contest this positioning to policy makers and other stakeholders who have specific beliefs about what counts as valid research for informing policy decisions.

In response—and in recognition of the key role played by teacher education in Australia—the Studying the Effectiveness of Teacher Education (SETE) project set out to provide a large-scale, longitudinal evidence base to respond to the question 'What is the value of teacher education?' The study therefore makes a unique contribution to teacher education research and provokes a new kind of discussion about the character, impact and outcomes of teacher education in Australia.

2. Overview

The 'Studying the Effectiveness of Teacher Education' (SETE) project was designed to investigate the effectiveness of teacher preparation for early career teachers employed in diverse settings across Australia. Therefore, when we refer to teacher education, reference is, in the main, to initial teacher education. SETE has been a four-year longitudinal study funded by the Australian Research Council in partnership with the Victorian Institute of Teaching (VIT), the Queensland College of Teachers (QCT), the Victorian Department of Education and Early Childhood Development (DEECD, now known as the Victorian Department of Education and Training (DET)), and the Queensland Department of Education Training and Employment (QDETE). It followed 2010 and 2011 graduates from initial teacher education in Queensland and Victoria to investigate their perceptions of the effectiveness of their teacher education programs for their first teaching positions, and their career pathways. In addition, it investigated their principals' perceptions of the graduate teachers' effectiveness. It is the first of its kind in Australia in terms of breadth and scope, involving nearly 5,000 early career teachers and 1,000 principals. The specific research questions that guided the study were:

1. How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

2. What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of school settings?

3. How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

The approach used in SETE to investigate these questions aimed to problematize the 'crisis' discourse noted above as well as challenge the notion that there are essential 'truths' or best practice models suitable for every circumstance. As Florio-Ruane reminds us, studies of teaching and teacher education are

> … responsive to problems of practice. However, when these problems are framed rhetorically as crises, we are apt to respond to their urgency by seeking simplicity, authority, and order in our research. … We should resist (a) pitting approaches to research against one another, (b) privileging approaches merely because they are compatible with the language of policy, (c) accepting uncritically any approach to research, and (d) disregarding research emphasizing local knowledge. (Florio-Ruane, 2002, p.205)

Likewise, terms such as 'teacher education' and 'teacher effectiveness' are not always similarly understood by all those involved in the education of teachers. In SETE, we argued that there are multiple ways of thinking about and enacting teacher education that involve different, but related, spatial practices. In this way, teacher education is not a singular construct but a set of representations, practices and experiences that are socio-spatial and relational in their nature. We used the work of Lefebvre (1991) and Soja (1996) to think about the spaces where teacher education is understood differently: the conceived space; the perceived space; and, the lived space – spaces that are both real and imagined. In each space, 'teacher education' and 'teacher effectiveness' can have different meanings. This framing for the SETE study is discussed in detail in Rowan et al (2015) as a way of understanding the experiences of beginning teachers as they transition from universities to schools and their lived sense of preparedness and effectiveness.

The conceived space of teacher education is where policy is articulated and where politically motivated ideas about desirable and 'effective' teacher education are constructed. Notions about quality teaching and preparation for teaching are debated, desired standards set, and teachers' and teacher education's performance is monitored. This space is characterised by a focus on global economic competiveness and the imagined necessary neoliberal policies and responses, as outlined above. It is also characterised by accountability rhetoric and surveillance (Soja, 1996), including the setting and monitoring of standards with success indicators often including results on standardized tests. Moreover, in recent times, this has involved a 'new professionalism' with notions of teacher professionalism being reconstructed to be more closely aligned with governments' reform agendas.

The perceived space of teacher education is the space of professional knowledge and its production. It is where teacher educators 'make judgments about the knowledge, skills and dispositions required of future teachers' (Rowan et al., 2015, p.9). What is valued in this space is not static, but rather shaped by understandings of what constitutes competent practice in the particular period. These practices and understandings are in-turn embedded in teacher education programs, informing what students study, how they are assessed and where and when they undertake practical experiences in schools.

Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills and Stern (2015) suggest that teacher education researchers who are also teacher educators are primarily focused on research that generates knowledge about how to improve the contexts where pre-service teachers learn to teach and, in addition, their 'readiness' and 'suitability' to teach. Research about relationships between professional learning and teachers' lives and exploration of theory-practice interactions occur in this space (Rowan et al., 2015). This lived space of teacher education is where knowledge is acquired and developed in the workplace. In this space, teachers' perceptions of teacher education both before and after graduation are the foci. The enactment of academic knowledge occurs in the lived space (Rowan et al., 2015). The lived space frames professional identity as unstable recognising that teachers are developing in practice. This space attends to action and reflection, and is concerned with the influence of emotions and relationality on practice. Understandings of the theory-practice divide are interrogated in this space (Rowan et al., 2015).

> … although people perceive, conceive and live in all three spaces simultaneously—they are not discrete, separate 'realities'—the tactical differentiation of spaces enables us to distinguish dominant and more specific ways of graduates' engagement with teacher education across time and across space. (Rowan et al., 2015 p.286)

Thus, consideration of the conceived, perceived and lived space of teacher education provides opportunity for researchers to develop and respond to the various understandings of 'effectiveness' that permeate teacher education. It invites examination of the layers of factors that influence teachers' effectiveness and is sensitive to dynamics between the teacher education program, the individual, and the workplace. This approach informed the SETE project in its aim to research teacher education designed to move us beyond the somewhat simplistic and narrow debates that characterise much of the current discourse.

The research questions recognised the three spaces of teacher education and the approach to data collection aimed to ensure that the three spaces were adequately investigated. Thus, the research was i) large-scale capturing input from a range of participants across all spaces, ii) longitudinal, capturing input over time, and iii) drew on both quantitative and qualitative data to examine notions of effectiveness in different spaces.

The SETE study was conducted concurrently with the *Longitudinal Teacher Education Workforce Study* (LTEWS), which 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. LTEWS built on the SETE framework and 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. The LTEWS final report is available at: https://docs.education.gov.au/documents/ltews-main-report. SETE findings were not informed by LTEWS.

3. Approach

SETE employed a mixed method approach. The methodological caveat that teacher education research 'is not simply a matter of assessing its methodological and conceptual outputs, but of interpreting larger political controversies and competing policy agendas' (Cochran-Smith et al. 2012 p.9) was central to this study and the framing of the findings. We acknowledged that no single outcome or research design is likely to capture the total impact of initial teacher education (Cochran-Smith & the Boston College Evidence Team, 2009; Ludlow et al., 2010) and therefore the SETE methodological approach engaged multiple-methods to collect, record and analyse data sets over time.

A recursive strategy, combining on-line survey research, database analysis/contextual mapping and case studies was used with first round case study data informing development of the first round survey instruments. Initial survey findings then informed second year case study foci. This pattern continued over the four-year data collection period. Each of the methods thus produced stand-alone as well as mutually informing longitudinal findings.

3.1 Mapping initial teacher education

At the outset of the project, a national point-in-time review of the programs relevant for the 2010-2011 graduate teacher cohort was conducted. This mapping provided a record of the length, structure and delivery of the programs; professional experiences; program content and approaches; the integration of theory and practice; and, measures of entry into the programs. The identification of publicly available online information about teacher education programs accredited by all Australia teacher regulatory authorities, was coupled with a verification process that involved interviews with provider representatives at most of the

institutions. The review of teacher education programs was conducted from October 2011 to February 2012, by SETE and LTEWS researchers in collaboration.

3.2 Surveys of graduate teachers and their principals

The main target population for the large-scale quantitative component of the research was new teachers: a) registered with either the VIT or QCT; and b) who graduated from a teacher education program in either 2010 or 2011. The size of the cohort was 15,034, with VIT having registered 9,181 newly qualified teacher education graduates October 2010 - February 2012 inclusive and QCT 5,853 teachers. The secondary target population was the school principals in those schools where the graduate teachers were employed.

Surveys of graduate teachers enabled the researchers to investigate their perceptions of how well their teacher education program prepared them for beginning teaching, to understand the experiences of their early years of teaching and to monitor their career progression. We consider perceptions in terms of teachers' attitudes and beliefs (Klieme & Vieluf, 2009; Löfström & Poom-Valickis, 2013) about their own preparedness and effectiveness in relation to context (Alton-Lee, 2003) and personal qualities and variables (Beijaard, Verloop, & Vermunt, 2000). For more information about the use of perceptions in this research refer to Mayer, Dixon, Kline, Moss and Ludecke (2014).

Question construction was based upon a review of the relevant literature, discussions with experts in the field, and previous research and surveys used to investigate graduate teachers' early career experiences as well as their perceptions of their teacher education programs, including:

- Staff in Australia's Schools teacher questionnaire 2007 and 2010 (McKenzie, Kos, Walker, Hong, & Owen, 2008; McKenzie, Rowley, Weldon, & Murphy, 2011);
- Australian Education Union new educators survey 2008 (Australian Education Union, 2009)
- VIT 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 (DEST, 2006)
- Australian Graduate Survey (Graduate Careers Australia, 2011)
- Teaching Australia – Study of the effectiveness of teacher education: 2008-2010 (Louden et al., 2010); and,
- Teacher Pathways Project (Survey instruments) (Boyd et al., 2006).

Surveys collected teacher demographic information (such as age, gender, country of birth, teacher education program completed, university location, school location, and responsibilities within the school) and covered reasons for selecting teaching as a career, and any prior occupation. Questions about early career teacher perceptions of their preparedness to teach were initially presented to graduate teachers in the form of 46 statements to which they could agree or disagree. To reduce the number of items for the subsequent rounds, sub-scales with subsets of indicator variables were created for nine areas of teaching (see Section 4.2.3 for more information). The sub-scales were informed by the literature (e.g. Alton-Lee, 2003), previous surveys (e.g. McKenzie et al., 2011), and the Australian Professional Standards for Teachers (Australian Institute of Teaching and School Leadership (AITSL), 2011b). In Rounds 2, 3 and 4, only statements about the teaching areas reflected in the sub-scales were

included. In these subsequent rounds, graduate teachers were asked not only about their preparation for teaching, but also about their effectiveness as early career teachers.

The nine sub-scales were:

- Teaching culturally, linguistically and socio-economically diverse learners
- Design and implementation of curriculum
- Assessment and the provision of feedback and reporting on student learning
- Pedagogy
- Classroom management
- Professional engagement with parents/carers and the community
- Collegiality
- Professional ethics
- Engagement with ongoing professional learning

These sub-scales were coupled with a series of questions that examined graduate teachers' relationships with students and statements linked to the seven Australian Professional Standards for Teachers (AITSL, 2011b).

Participants identified links from the sub-scale foci to the characteristics of their teacher education programs. A series of core questions, repeated in each of the four Graduate Teacher Surveys, used Likert-scale responses. Comparable questions were included in the three Principal Surveys to allow responses from graduate teachers to be read against data collected from their school principals and associated with school characteristics (including school location and student population demographics). Likert-scale data were analysed by the sub-scales, and techniques such as factor analyses and analyses of variance were used to examine associations. Sample representativeness was tested against the whole cohort as defined by the regulatory authorities in Queensland and Victoria, and compared to existing collections of data from graduate teachers. An overview of the technical considerations associated with survey development and analysis are outlined in the SETE Technical Report (Mayer, Allard, Bates, Dixon, Doecke, Hodder, Kline, Kostogriz, Rowan, Walker-Gibbs & White, 2014).

3.3 Case studies

Intensive case studies of schools employing teachers who graduated 2010 - 2011 were conducted over the duration of the study in two states of Australia, Queensland and Victoria. The purpose of the case studies was to investigate in detail the 'lived spaces' of teacher education and to allow teachers sustained opportunities to reflect upon and critically analyse their preparation for teaching and the effectiveness of their work.

3.3.1 Site selection

Selection of the case study sites sought to capture the diverse settings in which graduate teachers begin their teaching careers and to reflect the diverse student populations represented in Australian schools. Cochran and Villegas (2015) have noted that research sensitive to increasingly diverse student populations and growing inequality is critical to teacher preparation research, and ensures that such research is understood to be historically situated.

Thirty government schools in Victoria and Queensland were selected as the case study sites based on a desire to secure maximum variation in relation to:

- Index of Community Socio-Educational Advantage (ICSEA) value
- Percentage of students with language backgrounds other than English
- Percentage of students of Aboriginal or Torres Strait Islander origin
- Number of first year teachers employed
- School location (Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA) Remoteness Indicator)
- Schooling level (primary, secondary, P-12)

3.3.2 Data collection

During late 2011 and early 2012 a total of 110 graduate teachers from the 11 Queensland sites were recruited and interviewed– 65 teachers who graduated in 2010 and 45 who graduated in 2011. In Victoria, interviews were undertaken with 61 graduate teachers from 18 schools – 36 teachers who graduated in 2010 and 25 who graduated in 2011. Interviews also took place with school leaders and principals at most sites, as well as one additional site in Victoria. Twenty-six of the schools were visited at least twice and 12 schools were visited 4-5 times. The majority of graduate teachers employed at the school were interviewed during each visit (noting that some graduates left their school after the first or second interviews). By the end of the project, interviews had been conducted with 197 graduate teachers across 29 schools and 52 school leaders across 30 schools. The movement of new graduates into and out of the schools was closely monitored, with graduate teachers who left being invited to share their experiences of transitioning to new schools and, as applicable, their reasons for leaving the teaching profession. Graduate teachers new to the case study schools were recruited throughout the project, resulting in growth of the sample size over time. This movement is reflected in the tally of graduate teachers reported in early publications and preliminary reports. Visits to three schools discontinued in 2013, one due to school closure, one because the school ceased to employ a graduate teacher, and one where due to staffing demands, school leaders were unable to make graduate teachers available for interviews. A de-identified overview of the case study sites and the number of visits conducted by researchers is available at Appendix 1.

3.3.3 Analysis

The case studies provided rich, complex, qualitative data about graduate teachers' perceptions of effectiveness in regards to student learning outcomes and self-report on links to teacher education programs and teaching contexts. Key themes derived from the literature and characteristics of teacher education programs were identified. Investigators with carriage for each case study site led site-specific analyses using frameworks such as Harré and van Langenhove's Positioning Theory (1999), Gee's work on identity as an analytical lens (2000-2001), and Heidegger's understanding of practice and learning (1927). Analyses are interwoven and tried against the three spaces, the conceived space; the perceived space; and, the lived space of teacher education. The researchers read across the mutually informing datasets.

To ensure all data from the numerous case studies were analysed all members of the team took part in a lengthy period of thematic analysis within and across cases (Ayres, Kavanaugh, & Knafl, 2003). Cross-case analysis involved a coordinated approach to identification of key trends across all case study sites, as well as identification of patterns emergent in similar

school contexts, and/or linked to teacher education characteristics or graduate characteristics. Data were jointly examined, interpreted, questioned and connected to other evidence, ongoing experience, and the larger goals of the project.

This report provides a thematic analysis of the cross case study data, including:

- Perceptions of preparedness
- Perceptions of effectiveness
- The importance of employment practices, school context and culture
- The political context
- Changing sense of professional identity
- The community context

Section 4 provides an overview of the stand-alone findings associated with the various data sets and Sections 5 and 6 discuss the interaction between the methods, relating these findings to our conceptualisation of teacher education and teaching, based on the three spaces – conceived, perceived and lived.

4. Data analysis

The primary target population for the study was Queensland and Victoria teacher education graduates in 2010 and 2011 (registered with the VIT or QCT between October 2010 and February 2012). The data gathered and analysed for the study included:

Employer and regulatory authority databases:
- Information on 4,200+ schools in Queensland and Victoria, including general location, staffing profile and student population data
- De-identified graduate teacher registration records (gender, age and teacher education information only)

This information was used in the analysis of the survey data and in the selection of the case study schools.

Mapping of teacher education programs:
- Key characteristics of 551 programs derived from online analysis of relevant websites
- Interviews with teacher education providers to confirm and clarify the online analysis

Surveys of graduate teachers and principals:
- Four rounds of graduate teacher surveys over three years, 2012-2014
- Three rounds of principal surveys over two years, 2012-2013

In total 4,907 graduate teachers contributed to the survey data. This equates to about one third of the target population of graduate teachers. These teachers contributed a total of 8,460 responses, with about half of the respondents participating in two or more survey rounds. Responses from principals totalled 1,001 across the three rounds.

Case studies of schools
- Interviews with 197 graduate teachers from 29 government school sites across Queensland and Victoria
- Interviews with the principals of the case study schools and, where possible, interviews with the school leaders at these schools who were responsible for the

orientation and induction of graduate teachers – 52 principals and school leaders interviewed
➢ Up to five visits per site over 3-4 years

Case study site demographics are provided in Appendix 1.

Development and analysis of each of the above data sets are described in sub-sections 4.1 to 4.3. A summary of key findings from the longitudinal analysis of the graduate teacher surveys is found in section 4.4 of the report.

4.1 Mapping of teacher education programs

The national mapping of teacher education programs provided a point-in-time review of preparation programs across Australia between late 2011 and early 2012, these being the programs of relevance for the graduate teachers being followed for SETE. Three aspects of the teacher education programs were analysed:

1. Teacher education structures
2. Teacher education approaches
3. Measures of entry into teacher education programs

All accredited teacher education programs across Australia, not just those offered in Victoria and Queensland, were examined in recognition that teachers do not necessarily work in the jurisdiction in which they complete their teacher preparation. The data was collected by desktop analysis and a total of 551 programs from 47 providers across Australia were reviewed. Then telephone interviews were conducted with personnel from each provider to verify the data. The mapping data was used in the analysis of the teacher and principal survey responses.

This mapping was conducted concurrently with the LTEWS[2]. The full report of the mapping detailed the teacher education structures, teacher education approaches and measures of entry into teacher education programs 2011-2012 (Mayer et al., February 2013). For completeness of this report, a summary of the findings are provided in the following sections (4.1.1, 4.1.2 and 4.1.3).

4.1.1 Teacher education structures

With the establishment of the Australian Institute for Teaching and School Leadership (AITSL) in 2011 and the development of Professional Standards for Teachers and Program Standards for Accreditation (AITSL, 2011a, 2011b), teacher education programs have undergone many changes in the past few years. Therefore, it must be remembered that the results of this mapping captured a point-in-time overview of teacher education in Australia (2011-2012) in relation to the programs relevant for the cohort being studied.

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[2] The summary of findings from the mapping of Australia teacher education programs draws upon work conducted by the SETE and LTEWS researchers. Pauline Ho, LTEWS Research Fellow, made a significant contribution to the analysis, compilation and reporting of the findings referred to herein. Her contribution is reflected in the analyses that appear in Sections 4.1 and 5.2.

Pathways and duration

Teachers were prepared in multiple study pathways in higher education settings including through: 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 programs after an initial three-year Bachelor's degree in the discipline area. Over 80 per cent of the teacher education programs were based in universities, with the others offered by public and private colleges or TAFEs.

Of the 38 universities that offered teacher education programs, 37 were public universities and one was a private university. A majority of the 551 teacher education programs reviewed were Bachelor's degrees (72 per cent). Seventeen per cent were Graduate Diplomas and 11 per cent were Master's.

The programs ranged in length from 1-5 years. The majority of undergraduate teacher education programs were offered over four years or part-time equivalent (63 per cent). In total, 15 per cent were recorded as one-year programs. Two per cent of Bachelor's programs had a five-year program structure that were commonly double degree programs, such as a Bachelor of Arts/ Education (Secondary: Humanities and Social Sciences) or Bachelor of Education/ Bachelor of Arts in International Studies.

Out of 551 programs, 17 per cent were 18 month or two year programs.

Structure and delivery

Teacher education was offered in flexible ways. Out of 497 teacher education programs, more than three quarters were offered in full-time mode with part-time options, while 14 per cent were offered in external and/or distance modes. Of the 401 programs that identified year levels that the programs' graduates were prepared to teach, a majority of them offered preparation for primary teaching (n=306) and early childhood/primary (n=66).

Providers were asked about the key distinguishing feature of their programs. A majority identified social justice as a distinguishing feature underpinning the philosophy, content and structure of their programs. Others emphasised discipline/method knowledge and forging community and school-university partnerships.

Providers were also asked about the attributes they valued in their preservice teachers. Many valued preservice teachers who possessed what they saw as personal values and attitudes appropriate to the discipline and/or profession. Others valued intellectual curiosity and critical thinking, demonstrated commitment to ethical and sustainable practices, devotion to the profession, and effective communication.

Professional experience

Professional experience was considered an important requirement of all the teacher education programs. Terms and definitions of professional experience and its components varied across jurisdictions and between different providers. However, it generally included supervised practicum (sometimes called student teaching or teaching practice), un-supervised field-based community or school observations, and internships with the intern under the general supervision of a mentor. The mapping focused on the key characteristics of professional experience, including its structure and delivery as well as the arrangements and

pathways from a total of 476 teacher education programs accessible through university websites. The inaccessibility of information for some programs from websites made it difficult to both identify and verify the data.

The minimum professional experience requirements were established by the respective regulatory authority and all teacher education programs would have met those requirements in order to be accredited. The desktop mapping of teacher regulatory authorities' websites showed that the legislated minimum number of supervised practicum days in schools at that time was 80 days for four-year undergraduate programs and 45-60 days for 1-2 year programs. However, the supervised practicum days varied across jurisdictions as the mapping process was conducted prior to the introduction of national requirements. Of the 457 programs that provided information on the supervised practicum days, more than 50 per cent of the providers indicated that they offered professional experience days in excess of the relevant regulatory authority's minimum requirements. A total of 476 teacher education programs conducted supervised practicum in blocks of five days a week over one or more weeks and most had a combination of block periods and 1-2 days of placement in schools. Observation days were usually incorporated in the early stages of the professional experience program, providing early opportunities for observation in classrooms. Some programs included experience in community settings in addition to the supervised practicum days. Out of 429 programs, 82 per cent of them offered practicum in the first year (Note: 1-year programs are included in this data) though double degrees typically did not have practicum in the first year.

Internships were usually seen as a bridge helping preservice teachers to transition from teacher education into employed teaching in schools. Internships were generally 6-12 weeks in duration. Over 43 per cent of the programs reported including internships as part of the professional experience. Internships were more likely to be available in the Bachelor's degrees than the Graduate Diploma or Master's programs. However, because of the different ways in which the term 'internship' was used, definitive conclusions about internships across programs were difficult.

4.1.2 Teacher education approaches

The mapping reflected a diversity of approaches and preferences regarding the delivery of teacher education programs. However, all programs adhered to the guidelines for accreditation requiring two years of study in discipline area(s) for preservice teachers undertaking four-year undergraduate programs. In the primary teaching programs, preservice teachers studied discipline-based units and curriculum or methods units for all key learning areas. Interviews with the providers revealed that most teacher education programs embedded the preparation to teach culturally, linguistically, and socio-economically diverse learners and ICT throughout the program curriculum rather than in stand-alone units. Providers reported that graduate teachers had to possess a high level of personal literacy and numeracy. Primary teaching preparation focussed on teaching 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 focussed 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

Connections between theory and practice in teacher education programs were reported as being central for preservice teachers to utilise what they had learnt in universities as they completed their professional experiences in schools and communities. To achieve coherence between theory and practice, some teacher education programs incorporated practicum placements within curriculum and educational studies units while others focused on a particular teaching and learning strategy (e.g., classroom management or learning technologies) during a specific practicum placement.

In interviews, teacher education providers stressed the importance of effective partnerships with schools noting that they provided the foundation for strong theory and practice linkages. Interviews also revealed that providers valued incorporation of professional experiences in tandem with coursework.

4.1.3 Measures of entry into teacher education programs

Selection for entry into teacher education programs varied across jurisdictions. However, applicants for undergraduate and postgraduate teacher education programs generally had to meet the minimum tertiary entrance requirements and pre-requisites for the respective jurisdiction dependent mainly on measured academic ability and competition with other eligible applicants. The Australian Tertiary Admission Rank (ATAR) and results of pre-requisite Year 12 subjects were used as the basis for selection of domestic students into many undergraduate teacher education programs. A range of other selection processes included interviews, portfolios, and auditions particularly for programs with Fine Arts and Music specialisations. A small proportion of programs used other selection criteria in combination with academic results to supplement the entry selection, which included character references, and special access provisions that considered residential location, socio-economic status and evidence of prior learning.

While there was a minimum ATAR requirement for entry into most undergraduate teacher education programs, some providers offered bridging programs specifically designed to provide pathways for applicants with a lower ATAR to seek entry into teaching. Further, Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) data shows that in 2011 ATAR was the determining factor for entry into teacher education programs for only 40 per cent of domestic undergraduate students and 27 per cent of all students — 72 per cent of all undergraduate teacher education program candidates were granted entry based on measures other than ATAR (AITSL, 2013; DIISRTE, 2012).

4.2 Graduate Teacher Surveys – Point in time analyses

The Graduate Teacher Surveys collected data on graduate teachers' perceptions of how well their teacher education program prepared them for teacher employment in schools and how effective they felt as beginning teachers. The graduate teachers were surveyed four times over three years: Round 1 in March-April 2012; Round 2 in October-November 2012; Round 3 in March-April 2013; and, Round 4 in March-April 2014. Analyses conducted at each survey time-point are summarised in this section (point-in-time analyses). Copies of the Graduate Teacher Surveys are available at http://www.setearc.com.au/data-collection/surveys/. The surveys included categorical, scaled and open-ended questions, including a group of core questions that remained identical for each of the four surveys. Additional questions, often

open-ended questions, were introduced to collect information about emerging themes or graduate teachers' reflections on key items.

Graduate teachers who had provided consent to be contacted for research purposes by VIT and/or QCT, were sent an invitation to participate which included a link to the online surveys. Participants in rounds 2-4 were also sent reminder emails by the survey administrators based at Deakin University. Survey processes were determined in collaboration with the Industry Partners and the SETE Reference Group. Survey fidelity was monitored by the Chief Investigators.

4.2.1 Sample representativeness and response rates

Sample representativeness was considered against the total population of 2010 and 2011 graduate teachers registered in Queensland and Victoria between October 2010 and February 2012. Sixty-one per cent of the population were registered with the VIT and 39 per cent with the QCT. The split of all respondents (n = 4,907) by state of registration was 62 per cent Victoria and 37 per cent Queensland. The remaining 2 per cent were either not registered, were registered in another Australian state or territory, or were registered with more than one teacher regulatory authority. The average age for the sample was 30 years as at March 2012, while the average age for the population was 29 years. QCT records indicate that 77 per cent of the population registered in Queensland were female and 23 per cent male (for the SETE sample the ratio of graduate teachers registered in Queensland was 4:1). VIT records indicate 75 per cent of the Victorian population were female and 25 per cent male (for the SETE sample 76 per cent of respondents registered in Victoria were female and 24 per cent were male).

The distribution of the SETE sample of graduate teachers was compared to teacher demographics reported in:

- Staff in Australia's Schools (SiAS) survey 2010 (McKenzie et al., 2011);
- Former Department of Industry, Innovation, Science, Research and Tertiary Education Student 2010 Full Year and Student 2011 Full Year: Selected Higher Education Statistics (DIISTRE, 2011-2012);
- Australian Education Union (AEU) New Educators Survey 2008 (AEU, 2009);
- Australian Education Union Victorian (AEU-V) Branch 2011 and 2013 New Teachers Surveys (AEU-V, 2011; AEU-V, 2013);
- Australian Bureau of Statistics (ABS) Australian Census 2011, Census of Population and Housing (ABS, 2011a; ABS 2001b); and
- Australian Bureau of Statistics Schools, Australia 2011 (Cat No. 4221.0) (ABS, 2011c).

The distribution of survey respondents was, on the whole, consistent with these collections.

The SETE sample, with females comprising just over three-quarters of all respondents (78 per cent), had a similar proportion of male and female respondents as the AEU-V New Teachers Survey (2013). It had a greater number of casual teachers than is represented in the AEU-V Survey; however, as that survey is concerned only with Victorian teachers working in Government schools, the significance of this difference is unclear.

The SETE sample included a higher proportion of teachers with graduate teacher education qualifications (53 per cent) than for the Australian teaching workforce in 2010 (23 per cent of primary school teachers and 43 per cent of secondary school teachers) (McKenzie et al., 2011).

The SiAS 2010 (McKenzie et al., 2011) and SETE samples were similar in relation to the proportions of teachers identifying as Aboriginal and/or Torres Strait Islander, the proportion of graduates born in Australia, and the graduate teachers' age profile. Sixty-six per cent of the SETE graduate teacher survey respondents were less than 30 years of age (cf. SiAS 2010 early career teachers 30 years old or under: 69 per cent primary, 63 per cent secondary). Less than 1 per cent identified as Australian Aboriginal or Torres Strait Islander. This was about the same as those from the Australian teaching workforce who so identified in the SiAS 2010 survey, but less than those who identify as Indigenous in the Australian population, which was 2.5 per cent (ABS, 2011b).

Appendix 2 provides further comparisons of the SETE sample and other major collections.

In total, 4,907 graduate teachers contributed to the SETE survey data. This represented one third of the target population. Six per cent of respondents participated in all four rounds and 20 per cent in at least three rounds. Over 50 per cent of respondents completed only one of the four surveys.

The response rates per jurisdiction for Rounds 1-4 are shown in Table 4.1.

Table 4.1: Response rate to Graduate Teacher Surveys, Rounds 1-4.

State/Territory	Number of teachers sent an email	Number of teachers that responded	Response rate per jurisdiction %	Overall response rate[5] %
Round 1				9.8
VIC	8,947	904	10.1	
QLD	5,849	539	9.2	
Round 2				20.3
VIC	8,896	1,832	20.6	
QLD	5,740	1,088	19.0	
Other[2]	-	47	-	
Round 3				16.3
VIC[1]	7,141	1,360	19.0	
QLD	5,740	861	15.0	
Other[2]	-	47	-	
Round 4[3]				13.2
VIC	7,776	1,085	14.0	
QLD	5,740[4]	621	10.8	
Other[2]	-	76	-	

NOTES 1. There were 8,460 new teachers registered in Victoria, however only 7,141 indicated that they completed their teacher education program in 2010 or 2011. 2. Indicates 1) teachers who met the eligibility criteria during Round 1 but have either since moved state or allowed their registration to lapse 2) teachers registered in more than one state. 3. 4,348 previous respondents received an additional reminder from the research team. 4. In each round the number of emails that bounced in Queensland was unable to be ascertained. This may account for the smaller response rate for this state. 5. 17.6 in Round 3 if the 7,141 figure is used.

The response rates were calculated by dividing the number of returned surveys by the number of emails sent to eligible graduate teachers. In Round 1, 90 per cent of the returned surveys used to calculate the response rate were 100 per cent completed, in Round 2, 87 per cent, in Round 3, 91 per cent, and in Round 4, 86 per cent.

4.2.2 Graduate teacher demographics

Table 4.2 reports the characteristics of the graduate teachers who responded to the Round 1, 2, 3 and 4 surveys by gender, age, identification as Aboriginal and/or Torres Strait Islander, if the respondent was the first in their family to gain a tertiary qualification, and the main language spoken. In Round 4, a number of these questions were removed in an attempt to reduce the survey burden. It was also recognised that this information would already be available for all graduate teachers who had participated in one or more of the earlier rounds.

Table 4.2: Individual characteristics of graduate teachers

Teacher characteristics	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Gender								
Male	293	20.3	665	22.5	523	23.1	390	21.9
Female	1,150	79.7	2,289	77.5	1,744	76.9	1,392	78.1
Age group at March								
20-24	489	33.9	1,064	35.9	814	35.9	653	36.6
25-29	335	23.2	767	25.9	555	24.5	453	25.4
30-34	165	11.4	331	11.2	252	11.1	186	10.4
35-39	123	8.5	229	7.7	196	8.6	150	8.4
40-44	141	9.8	261	8.8	211	9.3	140	7.9
45-49	105	7.3	160	5.4	133	5.9	99	5.6
50+	76	5.3	125	4.2	91	4.0	93	5.2
Not stated	9	0.6	30	1.0	16	0.7	8	0.4
Aboriginal or Torres Strait Islander								
No	1,423	99.0	1,656	99.3	932	99.1	-	-
Yes	14	0.9	12	0.7	8	0.9	-	-
Tertiary qualification is first in family								
Yes	NA	NA	1,261	42.7	953	42.4	-	-
No	NA	NA	1,689	57.3	1,294	57.6	-	-
English as main language[1] spoken								
Yes, the only language	1,176	81.9	1,411	84.6	808	84.0	-	-
Yes, the main language	155	10.8	166	10.0	104	10.8	-	-
No, but spoken frequently	95	6.6	73	4.4	38	4.0	-	-

No, rarely or never used	11	0.8	18	1.1	12	1.2	-	-
TOTAL	1,443[2]	100.0	2,967[2]	100.0	2,268[2]	100.0	1,782[2]	100.0

NOTES   1. Includes only the participants new in these rounds.

2. Totals are for all responses and may vary between variables. Percentage is calculated on valid responses.

In reading this data it is important to note that the percentages reported are valid per cent unless otherwise stated. Valid per cent does not take into account missing data which occurs when respondents skip questions.

The SETE survey was intended to capture those graduate teachers who completed their teacher education program in either 2010 or 2011. Teacher registration authorities in Victoria and Queensland sent an email to all teachers on their registers who had registered after October 2010. Due to issues such as time lag between completion of program and registration to teach or being able to register as a provisional teacher before completion, the year of completion for graduate teachers did not always match the requested 2010 or 2011, as Table 4.3 shows.

Table 4.3: Graduate teachers by year of completion

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Before 2010	99	7.1	229	8.0	129	6.1	107	6.0
2010	534	38.0	1,088	38.0	844	40.2	771	43.5
2011	732	52.1	1,447	50.6	1020	48.5	839	47.4
2012	23	1.6	87	3.0	96	4.6	54	3.0
Currently completing	17*	1.2	11	0.4	13	0.6	NA	NA
TOTAL	1,405	100.0	2,862	100.0	2,102	100.0	1,771	100.0

*Note this figure contradicts information previously reported by some of the same respondents.

The clear majority of graduate teacher respondents self-reported as 2010 or 2011 graduates – 90 per cent in Round 1, 89 per cent in Rounds 2 and 3, and 91 per cent in Round 4. There were between 2 and 5 per cent who reported completing their teacher education program in 2012. There were also between 6 and 8 per cent who had graduated before 2010, and a small per cent who indicated that they were currently completing at the time of data collection. All graduate teachers' responses, regardless of the year they stated they completed their teacher education program, were retained in the survey data, as they were all identified by the teacher registration authorities as registered to be a teacher after October 2010 and participated after acknowledging that they had read the eligibility criteria. Year of completion was not used as an independent variable for the analyses reported herein.

Characteristics of teacher education programs

In Rounds 1-3, graduate teachers were asked a series of questions about their teacher education programs. In Round 4, respondents were only asked to specify the type of program completed.

In Round 1 nearly half of all graduate teachers (49 per cent) had been enrolled in a Graduate Diploma. Forty-four per cent had completed a Bachelor's degree (including double degrees and Bachelor's Honours degrees), and 7 per cent a Master's degree. These figures were similar to the Round 2, 3 and 4 results, which showed a slightly higher proportion having been enrolled in a Master's degree and fewer enrolled in a Graduate Diploma. Round 2 had a slightly higher number of respondents with a Bachelor's degree than in the other three rounds. The overall proportions are presented in Figure 4.1.

Figure 4.1: Graduate teachers by program type
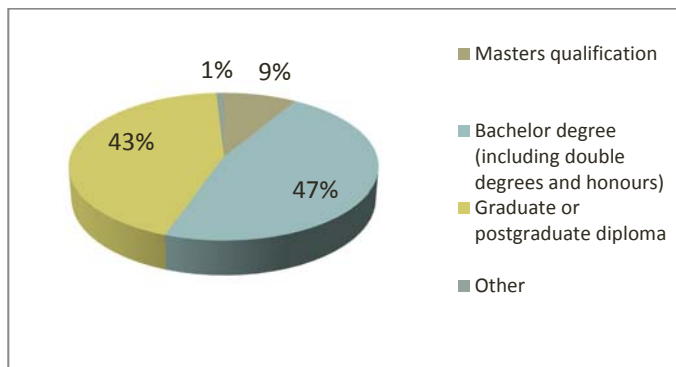
Of all 4,907 graduate teacher respondents, 9 per cent had completed a Master's qualification, 47 per cent a Bachelor's degree and 43 per cent a Graduate Diploma.

The figure below shows the campus location of the teacher education programs the graduate teachers attended. These data, as with data about main area of program (otherwise referred to as the year levels or year range for which the graduate teachers are being prepared to teach, i.e., early childhood) and domestic/international student status, were collected in Rounds 1-3.

Figure 4.2: Graduate teachers by campus location of their program
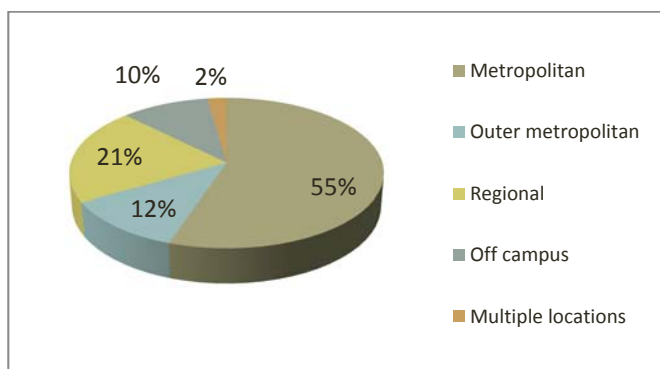
Over half of all the graduate teachers completed their program on a metropolitan campus, and including outer-metropolitan areas takes the proportion in the greater metropolitan

areas to 67 per cent. Slightly over one fifth of graduate teachers attended a regional campus and 10 per cent completed their teacher education program off campus.

The main area of teachers' education programs was divided, from the usual two categories of primary and secondary, into six categories to take into account those graduate teachers who identified as teaching younger, or mixed age groups. The figure below shows the percentages.

Figure 4.3: Graduate teachers by main area of program
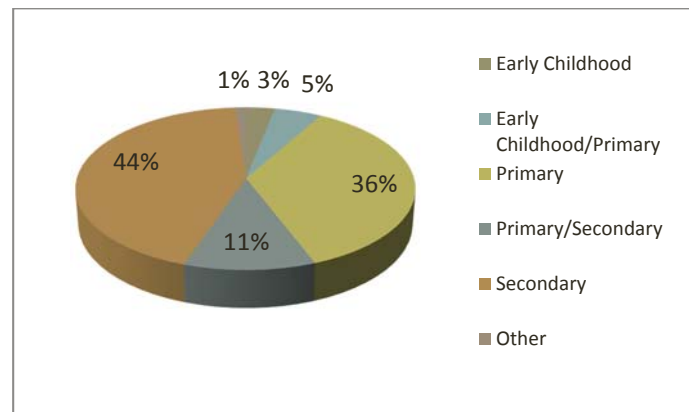
The largest per cent of graduate teachers stated their main area of program was secondary, at 44 per cent. The next largest group of graduate teachers was those in the primary area, at 36 per cent. The primary/secondary category had 11 per cent of graduate teachers stating that as their main area. Eight per cent identified early childhood wholly or partly as their main area of program. The 'other' option included Special Education, English as a Second Language, Middle School and Music.

Domestic students made up 96 per cent of responses to the Graduate Teacher Surveys. This is much higher than the percentage of domestic students in higher education institutions across Australia, which in 2011 was 73 per cent (DIISRTE, 2011-2012).

Graduate teacher qualifications and prior industry experiences upon entry into teacher education programs

SETE provides information about graduate teachers' trajectories into teaching. Many respondents came to their teacher education program with prior qualifications. Across Rounds 1, 2 and 3, 68 to 84 per cent of graduate teachers had other academic or trade qualifications in addition to their teaching qualifications. Taken across the main areas of the teacher education program, the graduate teachers in the early childhood/primary area had the lowest percentage with prior qualifications but this was still 50 to 72 per cent of them. The graduate teachers with the highest proportion of additional qualifications were those in the secondary area of a teacher education program, ranging from 78 to 90 per cent. These data were not collected in Round 4. The table below shows the breakdown of prior qualifications.

Table 4.4: Graduate teachers by highest qualifications in fields other than education

	Round 1		Round 2*		Round 3*	
	n	%	n	%	n	%
Postgraduate degree level	138	14.1	127	12.1	102	13.1
Grad diploma/certificate level	80	8.2	74	7.0	78	10.0
Bachelor's degree level	561	57.4	658	62.6	472	60.4
Advanced diploma or diploma level	74	7.6	83	7.9	35	4.5
Certificate level	125	12.8	109	10.4	94	12.0
TOTAL	978	100.0	1,051	100.0	781	100.0

* Data for Round 2 and 3 includes only the participants new to the study in these rounds.

Of those graduate teachers who stated they had prior qualifications, the majority had a Bachelor's degree (range of 57 to 63 per cent), 12-14 per cent a qualification at the postgraduate level and 10-13 per cent a certificate. As well as qualifications, in Round 1, 48 per cent of graduate teachers also had prior trade or industry experience before coming into their teacher education program. In Rounds 2 and 3, the proportion decreased slightly to 46 and 45 per cent. The industry sector in which this experience took place is indicated in the table below. Results for Round 2 and Round 3 were similar.

Table 4.5: Graduate teachers by experience in another industry sector

	Round 1		Round 2*		Round 3*	
	n	%	n	%	n	%
Agriculture, forestry & fishing	3	1.4	23	3.1	15	3.5
Mining	1	0.5	9	1.2	5	1.2
Manufacturing	6	2.8	34	4.6	20	4.7
Electricity, gas & water supply	-	-	8	1.1	-	-
Construction	2	0.9	26	3.5	19	4.5
Wholesale trade	-	-	6	0.8	5	1.2
Retail trade	29	13.7	98	13.3	64	15.1
Accommodation, cafes & restaurants	8	3.8	89	12.1	44	10.4
Transport & storage	5	2.4	7	1.0	4	0.9

Communications services	6	2.8	48	6.5	29	6.9
Finance & insurance	1	0.5	34	4.6	27	6.4
Property & business services	1	0.5	18	2.4	10	2.4
Government administration & defence	12	5.7	35	4.8	15	3.5
Education	108	50.9	116	15.8	58	13.7
Health and community services	17	8.0	88	12.0	52	12.3
Cultural & recreational services	5	2.4	51	6.9	27	6.4
Personal & other services	8	3.8	45	6.1	49	6.9
TOTAL	212	100.0	735	100.0	423	100.0

* Data for Round 2 and 3 includes only the participants new to the study in these rounds.

A much higher proportion of Round 1 respondents worked in the education sector (51 per cent) compared to Round 2 (15.8 per cent) and Round 3 (13.7 per cent). Along with education, across all rounds, the retail trade and health and community services sectors were the most common industries in which respondents had experience.

Professional experiences in the teacher education programs completed by the graduate teachers

The Graduate Teacher Survey asked graduate teachers how their teacher education professional experience was organised. In the main, teacher education programs offered supervised practicum in the form of a block practicum (five days a week over one or more weeks), a distributed practicum (1-2 days a week over a period of time) and/or an internship.

Of all respondents to the Graduate Teacher Survey:

- 95 per cent of graduate teachers had completed a block practicum
- 29 per cent of graduate teachers had completed a distributed practicum
- 28 per cent of graduate teachers had completed an internship (the duration and supervision arrangements varied considerably across programs)

The professional experience components of the graduate teachers' programs were combined in a variety of ways. Of the 3,480 respondents who provided information about this structure:

- 55 per cent had experienced a block practicum only
- 15 per cent had experienced a block practicum and a distributed practicum
- 15 per cent had experiences a block practicum and an internship
- 11 per cent had experienced a block practicum, a distributed practicum and an internship
- 3 per cent had experienced a distributed practicum only
- 1.4 per cent reported experiencing only an internship
- 0.5 per cent had experienced a distributed practicum and an internship

There were notable differences in the professional experience arrangements experienced by program type:

- 65 per cent of Master's graduates experienced a distributed practicum, 34 per cent of Bachelor's graduates and 17 per cent of graduate teachers with a Graduate Diploma
- 96 per cent of graduates with a Graduate Diploma experienced a block practicum, 95 per cent of Bachelor's graduates and 86 per cent of graduate teachers with Master's qualifications
- 39 per cent of graduate teachers with Bachelor's degrees experienced an internship, 27 per cent of graduates with Master's qualifications and 17 per cent of graduate teachers with a Graduate Diploma.

Information about the duration of the internship was requested in the Round 2 Graduate Teacher Survey. This new question was introduced to assist with understanding the various ways institutions define internships. A total of 274 Round 2 respondents provided information about the duration of their internships, which ranged from 2 to 15 weeks. Sixty-nine per cent of those who said they completed an internship stated it was six weeks or shorter in length, and of the 86 respondents who had an internship longer than six weeks, 48 per cent were 10 to 12 weeks. The average length was 6.6 weeks.

To get a better idea about the arrangements for the internships, respondents were asked about the type of supervision experienced during the internship. The table below provides this information.

Table 4.6: Graduate teachers by length of internship by type of supervision provided during internship, Round 2

	General supervision only, as for graduate teachers		Constant supervision by a mentor teacher/s		Other, please specify		Total
	n	%	n	%	n	%	n
2-3 weeks	4	2.8	1	0.9	1	4.2	6
4-6 weeks	104	71.7	63	60.0	15	62.5	182
7-9 weeks	14	9.7	14	13.3	2	8.3	30
10-12 weeks	20	13.8	17	16.2	4	16.7	41
13-15 weeks	3	2.1	10	9.5	2	8.3	15
TOTAL	145	100.0	105	100.0	24	100.0	274

Supervision was general for 53 per cent of respondents and constant for 38 per cent indicating that at least some of the reported internship time was in fact supervised practicum. Based on the information collected in Round 2, from Round 3 a definition of an internship was provided in the surveys; 'an extended period of independent or near independent teaching towards the end of a teacher education program'.

Table 4.7 shows the importance of the practicum for gaining skills, according to graduate teachers with a teaching position. 'Importance' was measured on a scale of agreement from strongly disagree to strongly agree.

Table 4.7: Graduate teachers with a teaching position by their view of the importance of skills gained in practicum

The skills I gained during the professional experience/ practicum components of my program were important	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Strongly Disagree	3	0.3	36	1.5	2	0.1	7	0.5
Disagree	7	0.7	166	7.1	11	0.6	13	1.0
Neither Agree nor Disagree	21	2.2	333	14.3	63	3.6	23	1.7
Agree	257	26.5	1,342	57.7	523	30.0	388	29.1
Strongly Agree	683	70.3	449	19.3	1,145	65.7	902	67.7
Total	971	100.0	2,326	100.0	1,744	100.0	1,333	100.0

In Round 1, 3 and 4, 96-97 per cent of graduate teachers either strongly agreed or agreed that the skills they gained during practicum were important. In Round 2, this dropped to 76 per cent. The reason for this difference is unaccounted for, though it is noted this was the only occasion where data collection occurred in the second half of the academic year. This timing may have had a bearing on the results.

From Round 2, graduate teachers with a teaching position were also asked about the importance of the knowledge they gained through their university study. The table below shows graduates' level of agreement that the knowledge they gained through their university-based units was important.

Table 4.8: Graduate teachers with a teaching position by their view of importance of knowledge gained in university-based units, Round 2-4

The knowledge I gained through my university-based units was important	Round 2		Round 3		Round 4	
	n	%	n	%	n	%
Strongly Disagree	36	1.5	22	1.3	27	2.0
Disagree	166	7.1	153	8.7	104	7.8
Neither Agree nor Disagree	333	14.3	259	14.8	237	17.8
Agree	1,342	57.7	1,005	57.4	741	55.6
Strongly Agree	449	19.3	312	17.8	224	16.8
Total	2,326	100.0	1,751	100.0	1,333	100.0

Three-quarters of graduates either strongly agreed or agreed that this knowledge was important in Rounds 2 and 3. This dropped to 72 per cent in Round 4.

A question was asked of those graduate teachers currently teaching about the relevance of their professional experiences to their current teaching context. The results are shown in the Table 4.9.

Table 4.9: Graduate teachers with a teaching position by their view of relevance of practicum to current teaching

The professional experience/ practicum components of my program helped prepared me for my current teaching context	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Strongly Disagree	16	1.6	14	0.6	12	0.7	10	0.8
Disagree	33	3.4	64	2.8	51	2.9	51	3.8
Neither Agree nor Disagree	37	3.8	133	5.7	119	6.8	83	6.2
Agree	311	32.0	857	36.8	698	39.9	534	40.1
Strongly Agree	574	59.1	1,258	54.1	871	49.7	655	49.1
Total	971	100.0	2,326	100.0	1,751	100.0	1,333	100.0

In Rounds 1 to 3 over 90 per cent of graduate teachers either strongly agreed or agreed that their professional experiences prepared them for their current teaching context. In Round 4 this dropped slightly to 89 per cent.

The Round 2 to 4 surveys also asked graduates currently teaching about the relevance of university-based knowledge to their current teaching context. The results are shown in Table 4.10.

Table 4.10: Graduate teachers with a teaching position by their view of relevance of university-based units to current teaching, Round 2-4

The university-based units of my program helped prepared me for my current teaching context	Round 2		Round 3		Round 4	
	n	%	n	%	n	%
Strongly Disagree	63	2.7	54	3.1	46	3.5
Disagree	293	12.6	236	13.5	196	14.7
Neither Agree nor Disagree	491	21.1	383	21.9	315	23.6
Agree	1,170	50.2	867	49.5	629	47.2
Strongly Agree	312	13.4	211	12.1	147	11.0
Total	2,329	100.0	1,751	100.0	1,333	100.0

45

Approximately 60 per cent of graduates either strongly agreed or agreed that the knowledge gained in their university-based units was relevant to their current teaching context. This had a much lower agreement level than the relevance of the practicum to the current teaching context and dropped slightly but steadily across the rounds.

Disciplines studied and then taught in schools

Secondary teachers commonly had qualifications in a specialised teaching area. Overall between 55 and 62 per cent of respondents qualified with at least one specialisation in Rounds 1 to 4 – a majority were secondary teachers.

The table below shows the key learning areas in which the graduate teachers had a specialisation/s. Graduates could specify two specialisations. Only graduate teachers currently employed as teachers were provided with an opportunity to answer this question.

Table 4.11: Graduate teachers with a teaching position who are qualified to teach a specialist area by their area of specialisation

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
English	147	23.5	163	20.5	309	29.8	228	30.0
Mathematics	69	11.0	89	11.2	275	26.5	204	26.8
Studies of Society and Environment	225	36.0	232	29.2	315	30.4	212	27.9
Science	192	30.7	211	26.6	331	31.9	253	33.3
Arts	176	28.2	240	30.2	296	28.6	215	28.3
Languages	51	8.2	66	8.3	105	10.1	70	9.2
Technology	62	9.9	72	9.1	192	18.5	130	17.1
Health and Physical Education	150	24.0	239	30.1	269	26.0	208	27.4
Special Education	11	1.8	35	4.4	87	8.4	85	11.2
Other	40	6.4	57	7.2	193	18.6	125	16.4

Across the rounds the most common specialisations were Society and Environment, Science, Health and Physical Education and the Arts. The least common were Special Education, Language, and Technology. Mathematics had 11 per cent in Round 1 and Round 2, and 27 per cent in Round 3 and Round 4.

In Round 3 and Round 4 the question about specialisations was enhanced to identify not only the areas of specialisation in which graduate teachers were qualified, but all the areas in which they were currently teaching and had previously taught. Respondents were not limited to selection of only two specialisations as they were in the previous rounds.

Table 4.12: Round 3 graduate teachers with a teaching position who are qualified to teach a specialist area by their area of specialisation and areas they have taught

Key Learning Area	I am qualified to teach in this area	I am currently teaching in this area	I have previously taught in this area	Total Responses
The Arts	296	185	130	611
English	309	279	178	766
Languages	105	77	64	246
Health and Physical Education	269	162	127	558
Mathematics	275	285	171	731
Science	331	268	167	766
Studies of Society and the Environment	315	235	155	705
Technology	192	168	99	459
Special Needs	87	96	69	252
Other	193	140	91	424

Table 4.13: Round 4 graduate teachers with a teaching position who are qualified to teach a specialist area by their area of specialisation and areas they have taught

Key Learning Area	I am qualified to teach in this area	I am currently teaching in this area	I have previously taught in this area	Total Responses
The Arts	215	138	117	470
English	228	207	157	592
Languages	70	58	53	181
Health and Physical Education	208	117	113	438
Mathematics	204	215	171	590
Science	253	200	161	614
Studies of Society and the Environment	212	161	144	517
Technology	130	123	99	352
Special Needs	85	98	65	248
Other	125	103	77	305

There were slightly higher numbers of graduate teachers working out-of-field in the areas of Mathematics and Special Needs, while many of those who specialised in the area of Health and Physical Education were not working in this area. For example, of all respondents employed as teachers in Round 3, 285 were teaching mathematics though only 275 had specialised in this area. Conversely, 162 were teaching in the area of Health and Physical Education though 269 had a specialisation in this area. In Round 4, 98 were teaching in the area of Special Needs and 85 had specialised in this area. In the area of Health and Physical Education, 117 were teaching in the area though 208 had this specialisation.

Summary of the graduate teacher respondent sample:

The graduate teacher sample demographics – across Rounds 1,2,3,4 – are as follows:

Personal characteristics

- 66 per cent were under 30 years of age
- 78 per cent were female
- 94 per cent reported English as their only language
- 1 per cent identified as Aboriginal or Torres Strait Islander
- 43 per cent identified as the first in their immediate family to gain a tertiary qualification
- 68 to 84 per cent of graduate teachers had other academic or trade qualifications in addition to their teaching qualifications. Many had previously worked in the education, retail trade and health or community services sectors.

Program characteristics

- 39 per cent 2010 graduates; 50 per cent 2011 graduates
- 53 per cent completed a graduate entry teacher education qualification (including 9 per cent Master's programs)
- 47 per cent had a 4-year undergraduate Bachelor's qualification
- 85 per cent completed their teacher education in full time study mode
- 67 per cent completed their teacher education at a metropolitan campus
- 96 per cent were enrolled as domestic students
- Majority completed their studies with a secondary (44 per cent) or primary school (36 per cent) teaching qualification
- 95 per cent of graduate teachers had completed a block practicum
- 29 per cent of graduate teachers had completed a distributed practicum
- 28 per cent of graduate teachers had completed an internship (the duration and supervision arrangements varied considerably across programs)

4.2.3 Graduate teachers' perceptions of their preparedness and effectiveness

In order to find out how well prepared graduate teachers felt by their teacher education program for their role as employed teachers, the survey included questions in the form of statements to which they could agree or disagree. These were considered core questions and covered key areas of teacher preparation:

- Teaching culturally, linguistically and socio-economically diverse learners
- Design and implementation of the curriculum
- Pedagogy
- Assessment and the provision of feedback and reporting on student learning
- Classroom management
- Collegiality
- Professional engagement with parents/carers and the community
- Professional ethics
- Engagement with ongoing professional learning

The initial Graduate Teacher Survey (Round 1) included 46 statements, each of which was associated with one of the nine areas of teacher preparation. The statements and the corresponding areas as utilised and classified in Round 1 are provided in Appendix 3. This appendix also includes information about the use of the preparedness (and effectiveness) scale in subsequent survey rounds.

In Rounds 2, 3 and 4, the original 46 statements were replaced with 16 statements on preparation for teaching. This change was made to reduce the survey burden and to enable matching with the LTEWS data collections; nine of the 16 items represented the SETE key areas of teacher preparation and the extra items ensured coverage of all seven of the Australian Professional Standards for Teachers and the use of ICT, discipline-based expertise, and literacy and numeracy – the later four inclusions being required for LTEWS. Questions included for the benefit of the LTEWS research are only briefly examined in this report. Principal components analysis and reliability analyses were conducted to inform modification and enhancement of the preparedness for teaching scale; the results are reported in the SETE Technical Report (Mayer, Allard, Bates, Dixon, Doecke, Hodder, Kline, Kostogriz, Rowan, Walker-Gibbs & White, 2014).

Table 4.14 shows the Round 2, 3 and 4 means for graduates' level of agreement with the statements about preparation for teaching for the nine key areas identified for SETE (1=SD, 5=SA), as well as their level of agreement with their effectiveness in these areas. These questions were only asked of those respondents who were currently teaching.

Table 4.14: Graduate teachers by preparation and effectiveness in key areas of teaching

	Round 2 Mean	Round 3 Mean	Round 4 Mean
My teacher education program prepared me in the following area…			
Teaching culturally, linguistically and socio-economically diverse learners	3.3	3.3	3.2
Design and implementation of curriculum	3.5	3.5	3.4
Assessment and the provision of feedback and reporting on student learning	3.3	3.3	3.2
Pedagogy	3.9	3.9	3.9
Classroom management	3.2	3.2	3.0
Professional engagement with parents/carers and the community	3.0	2.9	2.9
Collegiality	3.3	3.4	3.4
Professional ethics	3.9	3.9	3.9
Engagement with ongoing professional learning	3.7	3.7	3.6
I am effective in this area now…			
Teaching culturally, linguistically and socio-economically diverse learners	3.9	3.9	4.0
Design and implementation of curriculum	4.0	4.1	4.2
Assessment and the provision of feedback and reporting on student learning	4.0	4.1	4.2
Pedagogy	4.0	4.0	4.1
Classroom management	4.1	4.2	4.3
Professional engagement with parents/carers and the community	4.1	4.1	4.2
Collegiality	4.2	4.2	4.3
Professional ethics	4.3	4.3	4.5
Engagement with ongoing professional learning	4.3	4.3	4.4

 (Round 2 n=2,336, Round 3 n=1,758, Round 4 n=1,335)

Overall, there was a very slight drop in overall levels of agreement over time in relation to preparedness for teaching by the teacher education program and a slight increase in self-reported effectiveness as a beginning teacher.

Figure 4.4: Graduate teacher means for overall perceptions of their preparedness and effectiveness, Round 1-4
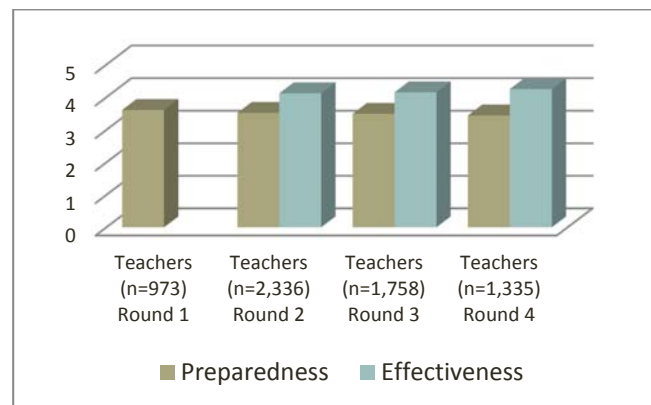
The areas in which more than 75 per cent of graduate teachers felt well prepared by their teacher education programs were:

- Pedagogy (Round 2, 3 and 4)
- Professional ethics (Round 2 and 4)

In each of the Rounds 2-4, more than 75 per cent of graduate teachers reported feeling effective across all 16 areas at the time when they completed the survey.

The areas in which more than 25 per cent of graduate teachers felt less well prepared by their teacher education programs were:

- Classroom management (Round 2, 3 and 4)
- Professional engagement with parents/carers and the community (Round 2 and 4)
- Assessment and the provision of feedback and reporting on student learning (Round 2 and 4)
- Teaching culturally, linguistically and socio-economically diverse learners (Round 4)

In each of the Rounds 2-4, at the time of completing the survey there were no areas in which more than 25 per cent of graduate teachers disagreed or strongly disagreed that they were effective.

Overall, respondents had higher levels of agreement that they were effective in the key areas than they had with being prepared in these areas.

In Round 2 and 3, the key areas with the greatest improvement between perceptions of being prepared and perceptions of being effective were 'Professional engagement with parents/carers and the community'. In Round 4 the greatest improvement between perceptions of being prepared and perceptions of being effective were 'Classroom management' and 'Professional engagement with parents/carers and the community'.

Teacher characteristics and point-in-time perceptions of preparedness and effectiveness

Analysis of the point-in-time data was undertaken to examine possible differences in perceptions of preparedness and effectiveness according to a selection of graduate teacher respondent characteristics. We focus in this section on dichotomous variables: gender, prior industry experience, qualification to teach in a specialist area and whether they were the first in their family to complete a tertiary qualification. Comprehensive exploration of the associations between perceptions of preparedness and teacher characteristics, and perceptions of effectiveness and teacher characteristics was reserved for analysis of the longitudinal sample (Section 4.4.3 and 4.5). Unlike the point-in-time samples the longitudinal sample enables exploration of changes in perceptions over time.

Independent-samples t-tests were conducted to compare the means in the key areas of preparation for teaching and effectiveness by gender. In Rounds 2, 3 and 4, there was a significant difference in the scores for perceptions of preparedness for males and females in the following areas:

- Teaching culturally, linguistically and socio-economically diverse learners
- Pedagogy (Round 3 and 4)
- Professional engagement with parents/carers and the community
- Collegiality
- Professional ethics (Round 3 only)
- Engagement with ongoing professional learning

These results suggest that gender did have an effect on perceptions of preparedness in key areas of teaching. Specifically, the results suggest that females felt better prepared than males in the key areas, as listed above.

There was a significant difference in the scores for perceptions of effective*s*s for males and females in the following areas:

- Teaching culturally, linguistically and socio-economically diverse learners
- Design and implementation of curriculum (Round 2 and 4)
- Assessment and the provision of feedback and reporting on student learning (Round 4)
- Pedagogy
- Classroom management (Round 2 and 3)
- Professional engagement with parents/carers and the community
- Collegiality (Round 3 and 4)
- Engagement with ongoing professional learning

These results again suggest that gender did have an effect on perceptions of effectiveness in eight of the nine key areas of teaching identified for the SETE project. Females felt more effective than males. In each round the overall differences based on gender were statistically significant.

Independent-sample t-tests were also conducted to consider overall perceptions of preparedness for teaching and perceptions of effectiveness by: 1) first in family to complete a tertiary qualification, 2) qualified to teach in a specialist area, and 3) prior industry experience. Information about first in family to complete a tertiary qualification was not

collected in Round 1 or 4 and information about specialisations and prior industry experience was not collected in Round 4. Preparedness data were available for Rounds 1-3 and effectiveness data for Rounds 2 and 3.

There was a significant difference in terms of preparedness in scores for:

- Round 1 respondents who had prior trade or industry experience (M = 3.66, SD =.6) and those who did not (M = 3.57, SD =.6; t (969) = 2.33, p = .02)

There was a significant difference in terms of effectiveness in scores for:

- Round 2 respondents who were the first in their family to complete a tertiary qualification (M = 4.14, SD =.5) and those who were not (M = 4.08, SD =.5; t (2333) = 2.52, p = .01).

There was no significant difference in perceptions of preparedness or effectiveness for:

- Round 2 and Round 3 respondents who were qualified to teach in a specialist area and those who were not, nor for Round 1 respondents in relation to perceptions of preparedness
- Round 2 and Round 3 respondents who had prior trade or industry experience and those who did not
- Round 3 respondents who were the first in their family to complete a tertiary qualification and those who were not, nor for Round 2 respondents in relation to perceptions of preparedness.

Program characteristics and perceptions of preparedness and effectiveness
Analysis of the point-in-time data was undertaken to examine possible differences in perceptions of preparedness and effectiveness according to the characteristics of the teacher education programs the graduate teacher respondents completed: program type, campus location, main area of program, professional experience, and disciplines studied and then taught in schools. In this section we focus on professional experience, specifically internships and distributed practicum. Associations between perceptions of preparedness and teacher characteristics, and perceptions of effectiveness and teacher characteristics are reported in greater depth for the longitudinal sample (see Sections 4.4 and 4.5).

Analysis of the point-in-time data consistently revealed significant difference in perceptions of preparedness for respondents based on the type of teacher education program completed; graduates of Master's and Bachelor's degrees, perceived themselves as more prepared and effective than their colleagues who completed Graduate Diplomas. Refer to Appendix 4 for further details.

Overall, completion of a distributed practicum did not appear to have any impact upon graduate teachers' perceptions of their effectiveness and preparedness. The nuances of this finding are examined in Section 4.4 and 4.5.

In Round 3, respondents who undertook an internship perceived themselves to be more prepared than those who did not. This point-in-time analysis was only run in Round 3 as it wasn't until data collection in 2013 that a definition of internship was provided for respondents.

In each survey round graduate teachers were presented with an opportunity to respond to open-ended questions asking how teacher education programs could be strengthened and what the existing strengths of program were. Inductive analysis, informed by grounded theory, was used to analyse graduate teachers' responses.

The analysis found that responses to strengthening programs clustered around calls for more:

- Time in schools
- Practical hands-on pedagogy
- Engagement with school curriculum and content including senior secondary curriculum
- University lecturers and staff with recent school experience
- Practical assessment
- Feedback on assignments (and less group assessments)
- Focus on 'behaviour management'
- Hands on direct learning of ICT
- Program time – programs of 18 months or less duration were regarded as too short.

The over-riding emphasis in the recommendations on practical experience and the practical work of teachers was clear and weighty. It indicated what these graduate teachers felt was needed in teacher education. It also indicated what the demands on them were as they were doing the work of teachers. For many they experienced a difficult period in obtaining employment. They felt underprepared in terms of the practical work of teaching. Their first years of teaching demanded practical knowledge of day-to-day teaching and direct knowledge of school curriculum. They were confronted by 'behaviour management' needs, assessment and reporting requirements, and a diverse range of students some with 'special needs'. It is also clear that there was a pervasive understanding of their work as practical and not theoretical.

Responses to the question about the strength of teacher education programs were grouped into the following clusters:

- High quality university teaching staff
- Practicum experiences
- Small classes
- Opportunity for practical application in assessments and class activities
- Theory-practice links
- Working with their peers

School characteristics and perceptions of preparedness and effectiveness
Analysis of the point-in-time data was undertaken to examine possible differences in perceptions of preparedness and effectiveness according to the characteristics of the schools in which the graduate teacher respondents were teaching: state (Queensland or Victoria); school location (major city, inner regional, outer regional, remote, very remote); socio-economic indicators; and, the induction and support available for new teachers.

Associations between school location and perceptions of preparedness and perceptions of effectiveness were examined using independent samples t-tests. There was no significant difference in scores for those who were working in schools in Victoria and those who were working in schools in Queensland.

Additional one-way between subjects ANOVAs were conducted on Round 3 point-in-time data to compare the effect of school characteristics on overall perceptions of preparation for teaching and effectiveness. Because the research was interested in how perceptions change over time, only one point-in-time dataset was examined. A more thorough approach was adopted for the longitudinal analyses of associations over time between school characteristics and perceptions of preparedness for teaching and effectiveness, as reported in Section 4.4.

Exploration of rurality revealed no significant differences at the $p< .05$ level for graduate perceptions of preparedness and effectiveness based on school location groupings (major cities, inner regional, outer regional, remote, very remote). Exploration of socio-economic factors revealed no significant differences at the $p<.05$ level for graduate perceptions of preparedness and effectiveness based on ICSEA value of the school.

Standard multiple regression was used to assess the ability of school and program characteristics to predict graduate teachers' perceptions of their 1) preparedness for teaching and 2) effectiveness as teachers. Preliminary analyses were conducted to ensure there was no violation of the assumptions of multicollinearity, normality, linearity and homoscedasticity. Analysis of the Pearson correlations between the independent variables and the dependent variables in each model were consistently very weak, with no correlations above 0.1. As a consequence the results of standard multiple regressions exploring these associations are not robust enough to warrant vigorous discussion. This noted, they show that school and program characteristics account for less than 1 per cent of the perceived variance in perceptions of effectiveness. Further, the lack of an association between the school and program characteristics and perceptions of preparedness and effectiveness is an interesting finding.

The final school characteristic examined was the induction and support for new teachers. Nine items were included on the survey as examples of induction and support (drawn from Ingvarson, Beavis & Kleinhenz, 2004) and a tenth item was added in Round 2 to capture the involvement of registry authorities in the support of graduate teachers. In each of these areas the graduate teachers were asked for their level of agreement on the effectiveness of the support item.

- Induction program
- Formal mentor arrangement
- Informal mentor arrangement
- Ongoing network with other beginning teachers
- Guidance on curriculum and classroom planning
- Ongoing professional development opportunities
- List of informative websites
- Information on pay and conditions
- Regular debriefing opportunities
- Assistance from Teacher Registry Authorities (added in Round 2)

The following figure shows the level of agreement on the effectiveness of the support item by graduate teachers with a teaching position.

Figure 4.5: Graduate teachers with a teaching position by level of agreement with the effectiveness of types of support received in schools
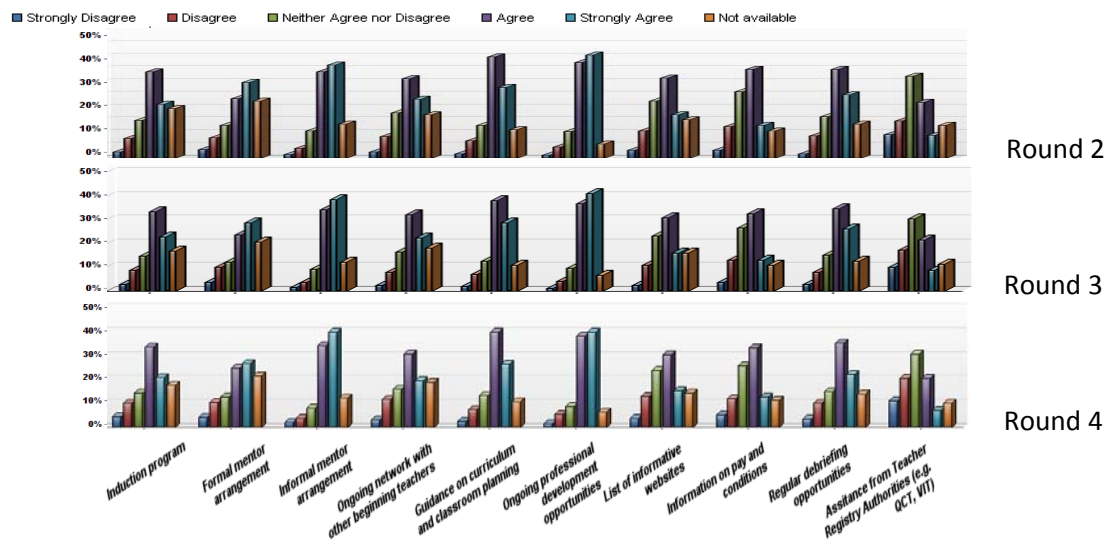
Round 2 (n=2,265) Round 3 (n=1,713) and Round 4 (n=1,295)

The figure shows that the item that was *least* available to graduate teachers was 'Formal mentor arrangements'. The items that graduate teachers stated were of *most* importance to them in terms of support in their new role as a teacher were 'Ongoing professional development opportunities' followed by 'Informal mentor arrangements'.

Table 4.15: The importance of <u>support received in school</u>, alongside availability of this item, by mean scores for <u>preparedness</u> and <u>effectiveness</u> (all 16 items), Round 3

	Preparedness mean - not available	Effectiveness mean - not available	Preparedness mean - Strongly disagree	Preparedness mean - Strongly agree	Effectiveness mean - Strongly disagree	Effectiveness mean - Strongly agree
Induction program	3.38	4.04	3.20	3.61	3.97	4.30
Formal mentor arrangement	3.43	4.10	3.28	3.58	3.97	4.26
Informal mentor arrangement	3.46	4.08	3.22	3.51	4.01	4.25
Ongoing network with other ECRs	3.38	4.04	3.13	3.62	3.97	4.30
Guidance on curriculum and classroom planning	3.35	4.03	3.07	3.60	3.88	4.31

Ongoing professional development opportunities	3.48	4.16	2.97	3.60	3.85	4.27
List of informative websites	3.32	4.13	3.11	3.68	4.05	4.31
Information on pay and conditions	3.36	4.09	3.14	3.68	4.03	4.32
Regular debriefing opportunities	3.36	4.05	3.05	3.57	3.96	4.28
Assistance from Teacher Registry Authorities	3.39	4.09	3.28	3.73	4.10	4.32

Table 4.16: The importance of <u>support received in school</u>, alongside availability of this item, by mean scores for <u>preparedness</u> and <u>effectiveness</u> (all 16 items), Round 4

	Preparedness mean - not available	Effectiveness mean - not available	Preparedness mean - Strongly disagree	Preparedness mean - Strongly agree	Effectiveness mean - Strongly disagree	Effectiveness mean - Strongly agree
Induction program	3.33	4.17	3.08	3.64	4.12	4.39
Formal mentor arrangement	3.39	4.18	3.11	3.50	4.09	4.39
Informal mentor arrangement	3.46	4.22	3.09	3.50	4.19	4.35
Ongoing network with other ECRs	3.38	4.19	3.04	3.59	4.05	4.40
Guidance on curriculum and classroom planning	3.42	4.16	3.19	3.52	4.04	4.39
Ongoing professional development opportunities	3.44	4.26	3.17	3.52	3.98	4.37
List of informative websites	3.34	4.19	2.89	3.65	4.07	4.40

Information on pay and conditions	3.34	4.25	3.08	3.63	4.04	4.45
Regular debriefing opportunities	3.40	4.20	3.20	3.52	3.97	4.38
Assistance from Teacher Registry Authorities	3.39	4.25	3.13	3.83	4.13	4.44

These tables reveal two trends:

1) The higher the respondents' perceptions of their preparedness and effectiveness the higher the level of overall agreement regarding the availability and effectiveness of in school supports.
2) Perceptions of preparedness and effectiveness were higher for support items that were not offered than for support items that were offered but did not meet the graduate teachers' need.

Summary of graduate teachers' perceptions of their preparedness and effectiveness:

Analysis of the point-in-time responses revealed graduate teachers perceived themselves to be both prepared for teaching and effective, although they saw themselves as more effective than prepared. Their sense of effectiveness increased slightly over time.

Across all survey rounds, graduate teachers reported being more prepared in the area of 'Pedagogy' and less well prepared in the area of 'Classroom management'.

Between late 2012 and early 2013, the key area with the greatest improvement between perceptions of being prepared and perceptions of being effective was 'Professional engagement with parents/carers and the community'.

Between early 2013 and early 2014, the greatest improvement between perceptions of being prepared and perceptions of being effective were in the areas of 'Classroom management' and 'Professional engagement with parents/carers and the community'.

Gender was found to have an association with perceptions of preparedness for teaching and for effectiveness. Females were found to feel better prepared and more effective than males in most of the key areas of teaching.

Other personal characteristics such as prior industry or trade experience, first in family to complete a tertiary qualification, and qualifications to teach in a specialist area had less consistent associations with perceptions of preparedness and effectiveness. Round 1 respondents who had prior trade or industry experience reported being more prepared than those who did not, and Round 2 respondents who were the first in their family to complete a tertiary qualification reported being more effective than those who were not.

Significant differences in perceptions of preparedness were reported for respondents based on the type of teacher education program completed. Graduates of Master's and

Bachelor's degrees perceived themselves as more prepared and effective than their colleagues who had completed Graduate Diplomas.

Overall, completion of a distributed practicum did not appear to have any impact upon graduate teachers' perceptions of their effectiveness or preparedness.

There was some evidence to suggest that respondents who undertook an internship perceived themselves to be more prepared than those who did not. This should be treated with caution due to the variation in duration and supervision of internships across teacher education programs.

Graduate teachers indicated that improvement of teacher education required a greater emphasis on practical experience and the practical work of teachers.

The strengths of teacher education identified by teachers included: quality university staff, practical experiences, cohort experiences (particularly in small classes) and opportunities for making theory-practice linkages.

Analysis of the point-in-time data did not reveal any significant associations between the school characteristics, as collected for the study, and graduate teachers' perceptions of preparedness and effectiveness.

In terms of in-school supports, 'Formal mentor arrangements' were not consistently made available to graduate teachers. The items that graduate teachers stated were of *most* importance to them were 'Ongoing professional development opportunities' and 'Informal mentor arrangements'. The availability and effectiveness of in school supports appeared to have an association with graduate teachers' perceptions of their preparedness and effectiveness.

4.2.4 Career Progression

This section of the report concentrates on the experiences of graduate teachers post their teacher education programs. It considers responses from graduate teachers from 2010 and 2011 who were currently not teaching and those who were currently teaching. The surveys explore the areas of utilisation of new teacher graduates, teacher mobility, attraction and attrition, key factors influencing changes and career pathways and progression. The section finishes with a look at graduate teachers' indications for future plans.

Utilisation of graduates

The following tables show the movement into and out of the teaching workforce over time.

Table 4.17: Employment as a teacher

Are you currently teaching?	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Yes	1,043	73.1	2,461	87.6	1,853	83.7	1,405	85.7
No	383	26.9	349	12.4	362	16.3	234	14.3
Total	1,426	100.0	2,810	100.0	2,215	100.0	1,548	100.0

Table 4.17 shows shifts in the proportion of teacher education graduates employed as teachers at each survey time-point. In Round 1, 73 per cent of respondents were working as teachers. This increased to 88 per cent in Round 2, then decreased to 84 per cent in Round 3 and there was a small rise to 86 per cent in Round 4. It is important to note that this is not longitudinal data; the respondents for each round are not necessarily the same graduates.

Table 4.18: Round 4 graduate teachers' history of teaching employment

Currently teaching	Teaching in 2010	Teaching in 2011	Teaching in 2012	Teaching in 2013	Not teaching prior to 2014	Total
Yes	130	841	1,355	1,368	19	1,405
No	28	110	166	132	41	234

In Round 4 (2014) graduate teachers were asked to provide information about their employment history. Of those currently teaching, 99 per cent had taught prior to 2014 and of those not currently teaching, 72 per cent had previously been employed as teachers. Slightly less than ten per cent of all graduate teachers who answered this question were teaching in 2010.

Table 4.19: Graduate teachers employed as a teacher by employment type

Employment type	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Full-time	270	26.8	756	31.0	708	38.8	703	50.8
Part-time	36	3.6	67	2.7	71	3.9	51	3.7
Casual	111	11.0	333	13.7	210	11.5	145	10.5
Full-time contract	499	49.5	1,068	43.8	707	38.8	392	28.3
Part-time contract	92	9.1	213	8.7	127	7.0	93	6.7
Total	1,008	100.0	2,437	100.0	1,823	100.0	1,384	100.0

Table 4.19 shows that full-time teaching work was the most common employment type for graduate teacher respondents and that between Rounds 1 and 4 there was an increase in the number of teachers employed on a permanent basis and a decrease in those in full time contract work.

In Round 4, graduate teachers were asked to provide details about their previous employment type (2010-2012). This was cross-tabulated with their current employment type to give an indication of how this changed over time.

Table 4.20: Round 4 graduate teachers' teaching employment by previous employment type

| Teaching employment Round 4 | Employment type in 2013 | | | | | | | |
| | Full time | | Part time | | Casual | | Total | |
	n	%	n	%	n	%	n	%
Full time	983	95.0	44	31.7	50	28.4	1,077	79.8
Part time	29	2.8	80	57.6	29	16.5	138	10.2
Casual	23	2.2	15	10.8	97	55.1	135	10.0
TOTAL	1,035	100.0	139	100.0	176	100.0	1,350	100.0

Table 4.20 shows that the type of employment graduates held was fairly consistent, with 95 per cent of teachers employed full time in 2013 employed full time in 2014 and 55 per cent of those previously employed casually remaining employed in this capacity.

In Round 3, graduate teachers were asked to provide details about their previous employment type (2010-2012).

Table 4.21: Round 3 graduate teachers' teaching employment by previous employment type

| Teaching employment Round 3 | Teaching employment prior to 2013 | | | | | | | |
| | Full time | | Part time | | Casual | | Total | |
	n	%	n	%	n	%	n	%
Full time	114	95.4	10	40.0	4	30.8	128	80.0
Part time	5	4.1	11	44.0	1	7.7	17	10.6
Casual	3	2.5	4	12.0	8	61.5	15	9.4
TOTAL	122	100.0	25	100.0	13	100.0	160	100.0

Table 4.21 also shows that the type of employment graduates held was fairly consistent, with 96 per cent of teachers employed full time prior to 2013 employed full time at the time of the Round 3 survey and 62 per cent of those previously employed casually remaining employed in this capacity during 2013.

Open-ended responses which asked why teachers changed schools were able to be reduced to three major reasons:

- **Non-renewal of contract** [this was by far the most common response]
    - Contract ended
- **Desire for permanent employment**
    - Offered permanency elsewhere
- **Need for financial security**
    - I wanted a full time position because of financial difficulty.

Other key reasons why teachers changed schools included family commitments/responsibilities, dissatisfaction with the school and personal plans such as desire to travel or pursue further study.

Graduate teachers were asked if they held a leadership position in the school. The table below shows the leadership role of graduate teachers in schools. The majority of graduate teachers did not hold any leadership position (66-83 per cent).

Table 4.22: Graduate teachers by role of leadership position in their school

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Year level coordination	37	3.9	135	5.5	40	2.2	22	2.1
Literacy	20	2.1	102	4.2	13	0.7	6	0.6
Numeracy	16	1.6	101	4.2	11	0.6	2	0.2
Student welfare	23	2.4	106	4.4	12	0.6	3	0.3
Curriculum	36	3.7	167	6.9	45	2.5	55	5.2
Sport	58	6.0	159	6.5	29	1.6	4	0.4
ICT	38	3.9	150	6.2	19	1.0	27	2.5
Other	84	8.6	224	9.2	137	7.5	199	18.7
No	644	66.2	1,789	73.5	1,510	83.1	1,066	77.0

Round 1 n=973, Round 2 n=2,433, Round 3 n=1,818, Round 4=1,384

Graduate teachers not currently teaching

Between Round 1 and Round 4, 12-27 per cent of graduate teachers were not employed as teachers at the times of the survey rounds. These respondents were asked if they were seeking employment as a teacher.

Table 4.23: Graduate teachers without teaching employment by seeking teaching employment

Are you currently seeking employment as a teacher?	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Yes	292	76.2	213	61.0	210	58.0	95	40.6
No	91	23.8	136	39.0	152	42.0	139	59.4
Total	383	100.0	349	100.0	362	100.0	234	100.0

In the year between Rounds 1 and 3, there was a drop off in the number of graduates not employed as teachers and who were actively seeking a teaching position. This fell from over three-quarters at the first survey to 58 per cent of Round 3 respondents. By the following year when Round 4 data were collected (March-April 2014), this number had dropped to 41 per cent.

The time graduate teachers had spent seeking teaching employment is shown in the table that follows.

Table 4.24: Length of time spent seeking employment as a teacher

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
1-3 months	111	38.0	83	39.3	46	22.0	32	33.7
4-6 months	89	30.5	17	8.1	44	21.1	13	13.7
More than 6 months	92	31.5	111	52.6	119	56.9	50	52.7
Total	292	100.0	211	100.0	209	100.0	95	100.0

By Round 4, of all respondents seeking a teaching position 53 per cent had been attempting to secure teaching work for more than six months. This was a drop of 4 per cent when compared to Round 3. In Round 1, less than one third of respondents had been seeking a teaching position for this amount of time, with the greatest proportion of Round 1 respondents reporting to have been looking for 1-3 months (38 per cent).

The next table shows the proportion of teachers who were not currently seeking teaching employment by their intent to seek a future teaching position.

Table 4.25: Graduate teachers without a teaching position not currently seeking employment as a teacher by intent to seek a teaching position in the future

Do you intend to seek a teaching position in the future?	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Yes	61	53.0	67	48.9	54	35.8	37	26.8
Maybe	43	37.4	53	38.7	79	52.3	73	52.9
No	11	9.6	17	12.4	18	11.9	28	20.3
Total	115	100.0	137	100.0	151	100.0	138	100.0

In Round 4, 20 per cent of graduate teachers indicated no intention to seek a teaching position in the future. Twenty-seven per cent said they did intend to seek a position in the future. This was a drop of 26 per cent when compared to Round 1 responses. Reasons for not seeking employment as a teacher reflected how graduates perceived obstacles to employment, their specific circumstances or to teachers' work more generally. The reasons could be categorized as economic, social and affective. The most common economic reason that respondents mentioned was having an alternative job to teaching that was either more secure and/or better paid. Other economic reasons included inability to find a teaching job and, as a result, changing a career or looking for teaching jobs overseas.

Social reasons included family circumstances and professional growth. Some graduates did not seek teaching positions until their family situation became more stable (e.g., pregnancy, maternity leave, child-care, etc.). Others decided to pursue further and postgraduate studies either in the field of education or in other fields. In these cases, graduates referred sometimes to their practicum experiences as instrumental in deciding not to pursue teaching. Another social reason for not seeking a teaching job was professional mobility in the area of management and administration.

The most extensive category of reasons was the affective one. These referred to respondents' disillusionment in teaching as a profession, dissatisfaction with long hours and low pay, discouragement after a number of unsuccessful job interviews, dissatisfaction with particular

school culture or with teaching in 'dysfunctional' classrooms, lack of support for beginning teachers and negative experience with teaching in 'rough' schools.

Graduate teachers seeking teaching employment were invited to answer the question 'In your opinion, what have been the key obstacles to securing a teaching position?' Commonly perceived obstacles to securing teaching employment included:

- Job market - 'overproduction' of teachers and/or lack of permanent positions with many applicants for one position and some jobs 'falsely advertised', some disciplinary areas seem to be difficult to find a job in (Arts, English, Humanities).

- Systemic obstacles - registration issues and bureaucratic delays, casual relief teaching budget cutbacks.

- Individual characteristics - Some graduates saw their own circumstances, qualities or identities as obstacles to employment. Personal circumstances that were perceived as obstacles included having young children and preferring part-time jobs due to these circumstances, visa requirements and lack of local experience, English language proficiency, gender, age, different cultural and schooling backgrounds and overseas teaching licenses.

Graduate teachers currently teaching

The following section shows information for those graduate teachers who were employed as a teacher when completing the surveys. The table below shows in which jurisdiction graduate teachers were employed.

Table 4.26: Graduate teachers with a teaching position by jurisdiction of employment

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Victoria	624	59.8	1,503	61.1	1,102	59.6	841	59.8
Queensland	387	37.1	894	36.3	688	37.2	488	34.7
Elsewhere in Australia	12	1.2	20	0.8	14	0.8	34	2.4
In a school outside Australia	20	1.9	44	1.8	45	2.4	43	3.1
Total	1,043	100.0	2,461	100.0	1,849	100.0	1,406	100.0

Consistent with the ratio of graduate teachers registered in Victoria compared to Queensland, in each survey round a greater proportion of respondents were working in Victorian schools.

Table 4.27 shows the school sector in which graduate teachers were employed.

Table 4.27: Graduate teachers with a teaching position by school sector

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Government	726	71.3	1,595	64.8	1,242	67.2	946	67.3
Catholic	152	14.9	389	15.8	256	13.8	194	13.8
Independent	140	13.8	345	14.0	256	13.8	189	13.4
Other	-	-	132	5.4	95	5.1	77	5.5
Total	1,018	100.0	2,461	100.0	1,849	100.0	1,406	100.0

The largest proportion of responses was from graduate teachers employed in the government sector. This fell from 71 per cent in Round 1 to 65 per cent in Round 2 and 67 per cent in Rounds 3 and 4. The table below shows graduate teachers who were in a teaching position by their employment type.

Table 4.28: Graduate teachers with a teaching position by employment type

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Full-time permanent	270	26.8	756	31.0	708	38.8	703	50.8
Part-time permanent	36	3.6	67	2.7	71	3.9	51	3.7
Casual	111	11.0	333	13.7	210	11.5	145	10.5
Full-time contract	499	49.5	1,068	43.8	707	38.8	392	28.3
Part-time contract	92	9.1	213	8.7	127	7.0	93	6.7
Total	1,008	100.0	2,437	100.0	1,823	100.0	1,384	100.0

In Round 4 over half of the graduate teachers (51 per cent) were employed in full-time permanent employment. This shows a large increase in full-time permanency from the earlier rounds. However, full-time contract employment decreased from 39 per cent in Round 3 to 28 per cent in Round 4. When all forms of full-time employment were combined there was a slight increase from 78 per cent of graduate teachers employed full-time in Round 3 to 79 per

cent in Round 4. Table 4.29 shows the teaching area in which graduate teachers employed at the time of the surveys were teaching.

Table 4.29: Graduate teachers with a teaching position by school type

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Early childhood	62	6.1	73	3.0	58	3.2	48	3.5
Primary	447	46.3	1,107	45.5	805	44.3	636	46.0
Secondary	491	47.5	933	38.3	697	38.3	526	38.0
Combined K-12**	NA	NA	320	13.2	258	14.2	174	12.6
Other	90	8.7	NA	NA	NA	NA	1,384	100.0

*Respondents could select more than one option **Option not available in Round 1

In Round 3 and 4, 38 per cent of the graduate teachers were employed in secondary schools and 44 – 46 per cent in primary schools. This was fairly consistent with Round 2 data but differed from Round 1 where 48 per cent were secondary teachers and 46 per cent primary teachers. Changes to data collection noted in the table may account for much of this difference.

Table 4.30 is a cross-tabulation of graduate teachers with a current teaching position by gender and employment type. Round 1 and Round 4 data were compared.

Table 4.30: Graduate teachers with a teaching position by gender and employment type

	Females		Males	
	n	%	n	%
Round 1				
Part time permanent	31	3.8	5	2.4
Casual	96	11.8	17	8.3
Full time contract	398	49.1	104	50.5
Part time contract	80	9.9	12	5.8
TOTAL	811	100.0	206	100.0
Round 4				
Full time permanent	527	48.9	176	57.5
Part time permanent	44	4.1	7	2.3
Casual	118	10.9	27	8.8
Full time contract	307	28.5	85	27.8
Part time contract	82	7.6	11	3.6
TOTAL	1,078	100.0	306	100.0

In the Round 1 sample, males were more likely than their female colleagues to hold both full time permanent and full time contract positions. This noted, because of the relatively small number of male respondents, standard error must be considered. In Round 4 this trend remained consistent with 58 per cent of male respondents in full time permanent positions compared to 49 per cent of female respondents.

The table below is a cross-tabulation, looking at teaching employment by the type of teacher education program undertaken.

Table 4.31: Graduate teachers by program type and percentage currently employed as a teacher

	Yes	No	Total
	%	%	n
Round 1			
Master's degree	65.2	34.8	66
Bachelor's degree	65.9	34.1	428
Graduate Diploma	59.3	40.7	492
Other	0.0	100.0	4
TOTAL			990
Round 2			
Master's degree	84.5	15.5	239
Bachelor's degree	91.1	8.9	1,265
Graduate Diploma	84.8	15.2	1,182
Other	83.3	16.7	36
TOTAL			2,722
Round 3			
Master's degree	84.3	15.7	210
Bachelor's degree	88.4	11.6	895
Graduate/Postgraduate Diploma	79.1	20.9	935
Other	74.2	25.8	31
TOTAL			2,071
Round 4			
Master's degree	88.9	11.1	144
Bachelor's degree	89.7	10.3	756
Graduate/Postgraduate Diploma	81.0	19.0	726
Other	84.6	15.4	13
TOTAL			1,639

The data show that in each round the highest proportion of graduate teachers with a teaching position were those with Bachelor's degrees.

The table below is a cross-tabulation, looking at the type of employment of graduate teachers by the teacher education program undertaken.

Table 4.32: Graduate teachers who are currently teaching by teacher education program type and employment type

	Full time Permanent %	Part time Permanent %	Casual %	Full time Contract %	Part time Contract %	Total n
Round 1						
Master's degree	26.7	2.7	12.0	46.7	12.0	75
Bachelor's degree	27.5	3.1	8.4	53.6	7.5	455
Graduate diploma	26.1	4.2	13.2	46.2	10.3	476
Other	0.0	0.0	100.0	0.0	0.0	1
TOTAL						1,007
Round 2						
Master's degree	29.9	3.5	14.9	43.8	8.0	201
Bachelor's degree	34.2	1.7	10.1	46.8	7.3	1,144
Graduate diploma	27.3	3.5	17.0	41.4	10.8	989
Other	40.0	13.3	6.7	33.3	6.7	30
TOTAL						2,364
Round 3						
Master's degree	39.7	2.9	9.2	41.1	6.9	174
Bachelor's degree	41.5	2.6	9.5	41.8	4.6	778
Graduate diploma	36.2	4.8	13.2	35.9	9.9	729
Other	36.4	13.6	9.1	40.9	0.0	22
TOTAL						1,703
Round 4						
Master's degree	46.8	4.8	7.9	35.7	4.8	126
Bachelor's degree	55.8	2.4	9.4	28.0	4.5	669
Graduate diploma	45.8	5.0	12.1	27.3	9.7	578
Other	54.5	0.0	18.2	18.2	9.1	11
TOTAL						1,384

The data show that in each round the highest proportion of graduate teachers with a full time permanent teaching position were those with Bachelor's degrees and the highest proportion of graduate teachers with casual or permanent part time positions were those with Graduate Diplomas. Teachers who graduated with a Graduate Diploma were the least likely to have full time teaching employment.

The table below shows how agreeable employed graduate teachers were to staying in the same school for the following year.

Table 4.33: Graduate teachers with a teaching position by their plans to stay in current school for the following year

	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Strongly Disagree	26	2.7	83	3.7	36	2.1	35	2.7
Disagree	54	5.6	97	4.3	51	3.0	44	3.4
Neither Agree nor Disagree	121	12.6	287	12.7	138	8.1	109	8.4
Agree	260	27.1	543	24.0	421	24.6	338	26.1
Strongly Agree	498	51.9	1,251	55.3	1,065	62.2	768	59.4
Total	959	100.0	2,261	100.0	1,711	100.0	1,294	100.0

Across all four survey rounds over half of graduate teachers strongly agreed they would like to stay in their current school the following year, and a further quarter agreed that they would like to stay.

The table below shows the percentage of teaching graduates who were satisfied with their current employment. This question was only asked in Rounds 2 to 4.

Table 4.34: Graduate teachers with a teaching position by satisfaction with current employment, Round 2-4

Are you satisfied with the conditions of your employment?	Round 2		Round 3		Round 4	
	n	%	n	%	n	%
Yes	1,807	80.0	1,343	78.5	1,015	78.4
No	451	20.0	368	21.5	279	21.6
Total	2,258	100.0	1,711	100.0	1,294	100.0

Graduate teacher satisfaction with current employment remained consistent across the three relevant survey rounds. In Round 2, 80 per cent of graduate teachers were satisfied with their current employment compared to 79 per cent in Round 3 and 78 per cent in Round 4.

Attraction and attrition

In each of the first three Graduate Teacher Surveys, a 12-item scale was used to gather data about why graduate teachers were attracted to teaching. The items took the form of statements to which graduate teachers indicated their level of agreement (five response options ranging from 1=strongly disagree to 5=strongly agree). Only graduate teachers completing the SETE survey for the first time answered this question.

Principal components analysis on the scale in Round 1 showed that the 12 items reduced to three sub-scales, or components (i.e. all 12 items could be grouped under three common themes):

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

2. External influences:
   - Australian Tertiary Admission Ranking 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. Affinity for teaching:
   - Wanted to make a difference
   - Always wanted to teach/work with children
   - Teaching was a back-up plan (loaded negatively)
   - Wanted to work in an area of specialisation or interest.

Further information about this analysis is provided in the SETE Technical Report (Mayer, Allard, Bates, Dixon, Doecke, Hodder, Kline, Kostogriz, Rowan, Walker-Gibbs & White, 2014).

The item with the highest overall level of agreement, across Rounds 2 and 3 was 'Wanted to make a difference', followed by 'Wanted to work in an area of specialisation or interest' and 'Always wanted to teach/work with children'. The item with the lowest level of overall agreement was 'Teaching was a back-up plan'.

Table 4.35 shows the proportion of graduate teachers who at the time of survey completion would recommend their teacher education program to someone else. This information is included here as it helps to elaborate on the overall picture of graduates' attraction to teaching.

Table 4.35: Graduate teachers by recommendation of teacher education program

I would recommend my teacher education program to someone else	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Strongly Disagree	70	5.1	87	3.1	53	2.6	40	2.4
Disagree	139	10.1	239	8.6	160	7.7	160	9.7
Neither Agree nor Disagree	169	12.3	384	13.9	241	11.6	183	11.1
Agree	644	46.6	1,363	49.2	1036	49.9	916	55.6
Strongly Agree	356	25.9	699	25.2	585	28.2	348	21.1
Total	1,378	100.0	2,772	100.0	2,075	100.0	1,647	100.0

A clear majority of graduate teachers agreed or strongly agreed they would recommend their teaching program to someone else, though the number of respondents who strongly agreed dropped from 25-28 per cent in the first three survey rounds to 21 per cent in Round 4. Interestingly, in Round 4 the proportion of graduate teachers who strongly disagreed also dropped. Respondents were invited to explain their response in Round 2. The vast majority of graduates who responded reflected on their overall program experience as very positive. There were many comments made outlining the positive contribution to learning made by the university staff as mentors and that their program had been well structured. The responses also indicated that graduates enjoyed their professional experiences and that this was viewed as a significant part of their program satisfaction. Sample comments included:

> Extremely practical course linking theory and practise through partnerships and support from mentor teachers and other university staff. Learnt from lecturers who were teachers recently themselves. (Graduate teacher, Round 2)

> … well organised, university and staff very supportive. Degree was relevant to real life teaching situations, I felt prepared for teaching after completing the degree. (Graduate teacher, Round 2)

> The course was very rigorous but very rewarding, challenging and fulfilling. It was a good balance of theoretical study with practical application. The lecturing staff were very approachable, supportive and experienced in the field. (Graduate teacher, Round 2)

> The program that the University provided was engaging and explicit with the skills and attributes that we needed to obtain in order to teach. They provided us with REAL practicum situations early on in the program and emphasised the need to get

experience in all aspects of school life, to ensure we were prepared for teaching alone in a classroom. Most of all, the lecturers and tutors gave us a huge insight into teaching and school life from the early years and how students learn in multiple ways. (Graduate teacher, Round 2)

Graduate teachers who had completed a one year degree did tend to reflect that the length of duration of their program was an area they felt did not prepare them as well for their first year of teaching.

It offers 4 years of learning and practice as opposed to a Post Grad Diploma which only offers 9 months. (Graduate teacher, Round 2)

1 year dip ed program too short to learn all that is required, also difficult to get teaching position with only 1 year course. (Graduate teacher, Round 2)

Being a one year full time course it had very little time to cover some things. It was good to be able to change profession in just one year, however it was a vigorous pace. (Graduate teacher, Round 2)

There did not appear to be significant differences in responses from those graduates who had studied on campus compared to those who had studied on-line. The mode of study seemed to be equally valued depending on the circumstances of the teachers.

Also introduced in Round 2 was the question 'What are the conditions of your employment that you would change? Why?' This question was only answered by respondents who were not satisfied with the conditions of their employment (Rounds 2-4).

Table 4.36: Are you satisfied with the conditions of your employment?

	Round 2		Round 3		Round 4	
	n	%	n	%	n	%
Yes	1,807	80.0	1,343	78.5	1,015	78.4
No	451	20.0	368	21.5	279	21.6
Total	2,258	100.0	1,711	100.0	1,294	100.0

Overwhelmingly, the most common reply focused on some aspect of job security; that is, those who were working as CRTs wanted to change to contracts, those on contracts, wanted to change to permanent positions, and in a number of instances, those who were part-time permanent, wanted to move to full time. A typical reply was: 'I would prefer to be on an ongoing position rather than contract, for increased job security.' (Graduate Teacher, Round 2)

The main reasons given for the dissatisfaction included:

- the lack of ongoing or permanent employment;
- the 'conditions' of work, in particular, inadequate pay, long hours, lack of collegiality, lack of recognition for the additional duties undertaken; and

- the perceived inadequacies of leadership or mentoring in the school.

A few respondents used the opportunity to comment generally on how unsatisfactory the teaching experience as a whole was for them: 'I am unhappy and unmotivated as a teacher and are (sic) pursuing a career change.' (Graduate Teacher, Round 2)

By the fourth survey there was growing frustration associated with the lack of job security and a greater number of respondents wanting to change the location of their employment.

Table 4.37: Graduate teachers with a teaching position by their view of successfully influencing student learning

In my current teaching position I have been successful in influencing student learning	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Strongly Disagree	3	0.3	3	0.1	1	0.1	3	0.2
Disagree	7	0.7	8	0.3	9	0.5	4	0.3
Neither Agree nor Disagree	115	11.8	160	6.9	69	3.9	35	2.6
Agree	519	53.5	1,417	61.4	962	54.9	616	46.2
Strongly Agree	327	33.7	719	31.2	710	40.5	674	50.6
Total	971	100.0	2,307	100.0	1,751	100.0	1,332	100.0

Eighty-seven per cent of Round 1 respondents strongly agreed or agreed they had been successful in influencing student learning. This increased to 94 per cent in Round 2, 95 per cent in Round 3 and 97 per cent in Round 4. The change from Round 1 was a positive one, with more teachers indicating they had been successful in influencing student learning.

In both surveys administered in 2012 a clear majority agreed or strongly agreed that they were having an influence on student learning, and over time the graduate teachers often made more explicit links between their own development as teachers and their impact on student learning.

The evidence cited included:

- knowledge gained through the use of assessment tools;
- feedback from students, colleagues, mentors, principals and parents;
- observable student engagement, enjoyment, growth and positive attitudes to learning; and
- increased attendance at school and improved attitudes to learning of their students (for some of those who were working with what they called 'challenging' students).

While the same types of 'evidence' are cited in the second survey as in the first, the breadth, depth and language/terminology used by graduates in responding to this question the second

time around are suggestive of a developing confidence in their own skills and knowledge as well as a deepening of their professional identities.

Casual Relief/Supply Teachers (CRT) and those just starting to teach were the least likely to think they were having an influence on student learning: 'As a CRT, the opportunity to have significant influence is not great so it is hard to judge' (Graduate teacher, Round 1) and 'As a substitute teacher there is no way to verify this.' (Graduate teacher, Round 1) It should be noted, that these responses were few. Another very small group of Round 1 respondents replied with statements including 'I don't know' or 'I only see my classes once a week and am struggling with controlling difficult behaviours and don't feel as though I am teaching them anything'.

In addition to providing an overall perception of their influence on student learning, Round 3 and Round 4 respondents were asked to respond to seven statements about discrete areas of student learning. In Round 4 the items with the highest levels of agreement were 'Improving student skills', 'Improving student subject-matter knowledge' and 'Improving student understanding'. The lowest level of agreement by a significant margin was for 'Improving student performance in standardised tests'. The same patterns were evident in the Round 3 data.

Future plans of graduate teachers

Table 4.38 shows where graduate teachers saw themselves in three years' time. Respondents could select only one option.

Table 4.38: Graduate teachers by plans for three years' time

Where do you see yourself in three years' time?	Round 1		Round 2		Round 3		Round 4	
	n	%	n	%	n	%	n	%
Working as a teacher in a school	858	66.0	1,646	63.4	1,229	59.5	751	49.3
Working as a teacher in an alternative setting; i.e. adult education	85	6.5	131	5.0	106	5.1	88	5.8
In a leadership position in a school	165	12.7	425	16.4	344	16.6	310	20.4
In an education project, policy or research position	37	2.8	80	3.1	78	3.8	67	4.4
Working outside of teaching/education altogether	57	4.4	122	4.7	129	6.2	136	8.9
Other	98	7.5	193	7.4	181	8.8	171	11.2
Total	1,300	100.0	2,597	100.0	2,067	100.0	1,523	100.0

Responses that made up the 'other' category included:

- Doing further studies
- Teaching overseas/ travelling
- Casual teaching
- Returning to previous profession
- Working in early childhood
- Working in another field - Guidance Officer, Environmental Education Officer, Speech Therapy, Social Work
- Stay at home mother
- Unsure

The trend depicted in Table 4.38 was also true for the longitudinal sample.

Round 3 and 4 respondents future plans were cross tabulated with teaching status at the time of survey completion in the tables below.

Table 4.39: Graduate teachers current teaching employment by plans for three years' time, Round 3

Where do you see yourself in three years' time?	Currently employed as teacher		Not employed as teacher	
	n	%	n	%
Working as a teacher in a school	1,083	63.4	145	40.6
Working as a teacher in an alternative setting; i.e. adult education	69	4.0	37	10.3
In a leadership position in a school	335	19.6	9	2.5
In an education project, policy or research position	51	3.0	27	7.5
Working outside of teaching/education altogether	56	3.3	73	20.3
Other	113	6.6	68	18.9
TOTAL	1,707	100.0	360	100.0

**Table 4.40: Graduate teachers current teaching employment by plans for three years'
time, Round 4**

Where do you see yourself in three years' time?	Currently employed as teacher		Not employed as teacher	
	n	%	n	%
Working as a teacher in a school	680	52.7	71	30.6
Working as a teacher in an alternative setting; i.e. adult education	61	4.7	27	11.6
In a leadership position in a school	307	23.8	3	1.3
In an education project, policy or research position	54	4.2	13	5.6
Working outside of teaching/education altogether	70	5.4	66	28.4
Other	119	9.2	52	22.4
TOTAL	1,291	100.0	232	100.0

Graduates who were employed as teachers in schools reported seeing themselves employed as teachers and school leaders in three years' time at a higher rate than graduates not in teaching employment. Graduates not currently employed as teachers could see themselves working outside of education in three years' time at a much higher frequency than those employed as teachers.

At the conclusion of each Graduate Teacher Survey, respondents were asked to make final comments about their preparedness for teaching. A substantial group of teachers said they were well prepared by their teacher education but did not specify in what ways other than through their 'professional experience'. Graduate teachers called for more practical experience during teacher education. This issue overwhelmingly dominated the responses from teachers. For many, this was expressed as recognition of the positive impact of their 'professional experience' and a call for its extension. For a significant number of other teachers this was expressed as a rejection of theoretical work and a demand for a more practical approach.

The second most significant concern in regard to preparedness was around employment. In this regard the teachers stated they were unprepared to be unemployed and unprepared for the casual relief work they would do as they waited for full employment.

Concerns for lack of preparation around classroom management were often linked to the paucity of practical experience. Teachers also expressed their lack of preparedness to be 'work ready' that is to know the day to day routines of teachers' work and to understand the

structures in which they must work at a school and a jurisdictional level. Other issues arose around preparedness in regard to: Australian curriculum; the variety of school contexts; Indigenous students; differentiated curriculum and senior school curriculum. Many teachers did not believe that they had been adequately prepared for the reality of an oversupply of teachers and the multiple demands of the classroom.

Other themes to emerge from the free-text responses to open-ended questions focused on:

1. Sources of satisfaction/enjoyment in their teaching
2. Ways to improve the quality of teacher education
   - Less theory/ more practice
   - Apprenticeship versus university
   - Importance of the practicum
   - More focus on behaviour
   - More focus on dealing with difference
   - More focus on assessment
   - More focus on non-teaching issues
3. Transition into teaching: issues/concerns
   - More mentoring
   - More support for non-teaching issues including stress, work-life balance, relationships with colleagues and parents/caregivers
   - More employment opportunities
4. Concerns regarding the status of the profession/remuneration.

Summary of findings related to career progression:

A clear majority of graduate teachers agreed or strongly agreed they would recommend their teaching program to someone else.

Attraction to teaching could be grouped according to job characteristics, external influences and affinity for teaching. Consistently, the key attraction was a desire to 'Make a difference'.

Between Round 1 and Round 4 the proportion of teacher education graduates employed as teachers shifted from 73 per cent to 86 per cent.

In Round 3 and 4, 38 per cent of the graduate teachers were employed in secondary schools and 44-46 per cent in primary schools. This is fairly consistent with Round 2 data but differs from Round 1 where 48 per cent were secondary teachers and 46 per cent primary teachers.

In 2014 just over half of the respondents were employed in full-time permanent employment. This was a large increase in full-time permanency from the earlier rounds.

Between Rounds 1 and 4 there was an increase in the number of teachers employed on a permanent basis and a decrease in those in full time contract work.

In each round the highest proportion of graduate teachers with a teaching position were those with a Bachelor's degree.

Of those currently teaching in 2014, 99 per cent had taught prior to 2014 and of those not currently teaching, 72 per cent had previously been employed as teachers.

Over half of graduate teachers strongly agreed they would like to stay in their current school the following year, and a further quarter agreed that they would like to stay.

The three major reasons for changing schools were: non-renewal of contract, desire for permanent employment and need for financial security.

The majority of graduate teachers did not hold any leadership position (66-83 per cent).

Between Round 1 and Round 4, 12-27 per cent of graduate teachers were not employed as teachers.

The number of graduates not employed as teachers who were actively seeking a teaching position fell from over three-quarters at the first survey to 58 per cent of Round 3 respondents. By the following year this number had dropped to 41 per cent.

In 2014, 20 per cent of graduate teachers indicated no intention to seek a teaching position in the future.

Commonly perceived obstacles to securing a teaching position could be categorized as economic, social and affective.

In 2012, a clear majority of graduate teacher respondents agreed or strongly agreed that they were having an influence on student learning, and over time the graduate teachers often made more explicit links between their own development as teachers and their impact on student learning.

Casual Relief/Supply Teachers (CRT) and those just starting to teach were the least likely to think they were having an influence on student learning.

Graduates who were employed as teachers in schools reported seeing themselves employed as teachers and school leaders in three years' time at a higher rate than graduates not in teaching employment.

Graduates not currently employed as teachers could see themselves working outside of education in three years' time at a higher frequency than those employed as teachers.

4.3 Principal Survey

The target population for the Principal Survey was principals of schools who employed 2010 and/or 2011 graduate teachers who had responded to the Graduate Teacher Survey. Therefore the total number of principals asked to participate in the Principal Survey was dependent on the number of responses to the Graduate Teacher Survey. There was a general media advertisement sent out through Principal Associations and during Round 1 an invitation was sent to all schools, but generally only the principals of the graduate teachers participated in the survey.

This school component of the SETE project was to ask principals to comment on the preparedness and effectiveness of graduate teachers, the types of support offered to them in schools and the challenges the teachers faced.

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 given from all Catholic education offices.

The Round 1 Principal Survey was open throughout May 2012 and the Round 2 Principal Survey opened in November and closed December, 2012. The third and final survey was open April to May 2013.

4.3.1 Sample representativeness and response rates

A total of 1,001 Principal surveys was completed across three survey rounds (Round 1, 2 and 3). Principal responses were gathered for matching with survey responses from graduate teachers and as such no attempt was made to secure a representative sample from principals. In some instances principals opted to delegate completion of the survey to another school leader (10.9 per cent of responses).

The response rate for Round 1 was 11 per cent of invited principals (448 responses), Round 2 was 16 per cent (253 responses) and Round 3 was 25 per cent (300 responses). The Principal responses could be matched to 115 individual teachers in Round 1, 227 in Round 2 and 242 individual teachers in Round 3.

The demographics of the schools in which principal respondents were located are presented in Table 4.41.

Table 4.41: School demographics

School characteristic	%
Location of school	
Victoria	55
Queensland	45

Rurality indicator	
Capital city	42
City with more than 15,000 people	23
City between 3,000 and 15,000 people	13
Town with 500 – 3,000 people	14

Town with less than 500 people	8	More than 700		29
School sector		**Proportion of students of Aboriginal or Torres Strait Islander descent**		
Government	78	None		19
Catholic	13	1-5 per cent		61
Independent	9	6-10 per cent		11
School type		More than 10 per cent of students		8
Primary	51	**Proportion of student who have a disability**		
Secondary	29	None		4
K-12	15	1-5 per cent		69
Other	6	6-10 per cent		16
Number of full time equivalent teachers		More than 10 per cent of students		10
1-10 per cent	17			
11-20 per cent	17	**Proportion of students who have a language background other than English**		
21-50 per cent	37	None		13
More than 50 per cent	29	1-10 per cent		55
Number of students		11-20 per cent		11
Less than 50	6	21-40 per cent		12
50-199	20	More than 40 per cent of students		9
200-449	26			
450-699	19			

These figures were calculated using a combination of publically available school data and data made available by the Industry Partners involved in the project.

When data from the ABS Schools Australia 2011 census were considered for comparisons between school sectors and the proportions of school types in the SETE survey, it showed an over-representation of secondary schools compared to their proportion of the total number of schools – 16 per cent of all schools across Australia. Primary schools are under-represented in the survey compared to their proportion of total schools – 70 per cent of all Australian schools.

The location of schools where respondents were employed showed the majority (65 per cent) were in capital cities or other large cities. Eight per cent of respondent's schools were in towns with a population of less than 500.

Records show that in Victoria and Queensland approximately 25 per cent of government schools have ten or fewer teachers (Wildy & Clarke, 2005). This number ranged from 9-29 per cent across the three survey rounds and across all school types.

Based on principal report, three to ten per cent of the schools had student enrolments of 50 or less, and 21-36 per cent had enrolments of more than 700. As Table 4.41 shows, there was a higher proportion of respondents from secondary schools than was in the school population overall, so the high proportion of schools with large student numbers fits with this finding.

Sixty-one per cent of respondents' schools had between one and five per cent of their students identifying as Aboriginal or Torres Strait Islander. The proportion of Indigenous students in the whole school population (as reported in ABS Schools Australia, 4221.0) was 4.8 per cent (ABS, 2011c). Eight per cent of respondents' schools had more than ten per cent of the student population from an Aboriginal and/or Torres Strait Islander background. Seventeen to twenty-five per cent of schools in the survey had no Aboriginal or Torres Strait Islander students.

Across the three survey rounds, sixty-nine per cent of respondents' schools reported that between 1 to 5 per cent of the student population had a disability. Sixteen per cent of respondents' schools had between 6 to 10 per cent of their students with a disability. Four per cent report that there were no students with a disability enrolled in a school in the survey.

More than half the schools had less than 10 per cent of their students from a language background other than English. Figures on national data show approximately ten per cent of students speak a language other than English in their homes (Ainley et al., 2000).

The table below shows the position of the person in the school who conducted the performance appraisal of graduate teachers.

Table 4.42: School position of person/team who conducts graduate teacher performance appraisal

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
The principal	33	29.2	74	37.4	55	23.3
School leadership team	51	45.1	75	37.9	108	45.8
HR coordinator	1	0.9	0	0	1	0.4
Mentor of the graduate	17	15.0	26	13.1	34	14.4
Other	11	9.7	23	11.6	38	16.1
TOTAL	113	100.0	198	100.0	236	100.0

While there were differences in the results for each survey round, in each case the school leadership team was reported as conducting the greatest proportion of graduate teacher performance appraisals followed by the principal and graduate teacher mentor.

Table 4.43 shows the number of new graduates that were in the school.

Table 4.43: How many equivalent full-time (EFT) teachers are employed at your school?

	Round 1		Round 2*		Round 3*	
	n	%	n	%	n	%
First year teachers						
None	119	26.6	21	9.5	72	26.4
1	102	22.8	63	28.4	54	19.8
2-3	153	34.0	79	35.6	80	29.3
4-5	50	11.2	34	15.3	42	15.4
6-10	20	4.5	20	9.0	20	7.3
More than 10	4	0.9	5	2.3	5	1.8
Second year teachers						
None	120	26.8	29	13.1	42	15.4
1	91	20.4	55	24.8	59	21.6
2-3	155	34.7	92	41.4	104	38.1
4-5	50	11.2	30	13.5	45	16.5
6-10	27	6.0	11	5.0	19	7.0
More than 10	4	0.9	5	2.3	4	1.5
Third year teachers						
None	NA	NA	NA	NA	54	19.8
1	NA	NA	NA	NA	44	16.1
2-3	NA	NA	NA	NA	100	36.6
4-5	NA	NA	NA	NA	49	17.9
6-10	NA	NA	NA	NA	20	7.3
More than 10	NA	NA	NA	NA	6	2.2
TOTAL	447	100.0	222	100.0	273	100.0

*Includes only the participants new in these rounds

In Round 1 and Round 3, 26-27 per cent of schools had no first year graduate teachers employed compared to 10 per cent of schools in Round 2. Around one third of schools employed two to three first year graduates and one-third two to three second year graduates. There was a higher proportion of schools in Round 2 and Round 3 with four to ten graduate teachers than in Round 1.

Principals were asked in the survey if they liked to employ graduate teachers. Their responses are shown in the figure below.

Figure 4.6: Principals' willingness to employ first year graduate teachers
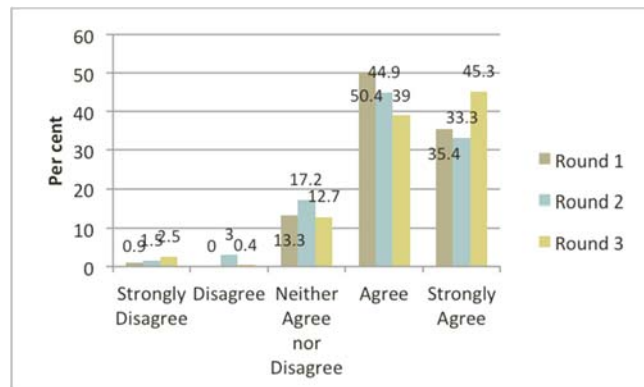
Thirty-nine to 50 per cent of principals agreed that they like to employ graduate teachers, and 33-45 per cent strongly agreed. Across the three rounds less than 5 per cent either strongly disagreed or disagreed that they like to employ graduate teachers.

According to Principals, the majority of graduate teachers did not hold any leadership position. This finding was consistent with graduate teacher responses.

Table 4.44: Graduate teachers by leadership position in their school

	Round 1		Round 2		Round 3	
	n	%	n	%	n	%
Yes	36	31.3	31	13.7	52	21.4
No	79	68.7	196	86.3	191	78.6
TOTAL	115	100.0	227	100.0	243	100.0

4.3.2 General findings from the Principal Surveys

Principals' perceptions of graduate teachers' preparedness and effectiveness

Figure 4.7 matches principals' responses to questions about the effectiveness of their graduate teachers to the responses from the graduate teachers. The means were calculated by averaging all responses to 16 items with five point Likert scale response options (1=strongly

disagree, 5=strongly agree). The 16 items that make up the effectiveness scale are discussed earlier.

Figure 4.7: Matched graduate teacher and principal means for overall effectiveness, Round 2 and 3
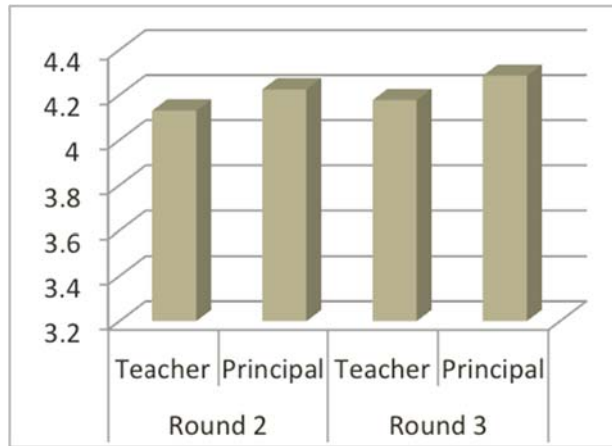
These responses show that principals, on the whole, perceive graduate teachers as being effective. In general principals tended to report higher agreement in relation to graduate teacher effectiveness than did the teachers. This noted, the scale used in the figure above exaggerates small differences.

Table 4.45 presents teacher and principal means for each of the nine areas of effective teaching of particular relevance to the SETE project:

- Collegiality
- Design and implementation of curriculum
- Professional ethics
- Engagement with ongoing professional learning
- Assessment and the provision of feedback and reporting on student learning
- Classroom management
- Professional engagement with parents/carers and the community
- Teaching culturally, linguistically and socio-economically diverse learners
- Pedagogy

Table 4.45: Matched graduate teacher and principal means for the effectiveness sub-scales*

| | Round 1 | Round 2 | | Round 3 | |
	Principal (n=115)	Teacher (n=217)	Principal (n=227)	Teacher (n=234)	Principal (n=243)
Collegiality	4.29	4.28	4.45	4.27	4.55
Design and implementation of curriculum	4.01	4.08	4.14	4.16	4.13
Professional ethics	4.35	4.32	4.53	4.35	4.61
Engagement with ongoing professional learning	4.46	4.35	4.52	4.33	4.52
Assessment and the provision of feedback and reporting on student learning	4.09	4.07	4.14	4.16	4.18
Classroom management	4.05	4.11	4.04	4.19	4.23
Professional engagement with parents/carers and the community	3.95	4.09	4.16	4.16	4.33
Teaching culturally, linguistically and socio-economically diverse learners	3.99	3.77	3.81	3.84	3.89
Pedagogy	4.11	4.02	4.07	3.99	4.11

Table 4.45 shows that principals' perceptions of effectiveness across the key areas highlighted in the sub-scales were similar but generally slightly higher than the graduate teachers self-rating. The exceptions were slight differences in 'Classroom management' in Round 2 and 'Curriculum' in Round 3.

The areas with the greatest percentage of agreement on graduate teacher effectiveness were 'Collegiality', 'Engaging in professional learning' and 'Professional ethics'. The areas where agreement was lower were 'Teaching culturally, linguistically and socio-economically diverse learners', and 'Classroom management'. This information is illustrated in Figure 4.8.

Figure 4.8: Matched graduate teacher and principal means for the effectiveness sub-scales*
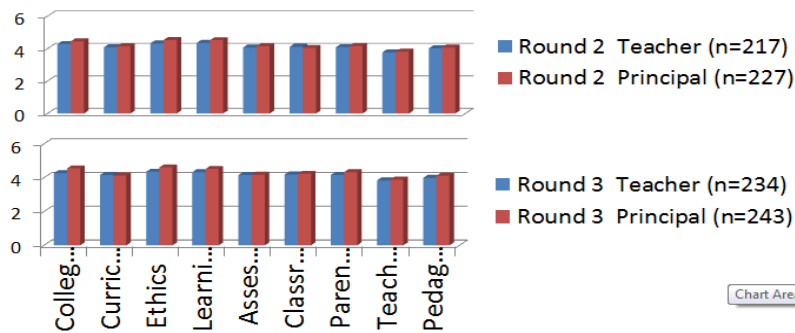
Round 1 was not provided as in this survey round the teachers responded to 46 items about their perceptions of preparedness and the principals to the sub-scales in relation to performance.

The analysis of principals' additional comments about the preparedness of graduate teachers reflected three major themes:

1) Their emphasis on schools as sites of further professional learning to increase teachers' preparedness;

2) Their views of teacher education providers as solely accountable for teacher preparedness; and

3) Their emphasis on the personal qualities, characteristics and attributes of graduate teachers as central to one's preparedness for work.

This diversity of perceptions was related to how the principals perceived the term 'preparedness' and what they considered to be the most important factors in this regard. The majority of the principals perceived 'preparedness' as an ongoing process and as something that continued well into the first two years of initial employment. The following quote captures this general perception:

> I don't think any graduate teacher is truly ready for the rigor of teaching for the first time. Much of this is based around learning over the first two years of their work life and it is a maturing process for most graduates. Provided there is good support from the school in a leadership capacity and a collegiality perspective, graduate teachers become better equipped for the needs of the first couple of years of school. (Principal, Round 2)

Many principals had put support and mentorship structures in place to make the transition process as productive as possible. The first two years were seen as an extension opportunity for beginning teachers to learn the 'craft' through their immersion into the 'real' world of teaching. In this regard, most of the principals perceived their beginning teachers as generally prepared for work and assessed their general preparedness as a foundation on which teachers can build their professionalism.

Those principals who perceived 'preparedness' as workplace readiness developed a more critical perspective on what beginning teachers should be able to do after graduation. These perceptions were situated within particular context of schools and hence reflected more

specific rather than general concerns. Among improvement areas that were identified by the principals the most frequently mentioned were classroom management, pedagogical content knowledge, particularly in the areas of literacy and numeracy education, and teachers' ability to respond to the needs of the English and an Additional Language (EAL) students and students with disabilities. Other areas that the principals identified as requiring a better initial preparation were the development of teacher capacity to engage with parents and community, work collegially with others, building awareness of the broad role of the teacher, raising their sense of increasing accountability and its effects on how schools operate, and a better understanding of school organization.

A significant number of principals provided more general comments on how the preparedness of beginning teachers could be improved. In particular, they put emphasis on increasing the quality and length of school practicum, incorporating selection interviews or aptitude testing into the admission process in addition to raising the ATAR scores, and familiarising preservice teachers with federal and state governmental initiatives and policies in their final year of preparation. These comments signified the key areas of improving the quality of beginning teachers from the point of view of principals. In particular, this reflected their views about the importance of personal characteristics, attitudes and experiences of students who apply to teacher education programs, linking this to the performance and professionalism of beginning teachers in their first years of teaching. Indeed, as one principal argued, 'their preparedness to work professionally and with professionals is a key indicator for me of their likely suitability for our school and their future effectiveness as a teacher.' (Principal, Round 2) The principals argued that, in the currently perceived context of teacher oversupply, they have opportunities to be more selective and 'choosy', thereby employing higher quality and more prepared graduates.

Influence on student learning and perceptions of preparedness and effectiveness

In the Principal Survey, the questions about the effectiveness of teachers in key areas was followed by questions on whether the principal agreed or disagreed that this teacher had been successful in influencing student learning. The figures below compare what principals said in relation to graduate teachers' success in influencing student learning to the graduate teachers' responses to the same questions. The question asked in Round 1 and 2 was altered in Round 3 to enable collection of additional information about the area of influence.

**Figure 4.9: Matched graduate teacher and principal mean scores for graduate teachers'
successes influencing student learning, Round 1 and 2**
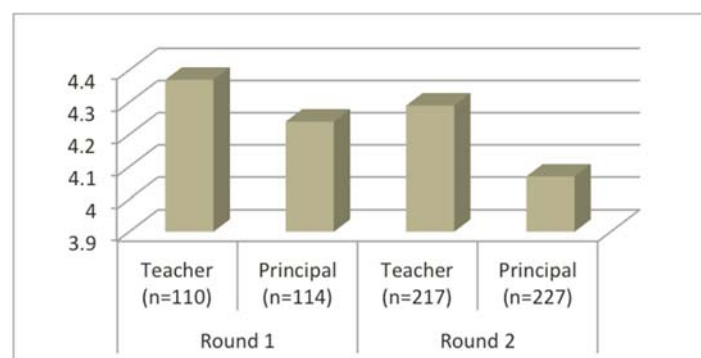
Comparison of responses showed that while a clear majority of teachers and principals either agreed or strongly agreed that the teachers had been successful in influencing student

learning, teachers' responses were spread evenly across 'agree' and 'strongly agree', while principals were more likely to select 'agree'. Principals were also more likely to select 'disagree' or 'strongly disagree' than the teachers, resulting in lower mean scores being provided by principals in Rounds 1 and 2. This was the first question for which principal reports were on the whole less positive than the self-report of the individual graduate teachers.

In Round 3 a new question was introduced to ascertain if principal and teacher agreement about graduate teachers' influence on student learning differs for particular areas. Comparisons of teacher and principal responses revealed higher mean scores provided by principals for each area of student learning.

Figure 4.10: Matched graduate teacher and principal mean scores by areas of student learning, Round 3
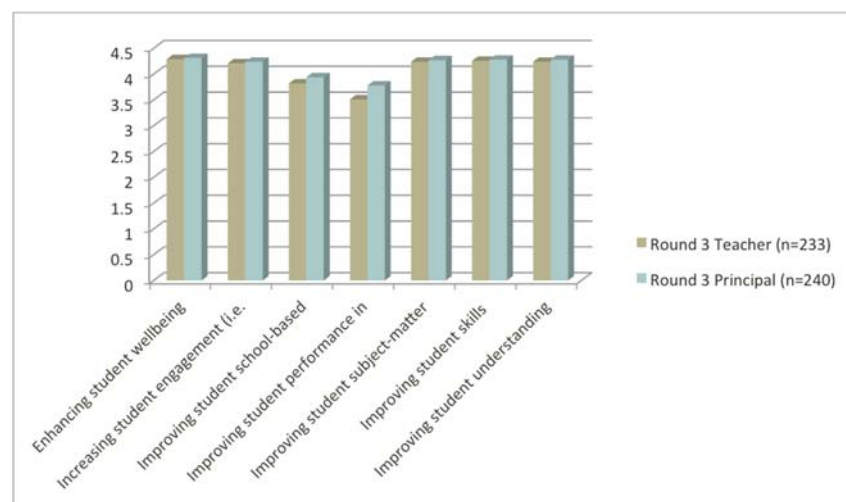
The majority of principal comments about graduate teachers' influence on student learning related to overall effectiveness, quality and improvement that occurred as graduates moved from their first year into their second year. Interestingly, many of the comments that principals made about the nature of this improvement related back to the key areas of teaching identified through analysis of the literature and professional standards, these included:

- General improvement due to experience and passage of time
- Improvements in relation to curriculum – having a better idea of how a school works and how to engage their students. Know more about curriculum and how to plan.
- Improvement in relation to classroom management
- Improvement in influencing student learning
- Improvement in focusing on needs of diverse learners
- Relationships with students

Minor themes included the observations that graduate teachers are:

- Still learning
- Still needing support
- Partially inadequate
- Poorly prepared by university.

Support for Graduate Teachers

The other key area of intersection of the questions in the Graduate Teacher Survey and the Principal Survey were questions regarding support in schools for graduate teachers.

The tables below show what support principals stated was available for first year teachers. Support questions were only asked in Rounds 2 and 3.

Table 4.46: Support available to graduate teachers, Round 2

Type of support	Availability of the support item (%)		
	Yes	No	Unsure
Induction program	99.0	1.0	0.0
Formal mentor arrangement	80.2	19.3	0.5
Informal mentor arrangement	81.8	15.6	2.6
Ongoing network with other beginning teachers	55.2	38.0	6.8
Guidance on curriculum and classroom planning	99.0	0.5	0.5
Ongoing professional development opportunities	99.5	0.5	0.0
List of informative websites	61.5	28.1	10.4
Information on pay and conditions	83.9	8.3	7.8
Regular debriefing opportunities	90.6	5.7	3.6

(n=192)

Table 4.47: Support available to graduate teachers, Round 3

Type of support	Availability of the support item (%)		
	Yes	No	Unsure
Induction program	97.9	1.2	0.8
Formal mentor arrangement	82.3	17.3	0.4
Informal mentor arrangement	85.2	14.0	0.8
Ongoing network with other beginning teachers	63.8	28.8	7.4
Guidance on curriculum and classroom planning	98.8	0.4	0.8
Ongoing professional development opportunities	99.2	0.4	0.4
List of informative websites	57.2	29.2	13.6
Information on pay and conditions	84.0	7.4	8.6
Regular debriefing opportunities	92.2	5.3	2.5

(n=243)

Of the nine items relating to support listed in the survey, principals stated that 'Ongoing professional development opportunities' was the item most widely available across schools. Least available was a 'List of informative websites' and an 'Ongoing network with other beginning teachers'.

Another way of looking at the data is to compare graduate teachers' ratings of in-school supports to principal reports of whether or not the support was made available. Table 4.48 shows the level of importance of each support item to graduate teachers, and the percentage of principals who stated this item was available in their school, Round 2.

Table 4.48: Graduate teachers with a teaching position by the importance of support received in school alongside availability of this item, Round 2

	Teachers state it is not available (%)	Strongly disagree/ disagree (%)	Strongly agree/ agree (%)	Principals state it is available (%)
Induction program	19.8	10.9	56.5	97.8
Formal mentor arrangement	21.6	13.1	55.9	78.2
Informal mentor arrangement	15.9	5.7	68.4	86.8
Ongoing network with other beginning teachers	20.9	8.7	56.5	70.7
Guidance on curriculum and classroom planning	13.3	8.3	66.7	99.4
Ongoing professional development opportunities	7.2	4.8	75.7	100.0
List of informative websites	19.4	14.7	47.1	62.8
Information on pay and conditions	13.2	16.5	46.8	82.6
Regular debriefing opportunities	15.1	9.5	63.2	91.8

This table reveals differences in Round 2 graduate teacher and principal perceptions of the availability of in school supports, with principals more likely to have stated that induction programs, guidance on curriculum and classroom planning, ongoing professional development opportunities and debriefing opportunities were available. Graduate teachers were more likely than principals to acknowledge the availability of networks with other beginning teachers, list of informative websites and information on pay and conditions.

Table 4.49 shows the professional learning that was available to graduate teachers in their schools in 2012, as stated by the principals.

Table 4.49: Professional learning opportunities offered in schools to graduates in 2012, Round 2

Answer	Response	%
Collegiality - working collaboratively with colleagues	174	81
Understanding, design and implementation of curriculum	200	93
Demonstrating an understanding of professional ethics	118	55
Assessment of student learning	197	92
Classroom management	181	84
Engagement with parents and the local community	100	47
Catering for diverse learners	169	79
Pedagogy	184	86
Other, please specify	35	16

The area of professional learning that was available across the largest proportion of schools in the survey was 'Understanding, design and implementation of curriculum' with 93 per cent. The area that was available across the smallest proportion of schools was professional learning in 'Engagement with parents and the local community', with 47 per cent.

Transition into teaching

In Rounds 1 and 2 the principals reported the attributes that created successful and difficult transitions for graduate teachers into teaching.

Responses to the open-ended question 'What elements of teacher education programs do you find better prepare graduates for your school context?' were overwhelmingly focused on 'in-school' experience. This was consistent across all three rounds of the Principal Surveys. Many responses were simply stated as 'more placement'. However many others detailed this element. Internships or longer placements were identified as a major requisite. Principals also identified that these were preferably positioned in the final year of the program. In general the responses identified that the in-school experiences should provide preservice teachers with a range of experiences in diverse school locations. Further, the placements should be supported by an experienced teacher and by support on site from a university lecturer.

Other issues were identified but with only a small number of responses for each. 'Classroom management' was of some concern with an identified need to address 'difficult' student behaviour. There were a similarly small number of responses around 'curriculum'. Here the principals identified new curricula such as Australian Curriculum as an important element. Diversity was also identified with particular comment made around 'special needs'. Finally, 'pedagogy' was mentioned but it appeared to refer to strategies for teaching and in particular for teaching Literacy, Numeracy and ICT.

Attracting and retaining graduate teachers to schools

The table below shows the principal or school leader responses to whether or not the school had difficulty attracting and retaining teachers.

Table 4.50: Difficulty for school in attracting and retaining graduate teachers

	Yes		No	
	n	%	n	%
Difficulty attracting graduate teachers*				
Round 2	30	15.2	167	84.8
Round 3	40	17.0	195	83.0
Difficulty retaining graduate teachers				
Round 1	31	27.4	82	72.6
Round 2	36	18.4	160	81.6
Round 3	51	21.7	184	78.3

(Round 1 n=113, Round 2 n=196, Round 3=235) * This question was not asked in Round 1

The majority of schools had no difficulty attracting or retaining teachers, although the responses show it was easier for schools to attract graduate teachers (83-85 per cent) than retain them (73-82 per cent).

Many of the principal respondents indicated that their schools had been inundated with applications from graduates whenever they advertised positions. This suggested a situation where supply exceeded demand, except (crucially) with respect to 'hard-to-staff' vacancies.

Not many of the principals referred to difficulties in staffing specific subject areas, though there were some (Mathematics/Science, English, Languages, and Physics). Respondents mainly focused on the location of schools and the willingness of graduates to move outside of major population centres. Several principals emphasised the desirability of the location and the reputation of their schools, as a draw card: 'We are in an academic metropolitan school, with a good reputation, therefore it is not difficult to attract graduate teachers' (Principal, Round 2). By contrast, principals in rural and remote locations told a different story:

Getting graduates to leave the coastal regions where they have grown up and attended uni is a challenge. (Principal, Round 2)

There is a difficulty in attracting any teacher to our location, because of remoteness and isolation from the city. (Principal, Round 2)

Being rural and remote – there are incentive schemes that attract people to our area. Does not mean that everyone is a quality candidate. (Principal, Round 2)

We are a smaller rural location and some graduates are reluctant to move, especially if they have a partner who may not want to move to our town due to limited work options… (Principal, Round 2)

Our remote location does not lend itself to the social aspects that a significant number of young people want to be involved in. (Principal, Round 2)

Some respondents also emphasized the problems created by the lack of affordable housing. A number of respondents indicated that they recruited staff from student teachers who had done teaching practice at their schools. Indeed many principals reported taking a pro-active stance with respect to attraction and retention, forming links with teacher education programs and establishing a supportive professional culture for early career teachers in their schools.

Many schools were nonetheless facing considerable difficulties retaining their graduates, especially those in rural and remote regions, as well as schools with a low ICSEA score. Some principals reported that, despite the difficulties associated with attracting staff, once graduate teachers started there, they generally found the experience rewarding, and they stayed on.

The free-text comments from principals as to why they did not like employing graduate teachers helped explain some of the further difficulty in retaining teachers, especially in those schools that are in rural and remote regions that have a small number of staff.

The most common reason given by schools for difficulties retaining teachers was their location, with principals noting that graduate teachers leave due to the remoteness and isolation of rural and regional schools and teachers wishing to return to major cities for social and family reasons. Department staffing policies also played a major part in schools being unable to keep graduate staff, particularly in Queensland. This is reflected in responses noting the lack of staffing flexibility (i.e. on-going staff having preference over contract staff), the system placing on-going staff at schools, inability of schools to offer permanent placements thereby staff leaving to take up permanent positions elsewhere, and the Department policy of graduate teacher transfer to non-preferred regions; all factor in school management decisions. Another factor identified graduate staff leaving after two or three years to take time out from teaching for international travel. Another category for graduate staff leaving was the inability of the graduate to cope at school; a number of principals stated their graduates had problems with issues such as school staff culture (negative attitudes and dismissive of graduates new ideas), workloads, parent expectations and student behaviour. Falling school enrolments also factored into graduate staff leaving; fewer positions, meant that the graduates who were on contracts were the first staff to be let go. Very few principals indicated that they chose not to re-employ a graduate due to 'performance issues'.

The main reasons why graduates did stay at schools, according to principals, were the supportive environment and collegiate culture created at school, and staff satisfaction and being happy at the school. Location of the school, either in a large city or graduates returning

to their rural hometown, was listed as a further common reason for retaining graduates. Other factors included: the mentoring/coaching, career pathways and leadership opportunities offered by the school; ability to offer permanent positions; school reputation; respectful students who want to learn and achieve; committed, organised and enthusiastic teachers; supportive parents and community.

Some of the reasons why principals didn't like employing graduate teachers were:

> In the last two years I have become most disappointed by the quality of the graduates. (Principal, Round 1)

> School has a large proportion of teachers in their early years in the profession and limited mentors with experience and successful practice to support them. Unless they are outstanding, it has a massive workload impact on administration and mentors. (Principal, Round 1)

> Need to have some teaching practice before entering multi-age small school situation. (Principal, Round 1)

Some of the reasons why principals were neutral about employing graduate teachers are:

> I don't usually have a choice of staff. (Principal, Round 1)

> It depends on the current staffing structure. If we feel we need a graduate, then we advertise for a graduate. If we already have a graduate, then we might feel we need a more experienced person given our small school. (Principal, Round 1)

> Depends on the person and if they 'fit' our school. (Principal, Round 1)

Some of the reasons why principals liked employing graduate teachers were:

> Add variety to the college and are cheaper to employ! (Principal, Round 1)

> In general, first year teachers can be more easily influenced to adopt good practices than 'experienced' teachers. (Principal, Round 1)

> They bring new ideas, a fresh energy; they actually motivate senior, mentoring staff who are allocated the responsibility of guiding/assisting the first year teachers. (Principal, Round 1)

> I strongly believe that we have a responsibility to give new teachers an opportunity to learn and be part of our team. Our staff is aging and new blood and ideas is necessary to continuity of skills and knowledge when working with our very special students. (Principal, Round 1)

Graduate teacher successes and challenges

Open-ended questions about the key successes and challenges experience by graduate teachers in their initial years of teaching were included in the Graduate Teacher and Principal Surveys. The responses were analysed thematically and then categorised for the purpose of analyses.

When asked about key challenges, the graduate teachers and principals both identified classroom management and catering for diverse learners as the most challenging aspects of teaching for early career teachers, though teachers rated these areas as more challenging than principals. Similarly, teachers rated assessment and reporting and planning as common challenges, but these were not as readily recognised by principals as key challenges for graduate teachers. Principals were more likely to identify pedagogy, differentiation and workload as challenges for new teachers.

Challenges in the areas of assessment and reporting, curriculum, pedagogy, program implementation, understanding school expectations and systems, professional ethics and differentiation were readily noted by those in their first year of teaching, while graduate teachers with at least one-year of teaching experience referred more often to challenges in the areas of parent and local community engagement, collegiality, ongoing professional learning and mentoring, induction and support.

The common successes cited by graduate teachers were focussed on:

- **students and building relationships** – for example: student engagement, relationships, wellbeing; building relationships with either students, families or schools; 'connecting' with students or building collegial communities and developing positive relationships or engaging students or forming positive relationships and 'getting to know my kids'; a further group named 'knowing my students'; and some simply 'relationships'.
- **creating safe and supportive classrooms and managing learning** – for example: classroom management; behaviour management; planning for learning; catering for diverse learners.
- **learning about curriculum planning and development**. Literacy or Reading and Numeracy or Mathematics were specifically named, with Science and ICT also named.

Success was often a personal measure. Graduate teachers described success in broad terms ranging from mastery of skills or knowledge to aspects where they gained confidence in a curriculum area (mostly ICT and Mathematics) or in areas with which they may not have had very much experience previously (e.g. rebuilding a music curriculum). Some teachers described success as coping or surviving in difficult circumstances, for example, 'Thinking on my feet as a supply teacher' (Graduate Teacher, Round 4) and 'While working overseas as a preschool teacher (for which I am not qualified), I improved the learning environment & social skills of students' (Graduate Teacher, Round 4).

While the quantitative data highlighted areas such as classroom management, working with students from culturally and linguistically diverse backgrounds, and working with parents/care givers as areas where graduate teachers did not feel as well prepared, the free-text data regularly highlighted these as areas of success. For example, the successes listed among the responses from graduate teachers in Round 4 included:

- 'Working with students from different cultural backgrounds.'
- 'Understanding individual student needs and learning styles.'
- 'Through doing supply teaching my ability to manage classroom behaviour confidently has been a big area of learning and development for me.'
- 'I feel confident in my ability to manage sometimes very difficult behaviour problems.'

- 'I am professional, flexible and feel confident in my abilities.'
- 'My engagement with parents and the local community was one of the great pleasures of my teaching. I found that if you supported and cared for them, they were more than willing to care for you.'

Principals were invited to list two areas where they thought graduate teachers experienced success (in the Round 3 survey only). The three broad areas that emerged as strongest were: a sound knowledge of curriculum and pedagogy; building positive classroom, staff and community relationships; and, an understanding of professional ethics and conduct.

Many of the principals noted key qualities in graduates such as their willingness to learn and be a member of a team, their enthusiasm and energy, and sharing new ideas. In some cases principals noted that the graduates were assisting other teachers in their professional learning.

> Teachers are being trained well to be professional and valuable members of the profession. Much improved in comparison to a decade ago. (Principal, Round 3)

A sound knowledge of broad curriculum and pedagogy counted significantly in the first responses. In some cases ICT was specifically named as an area of strength and success. Again this was an area that principals identified that graduates were supporting other staff.

> Applications of IT in the class. Many good graduates are effective mentors for older staff. (Principal, Round 3)

Overwhelmingly, principals spoke about graduates as having a very sound knowledge of professional conduct and that they knew how to build positive learning relationships with their students. Principals also described graduates as knowing how to develop 'collegial' relationships and this was a significant area of graduate success with graduates ready to work in professional learning teams and across the school and community.

Future plans of graduate teachers

The principals who completed questions about individual graduate teachers in late 2012 were asked about their plans for recruiting and retaining graduate teachers for 2013. The table below shows plans for retaining graduate teachers.

Table 4.51: Plan to retain current graduate teachers for 2013

	Round 2		Round 3	
	n	%	n	%
Yes, all of them	114	51.4	181	77.4
Yes, some of them	80	36.0	41	17.5
No	22	9.9	1	0.4
Unsure	5	2.3	7	3.0
Not applicable	1	0.5	4	1.7
TOTAL	222	100.0	234	100.0

In Round 2 just over half of principals stated they planned to keep all of their graduate teachers in 2013 (51 per cent), and 36 per cent stated they planned to keep on some of them. In Round 3 this jumped to 77 per cent and 18 per cent. Ten per cent of Round 2 respondents and less than 1 per cent of Round 3 respondents stated they did not plan to retain their current graduates in 2013.

Table 4.52 shows the Round 2 principals' plans to recruit new graduate teachers in 2013. This question was not asked in Rounds 1 and 3.

Table 4.52: Plan to recruit new graduate teachers in 2013

	n	%
Yes	127	57.5
No	69	31.2
Unsure	25	11.3
TOTAL	226	100.0

Over half of principals (57 per cent) planned to recruit new graduate teachers in 2013. Thirty-one per cent did not plan to recruit new graduate teachers, and 11 per cent were unsure.

Summary of findings from the principal surveys:

1,001 responses were collected from principals (2012-2013); these were matched to 584 graduate teacher responses.

The school demographics show:
- 65 per cent were located in large cities;
- Less than one-third of the schools had ten or fewer teachers;
- Across the three survey rounds, 10 per cent or less had student enrolments of 50 or less and 21-36 per cent had enrolments of more than 700;
- 61 per cent of respondents' schools have between one and five per cent of their students identifying as Aboriginal or Torres Strait Islander;
- 69 per cent of respondents' schools reported that between 1 and 5 per cent of the student population had a disability;
- More than half the schools had less than 10 per cent of their students from a language background other than English; and
- Around one third of schools employed two to three first year graduates and one third employed two to three second year graduates.

Responses to survey questions about graduate teacher preparedness and effectiveness indicated that:
- Principals, in the main, agreed or strongly agreed that they liked to employ graduate teachers; across the survey rounds less than 5 per cent either strongly disagreed or disagreed that they like to employ graduate teachers;
- In general, principals tended to report higher agreement in relation to graduate teacher effectiveness than did the teachers; that is the principals perceived the

graduate teachers to be more effective than the graduate teachers thought themselves to be;

- The areas principals perceived graduates to be most effective in were 'Collegiality', 'Engaging in professional learning' and 'Professional ethics'. Levels of agreement were lower for 'Teaching culturally, linguistically and socio-economically diverse learners', and 'Classroom management';
- Principals' responses to open-ended questions indicated that: many see school as sites for graduate teachers' further professional learning; many view teacher education providers as responsible for teacher preparedness; and many attribute graduate teachers' preparedness for employment as a teacher to their personal qualities; and
- The majority of graduate teachers did not hold a leadership position.

When invited to comment on graduate teachers' influence on student learning, principal responses:

- Were, in 2012, less positive than those provided by graduate teachers; that is graduate teachers were more likely to perceive themselves as having a positive influence on student learning than were the principals.
- In 2013, comparisons of teacher and principal responses revealed higher mean scores provided by principals for each area of student learning.

Principals saw in-school experiences, in particular internships and extended placements, as features of teacher education programs that better prepare graduate teachers for their particular school contexts. Placements supported by an experienced teacher and by support on site from a university lecturer were identified as offering better preparation.

The majority of principals indicated that their school did not have difficulties attracting or retaining teachers. Responses from principals in many rural and remote locations went against this overall trend. The most common reason given by schools for difficulties retaining teachers was their location.

Classroom management and catering for diverse learners were identified by graduate teacher respondents as the most challenging aspects of teaching. Pedagogy, differentiation and workload were commonly identified by principals as additional challenges for new teachers.

Areas of graduate teacher success, as identified by principals, included having sound knowledge of curriculum and pedagogy; building positive classroom, staff and community relationships; and an understanding of professional ethics and conduct.

Principals made a variety of supports available to graduate teachers, of which 'ongoing professional development opportunities' was offered most consistently. Over 95 per cent offered induction programs and over 80 per cent formal mentoring programs - the area of professional learning that was available across the largest proportion of schools in the survey was 'Understanding, design and implementation of curriculum' with 93 per cent (Round 2, 2012). Graduate teachers identified the availability of induction programs and professional development opportunities less frequently than the principals.

The successful transition of graduate teachers into teaching was commonly attributed by principals to the in-school supports they made available. Difficult transitions were, in the

main, attributed to inadequacies of teacher education programs or to individual teachers' personal characteristics.

4.4 Longitudinal sample of graduate teachers

The longitudinal sample was defined by participation in at least Round 2, 3 and 4 of the graduate teacher survey. This collection was selected as it captured responses across three calendar years (2012, 2013 and 2014), was of appropriate size to enable the type and range of data analyses required to address the research questions, and provided a robust sample of the graduate teacher population under investigation. The longitudinal sample comprised 619 cases.

The first graduate teacher survey had the lowest response rate, rendering it vulnerable to exclusion from the longitudinal dataset. This noted, 47 per cent of the graduate teachers who made up the longitudinal dataset also completed the Round 1 survey and as such the demographic and teacher education program data they entered in Round 1 has informed development of the independent variables for these participants. For example, where available the name and location of the teacher education program and provider was derived from Round 1 data.

Unless otherwise specified, the analyses that follow including Round specific analysis drew on data from the longitudinal dataset. The descriptions of techniques, assumptions, and presentation of results relied heavily on Field (2013), Pallant (2011) and Tabachnick and Fidell (2007). This exploratory study did not utilise the Bonferroni method. The Bonferroni method is an adjustment concerned with statistical significance that can be made when more than one test is performed in analysing the same dataset (Perneger, 1998). It is designed to reduce type I error and involves setting a more stringent alpha level for comparisons to reduce the risk of finding a significant result which may in fact simply be the result of chance (Pallant, 2011). In reducing type I errors application of Bonferroni inflates type II errors, thus increasing the likelihood of missing important differences (Perneger, 1998). We were not concerned with hypothesis testing and were most interested in revealing associations, rather than hiding them. Consistent with Perneger (1998) and Rothman (1990) concerns about the use of multiple comparisons in an exploratory study were addressed by describing the tests of significance that were performed, and why.

4.4.1 Longitudinal dataset development

Development of the SETE datasets are detailed in Figure 4.11.

Figure 4.11: Development of the SETE survey datasets

Round 1 – Teacher Survey (Mar-May 2012)	**1,443 (9.8%)**	**Snapshot 1 2012** Teachers and Principals matched	**Teachers who completed surveys and their matched principals**
Round 1 – Principal Survey (Jun-Jul 2012)	**n = 448**		

Mapping of initial teacher education (ITE) programs added

Round 2 – Teacher Survey (Oct-Nov 2012)	**2,967 (20.3%)**	**Snapshot 2 2012** Teachers and Principals matched
Round 2 – Principal Survey (Nov-Dec 2012)	**n = 253**	

School characteristics added

Round 3 – Teacher Survey (Mar-Apr 2013)	**2,268 (16.3%)**	**Snapshot 3 2013** Teachers and Principals matched
Round 3 – Principal Survey (Apr-May 2013)	**n = 300**	

SETE Datasets

Teachers who completed surveys plus their matched Principals merged with ITE mapping and school characteristics

Round 4 – Teacher Survey (Mar-Apr 2014)	**1,782 (13.2%)**	**Snapshot 4 2014** Teachers and Principals matched

The longitudinal sample was comprised of 619 unique cases. Each of these graduate teachers completed the Rounds 2, 3 and 4 SETE Graduate Teacher Surveys (responses across three calendar years 2012, 2013 and 2014). Figure 4.12 illustrates the participation trends, revealing the number of return and unique respondents who participated in each round.

Figure 4.12: Participation in the Graduate Teacher Surveys

Longitudinal datasets (n=4,907: 33.2% of 2010/2011 cohort)	Round 1	Round 2	Round 3	Round 4	n
	Round 1	Round 2	Round 3	Round 4	n=288*
	Round 1	Round 2	Round 3		n=218
	Round 1	Round 2			n=268
	Round 1	Round 2		Round 4	n=72
	Round 1		Round 3	Round 4	n=65
	Round 1		Round 3		n=99
	Round 1			Round 4	n=58
		Round 2	Round 3	Round 4	n=331*
		Round 2		Round 4	n=223
		Round 2	Round 3		n=441
			Round 3	Round 4	n=218
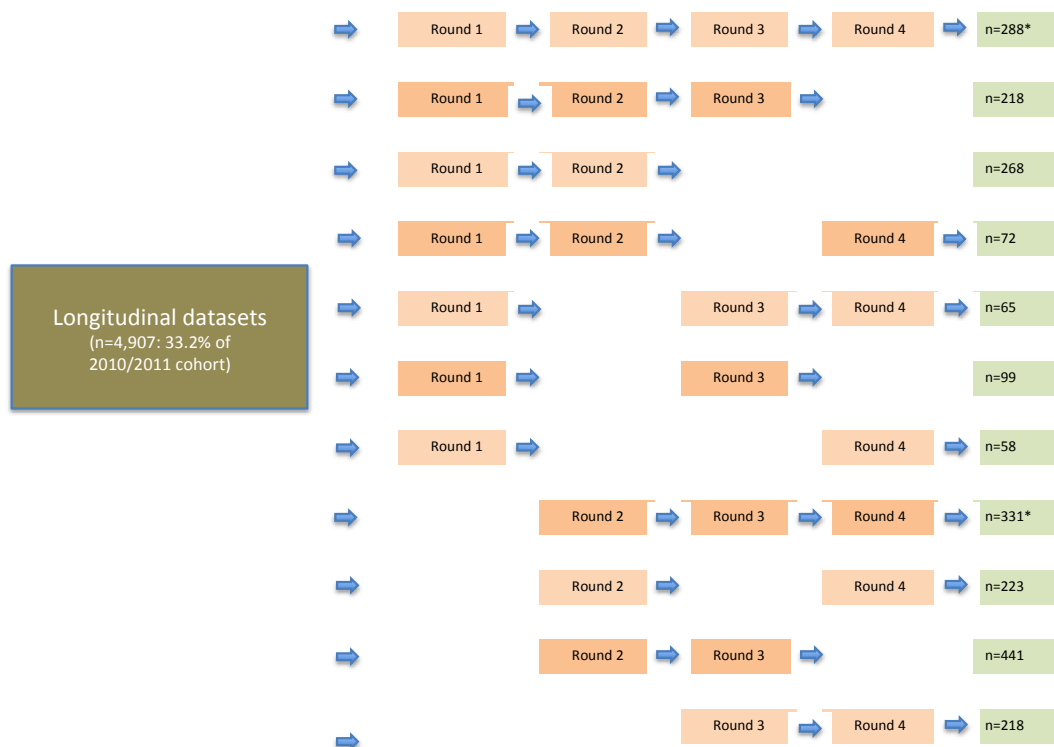
*These two samples were combined to form the longitudinal dataset.

4.4.2 Sample representativeness of the longitudinal sample

Graduate teacher demographics

The longitudinal graduate teacher demographics are displayed in Table 4.53. Respondent demographics are presented alongside the proportions for all respondents combined – in this later group each respondent is counted only once. For more information about representativeness of the SETE samples of graduate teachers, in terms of individual characteristics, refer to Section 4.2.1.

Table 4.53: Individual characteristics of graduate teachers

Teacher characteristics	Longitudinal sample		All respondents combined	
	n	%	n	%
Gender				
Male	147	23.7	1,089	22.2
Female	472	76.3	3,810	77.8
Age group at March 2012				
20-24	192	31.1	1,819	37.1
25-29	146	23.7	1,273	25.9
30-34	75	12.2	538	11.0
35-39	58	9.4	387	7.9
40-44	65	10.5	393	8.1
45-49	44	7.1	257	5.3
50+	37	6.0	199	4.1
Not stated	-	-	11	0.2
Aboriginal or Torres Strait Islander descent				
No	510	99.2	3,664	99.1
Yes	4	0.8	33	0.9
Tertiary qualification is first in family				
Yes	246	39.7	1,676	42.7
No	373	60.3	2,251	57.3
English as main language				
Yes, the only language	445	86.6	3,109	83.7
Yes, the main language	52	10.1	380	10.2
No, but spoken frequently	14	2.7	189	5.1
No, rarely or never used	3	0.6	36	1.0
TOTAL	619[2]	100.0	4,907[2]	100.0

The representation trends for the longitudinal and point-in-time samples were, on the whole consistent. Key differences between the longitudinal sample of graduate teachers and all respondents combined were that the longitudinal sample contained: a smaller proportion of respondents aged 20-24 and a greater proportion of those aged 25 and above; and a smaller proportion of respondents who were first in family to receive a tertiary qualification. Other differences included a slightly larger proportion of male respondents and a slightly higher proportion of respondents who speak only English.

Of the respondents in the longitudinal sample, 11 per cent had postgraduate qualifications in a field other than education, 6 per cent held a Graduate Diploma or certificate, 50 per cent held a Bachelor's degree and 18 per cent held either an advanced diploma, diploma or certificate level qualification in a field other than education. Fifteen per cent did not have qualifications in addition to their teaching qualification. Point-in-time collections revealed similar trends.

Figure 4.13: Highest qualification in fields other than education, longitudinal sample
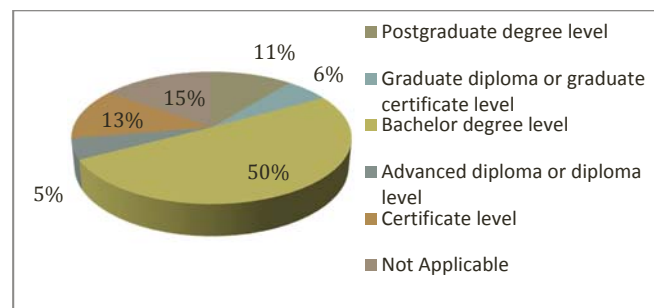
The graduate teachers with the highest proportion of additional qualifications were those in the secondary area of a teacher education program.

Half of the longitudinal sample of graduate teachers had previous industry experience, of whom ten per cent had previous experience in the Education sector and a further eight per cent experience in Health and Community Services. Eighty-five per cent of the longitudinal respondents were born in Australia.

Graduate teachers' school profile

In each survey round responses from graduate teachers working in schools were matched to school profile data. To give an indication of the spread of schools, the characteristics of the schools graduate teachers were working in when they responded to the March-April 2013 Survey (Round 3, 84 per cent employed as teachers, n = 1,852) are tabulated below. For comparison, this table also includes school profile data as relevant to the Round 2 respondents represented in the longitudinal dataset (86 per cent employed as teachers, n = 519).

Table 4.54: Graduate teachers' school profile

School characteristics	Round 2 longitudinal (%)	Round 3 point-in-time (%)
Employment type		
Full time permanent	31.4	38.8
Part time permanent	3.5	3.9
Full time contract	43.5	38.8
Part time contract	10	7
Casual	11.6	11.5
State (Qld and Vic only)		
Qld	37	38.4
Vic	63	61.6
School sector		
Government	67.9	67.2
Catholic	15.1	13.9
Independent	12	13.9
Other	5	5.1
School type		
Primary	41.2	43.8
Secondary	37.4	35.4
P-12	16.4	17.4
Special education	5	3.4
School location (MCEECDYA Remoteness Indicator, 2011)		
Major cities of Australia	65.8	65.8
Inner regional Australia	21.6	22.8
Outer regional Australia	9.7	8.4
Remote Australia	1.3	1.7
Very remote Australia	1.5	1.3
ICSEA (Government schools)		
National average and above	42.7	41.1

Below national average	57.3	58.9
Proportion of Aboriginal and/or Torres Strait islander students		
0%	19.8	19.7
1-5%	56.7	56.7
6-10%	11.9	12.9
More than 10%	11.6	10.7
Proportion of students with language backgrounds other than English		
0%	9.3	8.6
1-10%	47.1	47.8
11-20%	9.9	10
21-40%	15.7	16.2
More than 40%	18	17.3
Proportion of students with a disability		
0%	12.6	6.4
1-5%	73.8	72.6
6-10%	6.5	15.8
More than 10%	7	5.2

Note: Figures are rounded and may not add up to 100. Proportions are based on valid per cent.

Summary of the longitudinal sample of graduate teachers:

The longitudinal sample comprised 619 cases, each case representing a graduate teacher who had completed at least three of the Graduate Teacher Surveys. Where possible, principal responses were matched to the case, as were data about the teacher education program completed by the graduate teacher and information about the school/s in which they were employed as teachers.

When compared to the point-in-time samples the longitudinal sample contained: a smaller proportion of respondents aged 20-24 and a greater proportion of those aged 25 and above; and a smaller proportion of respondents who were first in family to receive a tertiary qualification. The samples were similar in all other areas.

4.4.3 General findings from the longitudinal analyses

Perceptions of graduate teachers' preparedness and effectiveness

The perceptions of preparedness and effectiveness sub-scale means are provided in Table 4.55. The mean score for preparedness, across the three survey rounds included in the longitudinal sample, was positively skewed – that is, on the whole responses tended toward agreement that teacher education prepared graduate teachers for teaching rather than disagreement. The positive skew was also evident in each individual round. See Appendix 5 for comparison of the point-in-time and longitudinal means.

Table 4.55: Perceptions of preparedness and effectiveness sub-scale means, longitudinal sample

	Longitudinal Round 2 mean	Longitudinal Round 3 mean	Longitudinal Round 4 mean
My teacher education program prepared me in the following area…			
Teaching culturally, linguistically and socio-economically diverse learners	3.3	3.4	3.2
Design and implementation of curriculum	3.5	3.5	3.4
Assessment and the provision of feedback and reporting on student learning	3.3	3.4	3.2
Pedagogy	3.9	3.9	3.9
Classroom management	3.1	3.2	3.0
Professional engagement with parents/carers and the community	2.9	2.9	2.9
Collegiality	3.3	3.4	3.3
Professional ethics	3.9	3.9	3.9
Engagement with ongoing professional learning	3.7	3.7	3.6

	Longitudinal Round 2 mean	Longitudinal Round 3 mean	Longitudinal Round 4 mean
I am effective in this area now…			
Teaching culturally, linguistically and socio-economically diverse learners	3.9	3.9	4.0
Design and implementation of curriculum	4.0	4.1	4.2
Assessment and the provision of feedback and reporting on student learning	4.0	4.1	4.2
Pedagogy	4.0	4.0	4.1
Classroom management	4.1	4.1	4.2
Professional engagement with parents/carers and the community	4.1	4.2	4.2
Collegiality	4.2	4.2	4.3
Professional ethics	4.4	4.4	4.5
Engagement with ongoing professional learning	4.3	4.3	4.4

Graduate teachers reported being least prepared in the areas of 'Classroom management' and 'Professional engagement with parents/carers and the community'. They perceived themselves to be most prepared in 'Pedagogy' and 'Professional ethics'. They reported being most effective in 'Professional ethics' and 'Engagement with on-going professional learning' and least effective in 'Teaching culturally, linguistically and socio-economically diverse learners'.

Teacher characteristics and perceptions of preparedness and effectiveness

Perceptions of preparedness and effectiveness were considered in relation to teachers' personal characteristics. Respondents' gender, languages spoken, and previous industry experience were found to have a weak association with perceptions of preparedness (refer to Appendix 6 for an overview of the analyses conducted).

Results of analyses of perception of preparedness and perceptions of effectiveness by gender for the longitudinal sample are reported in Appendix 7. The trends evident in the point-in-time analyses occurred in the longitudinal datasets; that is, females were found to report being more prepared (and effective) than males.

Program characteristics and perceptions of preparedness and effectiveness

Perceptions of preparedness and effectiveness were also considered in relation to the characteristics of the teacher education programs graduate teachers completed. The influence of practicum structure was considered. The longitudinal analyses found:

- Block practicum
    - No differences of note were found regarding perceptions of preparedness and effectiveness on the basis of completion of a block practicum.
- Distributed practicum
    - There was higher than expected representation of those who completed a distributed practicum in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness, but these differences were not statistically significant[3].
- Completion of an internship
    - Of the teachers represented in the longitudinal sample, 24 per cent completed internships, of which 5 per cent were 2-3 weeks duration, 73 per cent 4-6 weeks, 9 per cent 7-9 weeks, 11 per cent 10-12 weeks, and 2 per cent 13-15 weeks duration. General supervision, as for graduate teachers, was available to 52 per cent of the respondents and 41 per cent had constant supervision by a mentor teacher. There was higher than expected representation of those who completed an internship in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness.

Perceptions of student learning and perceptions of preparedness and effectiveness

Pearson's product-moment correlation coefficient was used to examine the association between graduate teachers' self-report of their preparedness, effectiveness, and influence on student learning. All combinations of the variables were considered. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity.

The procedure was first used with the Round 2 point-in-time dataset (n=2,336), and then for confirmatory purposes, with the Round 3 longitudinal data.

Positive relationships were identified between:

- perceptions of preparedness and perceptions of influence on student learning
- perceptions of effectiveness and perceptions of influence on student learning

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[3] The three rounds of data that make up the longitudinal dataset include information about graduate teachers' perceptions of their preparedness for teaching. Graduate teachers who were teaching when each of the surveys was administered were given a score for each round that was then totalled for this analysis. The total scores were ranked and the sample divided into quartiles. The characteristics of those who make up the top (or upper) 25 per cent in terms of self-reported preparedness, are compared to the characteristics of the graduate teachers that make up the bottom (or lower) 25 per cent of the sample. The same process is used to examine perceptions of preparedness and perceptions of student outcomes. When considering the characteristics of the graduate teachers that make up the top and bottom groupings for each area, it is important to remember that these teachers have been teaching from October 2012 to April 2014. There are many other respondents who have not been employed at one or more of the collection periods and are therefore not reflected in the analyses.

- perceptions of effectiveness and recommendation of program to others
- perceptions of preparedness and recommendation of program to others
- perceptions of preparedness and perceptions of effectiveness

The strengths of the relationships are detailed in Appendix 8.

Results of the correlation analysis for the preparedness and effectiveness scales and for influence on student learning show all items are related, with strength in one associated with strength in others. All items examined were correlated at the $p = .01$ level.

Standard multiple regression was used to explore how much of the variance in graduate teachers' self-reported influence on student learning could be predicted by looking at their scores on the items that make up the SETE effectiveness scale (Round 2, point-in-time). The model explains 24.6 per cent of variance in teachers' influence on student learning (r square $= .246$, $p < .0001$). Beta values above .1 were found for 'Classroom management' (beta $= .145$, $p < .0001$), 'Professional engagement with parents and the community' (beta $= .128$, $p < .0001$), and 'Pedagogy' (beta $= .104$, $p < .0001$). A further four variables were also significant: 'Design and implementation of curriculum', 'Assessment and the provision of feedback', 'Teaching culturally, linguistically and socio-economically diverse learners', and 'Engagement with ongoing professional learning'. 'Classroom management' has the highest part correlation coefficient but accounts for only 1.4 per cent of the unique variance in recommendation of teacher education programs.

Transition into teaching

The figure below depicts changes in employment as a teacher, over time.

Figure 4.14: Graduate teacher employment 2012-2014, longitudinal sample
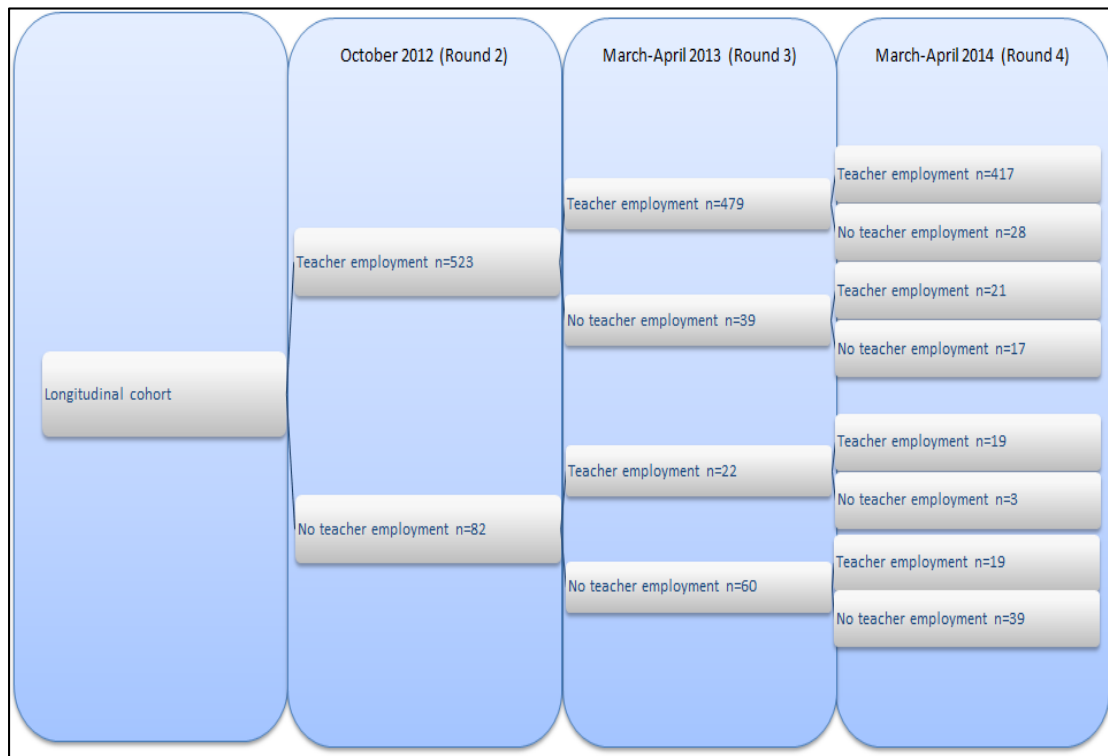
Of the graduate teachers represented in the longitudinal sample and employed in October 2012, approximately 82 per cent were working as teachers in March-April 2014. Of the graduate teachers not employed as teachers in October 2012, only 46 per cent held a teaching position in March-April 2014.

Of the respondents employed as a teacher in October 2012, approximately 69 per cent were employed at the same school six months later and, 53 per cent were employed at the same school in March-April 2014. Fifteen per cent of graduate teachers employed in October 2012 moved to a new school six months later and seven per cent were not employed as teachers. These figures are approximate as some respondents opted not to provide complete data about their employment pathways. More graduate teachers than expected who were employed at the same school across at least two rounds were represented in the top 25 per cent for effectiveness.

Analysis of graduate teacher employment, over time, revealed:

- Graduates of Master's programs were less likely to be employed on a casual basis.
- Graduates of Bachelor's programs were more likely to be full time permanent.
- Graduates of Graduate Diplomas were less likely to be full time permanent and more likely to be part time permanent, casual, full time contract or working with a part time contract.

Future plans of graduate teachers

Graduate teachers were invited to indicate their employment intentions in three years' time. Some trends in responses from the longitudinal sample were noted. These were not statistically significant.

- As the years of experience increase the graduates were more likely to see themselves continuing as teachers and more likely to see themselves in a leadership position in a school.
- A majority of respondents saw themselves teaching in a school.
- Females were more likely to see themselves teaching in three years' time.
- Males were more likely to see themselves in leadership positions.
- Not many respondents saw themselves working in alternative settings.
- Graduates of Bachelor's degree programs were more likely to see themselves working as a teacher in a school and less likely to see themselves in an education policy, research or project position.
- Graduates of teacher education programs at the Graduate Diploma level were less likely to see themselves as a teacher and more likely than expected to see themselves in an education policy, research or project position.

Summary of general findings from the longitudinal analyses:

Consistent with point-in-time findings, exploration of perceptions of preparedness and effectiveness in the longitudinal sample revealed a positive skew. Graduate teachers reported being:

- least prepared in the areas of classroom management and professional engagement with parents/carers and the community.
- most prepared in pedagogy and professional ethics.
- least effective in teaching culturally, linguistically and socio-economically diverse learners.
- most effective in professional ethics and engagement with on-going professional learning.

Overall, respondents' gender, languages spoken, and previous industry experience were found to have a weak association with perceptions of preparedness. As with the point-in-time analyses, females reported being more prepared and effective than males.

Consideration of mean scores for perceptions of preparedness and effectiveness in relation to the characteristics of the teacher education programs graduate teachers completed found:

- Amongst respondents who perceived themselves as most prepared, a greater proportion than expected had completed a distributed practicum. However, completion of a distributed practicum was under-represented amongst those who perceived themselves to be most effective. These differences were not statistically significant.
- There was higher than expected representation of those who completed an internship in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness.

Analysis of graduate teacher employment, over time, revealed:

- Graduates of Master's programs were less likely to be employed on a casual basis.
- Graduates of Bachelor's programs were more likely to be full time permanent.
- Graduates of Graduate Diplomas were less likely to be full time permanent and more likely to be part time permanent, casual, full time contract or working with a part time contract.

A majority of respondents in the longitudinal sample saw themselves teaching in a school in three years' time.

4.5 Summary of key survey findings

4.5.1 How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

Graduate teachers' perceptions of their own preparedness were analysed in association with the characteristics of the schools in which they were employed. A scale was created to measure preparation for teaching and enable investigation of relationships that may exist between school contexts and scores on the scale. Similar scales were developed to measure perceptions of effectiveness and student outcomes.

Overall, graduate teachers reported being prepared for the school contexts in which they were working. The mean score for preparedness, across the three survey rounds included in the longitudinal sample, was positively skewed; that is, there was a tendency for responses to reflect agreement rather than disagreement with statements about key areas of teaching. The positive skew was also evident in each individual round. The same trend was identified for perceptions of effectiveness, with perceptions of effectiveness scores consistently higher than graduate teachers' perception of preparedness scores.

Teachers' personal characteristics, school and teacher education program characteristics, as measured in the surveys and defined in the SETE Technical Report (Mayer, Allard, Bates, Dixon, Doecke, Hodder, Kline, Kostogriz, Rowan, Walker-Gibbs & White, 2014), account for little of the variance in overall perceptions of preparedness. Attempts to isolate the variables that have an impact on preparedness for particular settings yielded a variety of statistically significant results, depending on the analyses conducted, though in general the effect size for the individual and group variables was small. Independent variables associated with perceptions of effectiveness were more readily identified, though again the effect size was generally small.

Key findings include:

- Exploration of the relationship between perceptions of preparedness and selected teacher characteristics, school characteristics and perceptions of preparedness and program characteristics using standard multiple regression did not reveal characteristics that could account for significant amounts of variance in preparedness. However, these analyses suggest that graduate teachers' gender (male, female), prior industry experience (yes, no), language spoken at home (English only, languages other than English), and proportion of Aboriginal or Torres Strait Islander students enrolled in the schools graduate teachers work in have a statistically significant association with perceptions of preparedness. The effect size and the magnitude in the differences in the means are generally small to very small. Being female, speaking a language other than English and having previous industry experience were associated with higher scores for perceptions of preparedness (Round 2, longitudinal data).
- In Round 2, there was a statistically significant difference for perceptions of preparedness associated with school location (based on the MCEECDYA Remoteness Indicator), with graduate teachers working in remote and very remote schools reporting the lowest means for preparedness and those working in major cities and outer regional locations reporting a higher mean score.

- There was a significant difference in the perceptions of preparedness and effectiveness scores between males and females, with females consistently reporting higher scores for both scales. This trend also applied to recommendation of program and perceptions of student outcomes.
- Languages spoken at home emerged in some rounds as having an association with perceptions of preparedness and effectiveness; graduate teachers who spoke languages other than English at home had higher preparedness scores (Round 2) and lower effectiveness scores (Round 3 and 4).
- A higher than expected number of respondents in the longitudinal sample who spoke languages other than English at home were represented in the top 25 per cent for preparedness and a lower than expected number of respondents who spoke languages other than English at home were represented in the top 25 per cent for effectiveness. This trend was not statistically significant.
- In Round 2, respondents in the longitudinal sample employed in government schools had lower mean scores for recommendation of program to others than their colleagues employed in non-government schools.
- More graduates than expected who were employed at the same school across at least two rounds were represented in the top 25 per cent for effectiveness and less than expected in the bottom 25 per cent[4].

The relationship between graduate teacher preparedness and effectiveness, and student learning outcomes was also investigated. Models were developed to explore associations between graduate teachers' perceptions of student outcomes, the teacher education programs completed, and the characteristics of the schools the teachers worked in. Correlation analysis for the preparedness and effectiveness scales, and for recommendation of program to others and influence on student learning (or the student outcomes scale in Round 3 and Round 4), suggest that all items are related, with strength in one area of teaching associated with strength in others. All items examined were correlated at the $p \leq .01$ level of significance.

Standard multiple regression found that 24.6 per cent of variance in teachers' influence on student learning could be predicted by looking at graduate teachers' scores on the items that made up the SETE effectiveness scale (Round 2, point-in-time data). (r square = .246, $p < .001$). Beta values above .1 were found for 'Classroom management', 'Professional engagement with parents and the community', and 'Pedagogy'. The greatest per cent of unique variance in recommendation of teacher education program was found for 'Classroom management' (1.4 per cent).

When the graduate teachers with the highest and lowest scores for perceptions of student outcomes *over time* were compared, a number of patterns emerged. Although these results were interesting, they were not statistically significant:

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[4] Chi square tests for independence (with Yates Continuity Correction) examined the relationship between graduate teachers in the top and bottom 25 per cent for effectiveness and teachers' school mobility. The relationship between the top and bottom 25 per cent for effectiveness and school mobility from Round 2 to 3 was significant (x^2(1, n=168) = 10.67, p= .001, phi = .269). The relationship between the top and bottom 25 per cent for effectiveness and school mobility from Round 3 to 4 was near significant (x^2(1, n=165) = 3.04, p= .081, phi = .152).

- The difference between the top and bottom 25 per cent for those who completed a distributed practicum was significant. Those who completed a distributed practicum were less likely to be represented as highly as expected in the top 25 per cent and were more represented than expected in the bottom 25 per cent for student outcomes.
- A lower than expected number of respondents who spoke languages other than English at home were represented in the top 25 per cent for student outcomes.
- A slightly higher than expected number of female respondents were represented in the top 25 per cent for student outcomes.
- A higher than expected number of respondents who were born in countries other than Australia were represented in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness.

In Round 4, respondents in the longitudinal sample who had completed a distributed practicum reported a statistically significant lower mean score for student outcomes than peers who did not complete a distributed practicum.

4.5.2 What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of school settings?

Key characteristics of teacher education programs were identified through a national mapping of teacher education programs. All programs accredited by registry authorities were considered. Additional program characteristics were provided by graduate teachers who completed the surveys. Associations between these characteristics of teacher education and teachers' preparedness and effectiveness in diverse school contexts were considered.

Findings include:

- The relationship between effectiveness and employment type in Rounds 2, 3 and 4 was significant. Graduate teachers with permanent full time positions were consistently more highly represented than expected in the top 25 per cent for perceptions of effectiveness and less represented in the bottom 25 per cent. The reverse was true of graduate teachers with casual employment and part time contracts. The results for graduate teachers with full time contract positions varied between rounds.
- There was a higher than expected representation of those who completed a distributed practicum in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness, but these differences were not statistically significant.
- In Round 2 there were slightly more graduate teachers than expected working in single-gender schools in the top 25 per cent for effectiveness, and in Rounds 2 and 3 less graduate teachers than expected working in inner regional Australia in the top 25 per cent for effectiveness. These differences were not statistically significant.
- Respondents who were the first in their family to complete a tertiary qualification were represented less than expected in the top 25 per cent for preparedness and more than expected in the bottom 25 per cent. For effectiveness, they were more

highly represented in the top 25 per cent and less than expected in the bottom 25 per cent. These differences were not statistically significant.

- Graduate teachers who completed their programs on an outer-metro campus or off campus had higher than expected representation in the bottom 25 per cent and lower than expected in the top 25 per cent for preparedness. Those who completed on a metropolitan campus were more highly represented than expected in the top 25 per cent. These differences were not statistically significant.

- There was higher than expected representation of those who completed an internship in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness. These differences were not statistically significant.

- There was no significant interaction between teacher education program type (Master's, Bachelor's or Graduate Diplomas), mode of study (full time, part time or combination of both) or campus location (metropolitan, outer-metropolitan, regional, off-campus) and *time* for perceptions of preparedness.

- There are statistically significant changes in effectiveness scores for each time point and the main effect for program type is significant – graduates with Master's and Bachelor's qualifications perceive themselves as more effective than those with Graduate Diploma qualifications. The effect size for program type is small.

- In the top 25 per cent for effectiveness (Round 2, 3 and 4 combined) there was a nearly significant higher than expected representation of graduate teachers who completed Master's and Bachelor's level teacher education programs. Graduates of Graduate Diplomas were over represented in the bottom 25 per cent.

- Investigation of the impact of mode of study and campus location, in combination with time, on effectiveness scores revealed that there was no significant interaction between the program characteristics and time, but there was a substantial main effect for time. Effectiveness scores increased slightly in each round.

- Outer metropolitan and off campus completion of teacher education was much higher than expected in the bottom 25 per cent for effectiveness. This difference is not statistically significant.

- 22.1 per cent of the variance in recommendation of program, which could be considered a proxy for program satisfaction, was associated with the SETE preparedness sub-scales (Round 2, point-in-time). The independent variables with the largest Beta values are 'Classroom management', 'Design and implementation of curriculum', 'Teaching culturally, linguistically and socio-economically diverse learners', and 'Engagement with ongoing professional learning'.

4.5.3 How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

Analysis of graduate teacher employment, over time, revealed:

- Graduates of Master's programs were less likely to be employed on a casual basis.
- Graduates of Bachelor's programs were more likely to be full time permanent.

- Graduates of Graduate Diplomas were less likely to be full time permanent and more likely to be part time permanent, casual, full time contract or working with a part time contract.

- In Rounds 2 and 3, the greater the time since graduate teachers started teaching, the more likely they were to have a full time or part time permanent position and the less likely they were to be employed on a casual basis. Those who started teaching in 2012 were more likely to be employed on a contract than those who started in 2010 or 2011.

- While not statistically significant, males were more likely to be employed in full time permanent positions and females were more likely to be employed in part time contract positions.

- Of the graduate teachers employed in October 2012, approximately 82 per cent were working as teachers in March-April 2014. Of the graduate teachers not employed as teachers in October 2012, only 46 per cent held a teaching position in March-April 2014.

- Of the respondents employed as a teacher in October 2012, approximately 69 per cent were employed at the same school six months later and, 53 per cent were employed at the same school in March-April 2014. Fifteen per cent of graduate teachers employed in October 2012 moved to a new school six months later and seven per cent were not employed as teachers. These figures are approximate as some respondents opted not to provide complete data about their employment pathways.

Graduate teachers were also invited to indicate their employment intentions in three years' time. Some trends in responses were noted. These were not statistically significant.

- As the years of experience increased the graduates were more likely to see themselves continuing as teachers and more likely to see themselves in a leadership position in a school.

- A majority of respondents saw themselves teaching in a school.

- Females were more likely to see themselves teaching in three years' time.

- Males were more likely to see themselves in leadership positions.

- Not many respondents saw themselves working in alternative settings.

- Graduates of Bachelor's degree programs were more likely to see themselves working as a teacher in a school and less likely to see themselves in an education policy, research or project position.

- Graduates of teacher education programs at the Graduate Diploma level were less likely to see themselves as a teacher and more likely than expected to see themselves in an education policy, research or project position.

Chi-square test for independence (with Yates Continuity Correction) indicated a significant association between industry experience and gender – males were more likely to enter teacher education programs with industry experience than were females.

Please note, in most instances the effect size of the associations identified through the quantitative analyses is small.

4.6 Case studies

4.6.1 Overview

In the SETE Project, the case studies comprised a separate and complementary aspect of the research. Specifically, the case studies of 197 graduate teachers in 29 schools, selected in the two states on the basis of size, geographical location, socio-economic, and linguistic diversity and across primary, secondary and P-12 groupings, aimed to not only 'flesh out' the responses to the large scale surveys, but to provide guidance and insights that could inform and shape the surveys that followed each round of interviews. So, key issues that emerged from dialogues with graduate teachers in the first and second interviews, for example, helped to inform the questions that were then included in the next round of surveys. Methodologically, then, the case studies were a key factor in generating relevant data to address the three main research questions. This is examined further in Section 5 of this report.

The case studies were always intended to be far more than a snapshot of the individual experiences of a sample of graduate teachers. The case was the school. The case studies each provided a close up examination, from the points of view of principals as well as the early career teachers, of a specific school context.

Importantly, because the case studies were longitudinal, with some participants interviewed up to five times over the four years of the project, the case studies offer a rich and detailed look at a dimension suggested but not elaborated on, in the survey data: how the professional lives of these early career teachers developed and changed over the first few years of working in the profession and in specific contexts. The changes that occurred in skill levels, professional knowledge, self-confidence and in what it means to become a/n (experienced) teacher are detailed via the perceptions of the teachers, the principals, and the researchers themselves as they analysed the interviews. The exploration of changes in professional identities of new teachers working in different contexts, tracked over the course of the four years, is a unique and significant dimension of the case studies.

The SETE project employed a recursive strategy whereby interview questions were informed by the surveys and vice-versa. Specifically, initial analysis of the case study data collected in 2011 helped to identify themes for further exploration via the large-scale survey instrument which was trialled in late 2011 and rolled-out state-wide in early 2012. Analysis of the second year case study data informed refinement of the survey instruments going forward. Subsequent findings from the surveys could be unpacked during the case study components of the research.

4.6.2 The case study researchers, participants and processes

The researchers

Nine of the Chief Investigators (CI) in the SETE project interviewed early career teachers and school leaders in the selected schools over the course of the four years of the project. Each CI took responsibility for visiting the same school(s) at regular intervals over the duration of the research. Such repeated visits by the same researchers helped to develop deeper understandings and better relationships regarding the specific context, where the researcher

could build on previous interactions and responses during subsequent visits. In turn, repeated visits by the same researcher(s) deepened knowledge of the changing factors in the professional (and often the personal) lives of the early career teachers. In interviewing at the same schools, most of the researchers paired up as means to share and check their observations, reflect together on the process and progress of the interviews, and provoke dialogue with each other concerning possible interpretations of the interview data.

The participants

Initial approaches to schools that fit the SETE case study selection criteria (geographical location, size, SES and socio-cultural make up of students, type of school), took place through the principal, where the project's aims and processes were explained and cooperation was sought for appropriate (i.e., graduates from 2011 or 2012) early career teachers to participate in the case study. In most instances, the principal, or their designated nominee, replied to the SETE Research Assistant with their agreement to be interviewed and with names of early career teachers who were potential participants. The teachers then were either contacted directly by the researcher(s) and invited to be part of the project, or were asked to nominate themselves as a participant by the principal/nominee. At the first interview, participants were provided with a written statement detailing the aims and purposes of the project and what would be involved if they chose to participate, and an Informed Consent to be signed when/if they volunteered. Issues of confidentiality and anonymity were explained and discussed. Additionally, a written form, with the participant's email address, date and place of graduation, qualifications (including discipline areas for those who taught at the secondary level) and what subjects and levels they were currently teaching, was completed. This form provided the requisite base-line information concerning individual participants and enabled direct contact between researcher and early career teacher to occur to set up subsequent interviews.

The early career teachers

Thus, the 197 early career teachers who participated in the case studies were a self-selecting group: that is, they volunteered, knowing what would be involved. This is not a representative group of all those early career teachers who graduated in 2011 or 2012, but rather all those who had taken up their first teaching positions in case study schools in the early stages of the project and who were prepared to be interviewed. As such, they might be understood as a highly motivated sample, perhaps exceptional in their professional commitment to research and to furthering understandings of new teachers' experiences.

While there were a few new participants who joined during the second round of interviews, for the most part, the numbers of participants decreased over the duration of the project because some of the participating teachers who were initially on contract didn't have these renewed, or teachers left jobs at the selected case study school and moved interstate. With some individuals, it was possible to re-establish contact. In one instance, the school itself closed and neither of the participating teachers could be contacted. The vast majority of the 197 teachers were interviewed at least three times, and almost half were interviewed at least four times (see Appendix 1). The interviews have therefore generated an unprecedented body of data regarding the experiences of early career teachers' in two states in Australia.

School Leaders

Interviews with senior administrators, in most cases principals or deputy principals, occurred up to three times per site over the longitudinal study. This was contingent, of course, on the availability of the school leaders, who were very generous with their time and insights. The

chance for researchers to speak with senior administrators added depth and personal perspectives to the written responses completed anonymously by principals in the large-scale surveys. Additionally, in the first year of the study, in a number of cases, interviews with senior teachers involved in school-based mentoring and/or supervising early career teachers were often undertaken. These interviews provided an added dimension to understanding the context and culture of the specific case study.

Interview structure

Interviews with graduate teachers were often an hour in duration, and the number of participants in any one interview group could vary widely, depending on who was available on the particular day, who was away on camps, excursions or ill, and who was still working at the school that particular year. In the first round of interviews, in schools with high numbers of early career teachers, sometimes the interview group was as large as 12; in later interviews, whenever possible, and in order to explore perceptions and experiences in more detail, the preferred size was either pairs or trios; sometimes single individuals spoke with the researcher(s).

Interview questions

Questions for case study participants were determined by the research team following analysis of all data collections on-hand. Themes identified in the surveys were examined and extended through the case studies.

The interview questions explored various aspects of teaching:

Initial visit
- Students and contexts
- Teacher practice
- Teacher knowledge

Subsequent visits
- Students and contexts
- Efficacy
- Lived experiences
- Teacher preparation
- Popular culture and images of teachers
- Teacher practice - artefact analysis
- Career trajectory

At each interview, questions were asked to elicit reflections on each teacher's teacher education program and overall views on education. As this was a longitudinal study, researchers provoked discussion about topics that had arisen in previous interviews and endeavoured to generate a rich picture of the lived experiences of the graduate teachers, as well as the educational settings they were working within.

In the main, the principal interviews were less frequent and briefer than interviews with graduate teachers. As a consequence, after establishing a picture of the school culture and context, there was a stronger and narrower emphasis on their perceptions of graduate teachers' preparedness and effectiveness across the previously identified key areas of teaching. This leadership group was also asked for their views on teacher education, in particular in relation to the new teachers.

Over the course of developing the interview protocols, along with the types of questions and topics to be covered, a number of stimuli were used as a means to generate different kinds of responses from the participants. For example, in the second year of the case studies, participants were provided with a range of media headlines that had been in the news over the previous six months, all of which concerned the status of teachers and/or national curriculum development. The participants were asked to comment on the significance (or lack of) these national stories in relation to their lived experiences of teaching in their particular schools. The purpose in using this was not to check or compare the veracity of the responses, but to consider how the personal and professional dimensions of their lives were/not impacted by the larger events within education. Did such mainstream critiques impact on their individual sense of effectiveness, for example? During another round of interviews, participants were invited to bring to the discussion an example of their own planning and teaching and to share and discuss how they felt about the lesson, with the researchers and their peers. These stimuli were intended as means to explore aspects of 'preparedness' and 'effectiveness' in less direct ways than straight-forward questions, alone.

Comments made by participants in response to open ended questions ('Is there anything else you'd like say before we finish?') often suggested that the actual process of participating in the research was itself a form of professional learning for many of them, providing an opportunity to reflect with informed outsiders as well as their peers, not only in response to the research probes but also more generally about what was on their minds. This meant that for a number of the participants, the research provided unique opportunities to develop their own reflexivity, opportunities that seemed all too rare for the time-poor graduate teacher whose day is regulated by highly demanding schedules. A number of participants mentioned that the interviews per se provided them with the means to speak their way into better, clearer understandings regarding what was occurring in their professional lives. That is, the act of telling the researchers about an event, for example, helped them make sense of it. For a number of the participants, the chance to share these stories with their peers in a confidential setting was also viewed as very worthwhile.

In keeping with standard interview protocols, the interview transcript of the specific interview was provided to each of the participants before subsequent interviews and each teacher was asked to amend the transcript as they saw fit. Almost without exception, the transcripts remained unchanged by participants. Occasionally, clarification about confidentiality issues was sought (e.g., who would see the interview transcripts), and the researchers provided clarification.

4.6.3 Cross-case study analyses

Elsewhere (Rowan, et al., 2015), and in this report, the way in which teacher education is differently constructed and understood via the policy characteristics ('the conceived space'), by teacher education program designers and lecturers ('the perceived space') and by early career teachers ('the lived space'), has been discussed. From the responses of the 197 early career teachers, it is possible to examine how each of these three different ways of understanding teacher education, and the respective notions of 'preparedness' and 'effectiveness', were made sense of by the case study participants.

However, in examining the transcripts from the interviews, these three 'spaces' are better understood as overlapping and embodied through the examples and stories that the teachers chose to tell the researchers, both in response to specific questions, and in the dialogue that they generated amongst themselves and with the researchers. Thus, for example, all

participants were asked questions concerning their own skills in curriculum planning, or assessment and reporting, several times over the different interviews. Analysis of the answers to such questions provide information about:

1) the extent that the graduates recognize these as important features of teachers' work and of the Professional Standards for Graduate Teachers which they were registered as knowing and being able to do (i.e., the conceived space of teacher education);
2) the extent to which they felt their own teacher education program had prepared them to be able to do this work (the perceived space); and
3) the way they could/not implement these skills in their daily interactions with students (the lived space).

A systematic thematic analysis was carried out by the research team in two stages. Each CI analysed their developing school case data. A cross case analysis was then carried out to determine themes and recognisable patterns related to each of the research questions. These analyses are presented in this report in the following categories:

Perceptions of Preparedness

Perceptions of Effectiveness

The importance of employment practices, school context and culture

The political context

Changing sense of professional identity

The community context

Each category involves multiple layers. These are initially presented in a table and then each is explained in detail. Finally, this chapter offers a reading across these categories.

Perceptions of Preparedness

Summary of themes
1. Teacher education provides knowledge and skills.
2. Practicum experiences in schools are more important than the coursework components of teacher education.
3. Perceptions of preparedness are mediated by the context.
4. Graduate teachers are un- and under-prepared for classroom management, student conflict or relationships with parents.
5. Planning and preparation for classes is challenging because it is time consuming.
6. Teaching for diversity is about catering for diverse learning styles.
7. Teaching requires a longer preparation time, including in schools as part of teacher education.

In the qualitative analysis, graduate teachers' reflections on how well they were prepared for practice differed and depended on the program they completed. The diversity of their teacher education pathways and programs are reflected in their perceptions of preparedness. Their perceptions were situated within the geo-socio-political context of particular schools and the issues they were grappling with at the time of the interviews.

1. **Teacher education provides knowledge and skills**
   Most of the early career teachers felt as prepared as they could be by their teacher education program. They viewed teacher education as providing foundational knowledge and skills upon which ongoing learning of teaching in context continues. The participating teachers often readily acknowledged that teacher education programs couldn't prepare beginning teachers for the diversity of all school settings. However, they reported feeling better prepared if they had a practicum in or extended exposure to a similar type of school setting as the one in which they were employed.

2. **Practicum experiences in schools are more important than the coursework components of teacher education**
   While graduate teachers identified some teacher education coursework as useful (e.g., developing content knowledge, planning and curriculum development, understanding learning theories, child/ adolescent growth and development), they identified their professional experiences in schools as particularly helpful, especially internships or extended periods in schools where they could 'take over the classroom'. Graduate teachers regularly called for more time in schools.

3. **Perceptions of preparedness are mediated by the context**
   Relevant contextual issues include the level of support for the new teachers, shared educational philosophies and the particular issues that present. Some early career teachers commented that there were discrepancies between the goals of professional learning in their teacher education program and the demands of everyday life in schools, particularly in the first year or two of their teaching. Where these discrepancies were greater, graduate teachers' sense of preparedness was lesser. Graduates in schools where there were solid support structures, where there was synergy between the graduate's educational philosophy, their teacher education program and that of their school, were more likely to comment that they were well prepared by their teacher education program.

4. **Graduate teachers are un- and under-prepared for classroom management, student conflict or relationships with parents**
   Many graduate teachers identified their preparation for classroom management as lacking and a particular practice challenge in their early years of teaching. Reporting to and dealing with parents was another common challenge. That said, it was often acknowledged that these were areas of teaching that could only be learned 'on the job'. Where the teachers did feel prepared, this was often because they had engaged in simulated and practical activities during their teacher education.

   Over the data collection period, and even within the two interviews in the first year of the research, teachers reported developing improved classroom management strategies and stronger relationships with parents and the broader school community. Changes in their skill levels and confidence could occur quite quickly, especially in settings where there were strong support systems in place.

Many graduate teachers indicated that in their particular schools, as beginning teachers, they were under-supported in their attempts to take full responsibility for their students' learning (including behaviour and attendance). For many of the participants, especially in their first year, the level of responsibility was at times overwhelming when not coupled with adequate support. A similar trend was noted in the free-text survey responses to questions about the challenges faced by graduate teachers.

5. **Planning and preparation for classes is challenging because it is time consuming**
The challenge of planning and preparation for classes is not because graduate teachers don't know how to do it. First year teachers were not prepared for the workload associated with planning and class preparation. They found preparing for multiple levels, curriculum differentiation, catering for learner differences, and teaching outside their discipline areas particularly challenging. Many commented that their teacher education program had required them to do planning and preparation, but it was the number and different levels of classes that they were teaching as first year teachers that came as a shock. The time required to prepare and assess adequately was a major challenge for many of the participating teachers in their first year in particular.

6. **Teaching for diversity is about catering for diverse learning styles**
Being prepared for diversity was often couched in terms of catering for diverse learning styles (not culturally, economically or linguistically diverse students). Understanding and engaging with students who live in poverty or who may have different values and beliefs regarding education was, for many of the graduate teachers, a challenge. Graduate teachers felt more prepared when it came to catering for diverse learning styles than for catering for the socio-economic, cultural and linguistic diversity represented in many classrooms. In the early interviews, there was a tendency for some graduate teachers to frame their students as 'other'.

In later interviews, and in many cases, this 'othering' changed to recognising the importance of getting to know their students and their learning needs and of building positive relationships as a starting point for teaching well. The culture of the school, as well as the length of time spent in the same setting, appeared to be factors in altering the 'othering' perspective.

Teachers who were more receptive to and inclusive of students from diverse cultural and linguistic backgrounds tended to be those who came from diverse backgrounds themselves. Interestingly, in the survey free-text responses a number of respondents critiqued the sociology components of their teacher education programs. It appeared that they could not identify a connection between this content and their preparedness to work constructively with culturally and linguistically diverse students.

7. *Teaching requires a longer preparation time, including in schools as part of teacher education*
A one year Graduate Diploma provides inadequate preparation. Teachers who completed a Graduate Diploma program were more likely than their colleagues to comment that their program was too short and therefore did not prepare them as well as it could have. The issue of time rather than the content or quality of teaching was emphasised. Simultaneously, some of these graduates also commented that they enrolled in the diploma program because they could secure a qualification in just one year. Teachers emphasised their in-school experience as more valuable that their university time, which allowed them to justify shorter times at university.

Perceptions of Effectiveness

Summary of themes
1. Teacher effectiveness is indicated by student learning and peer feedback.
2. Good relationships are a sign of effectiveness.
3. Effective teachers are able to differentiate; this requires classroom experience.
4. Hard work in the classroom makes for an effective teacher, perhaps more than teacher education.

Perceptions of (in)effectiveness were initially driven by graduate teachers' experiences in the area of classroom management, behaviour management, and the creation of safe and supportive learning environments. With the passing of time, early career teachers reflected far more often and critically on their pedagogies and curriculum development and differentiation skills. In all interviews, relationships with students and the significance of building rapport with students, and in some instances, with parents and the wider community, were emphasised.

1. **Teacher effectiveness is indicated by student learning and peer feedback**
   Graduate teachers reported their effectiveness on the basis of 'evidence' in the form of their students' learning, positive feedback from more experienced teachers, students and parents, and their own developing sense of confidence in making pedagogical and curricula decisions. Effectiveness was also indicated by student grades.

   Graduate teachers drew on a range of evidence to gauge their effectiveness. Initially they looked primarily to feedback from students, their own assessments of students' learning and colleagues' feedback for affirmation. By the second and third years, a number commented on the parents' support and positive responses they'd received. Some who worked in settings with high absentee rates or with special education students, cited evidence such as increased student attendance or a drop in the levels of student aggression in their classes as a sign of their effectiveness. Over time, their measures of their own effectiveness broadened to other forms of evidence, including national standardised data sets (but typically, only when these showed student improvement in the school data).

2. **Good relationships are a sign of effectiveness**
   Graduate teachers spend much of their first year concentrating on classroom management or developing positive relationships with their students. Teaching is about loving/ liking kids and getting to know them well enough to teach them. Developing strategies for managing behaviours and classroom relationships was a key challenge for many, in particular in the first year. This became significantly less challenging with the passing of time. Teachers who regarded themselves as effective indicated that they had established positive relationships with their students.

3. **Effective teachers are able to differentiate; this requires classroom experience**
   As teachers gain school-based professional experience, they concentrate more on curriculum, including differentiation rather than classroom behaviours. This shift was

taken to be a sign of increasing effectiveness. By the second year, participating teachers tended to indicate that they were focusing their energies on curriculum, including differentiation rather than on classroom management issues. A number of the interviewees discussed how they believed they had established a relationship of trust with their students. Staying at the same school was deemed an important contributor towards this type of relationship, especially in hard-to-staff schools where new teachers frequently turned over quickly. Teachers into their second and third years commented that they were known by students and seen as part of the school culture, and therefore it was far easier to develop positive relationships with new classes.

4. **Hard work in the classroom makes for an effective teacher, perhaps more than teacher education**
   Graduate teachers often attributed their effectiveness to their own hard work and knowledge, or for those working in schools that had strong support structures, to the ongoing assistance they received from their mentor teachers. Teacher education was credited with giving them 'the tools' to work with. Generally, most seemed to believe that teacher education was necessary but not sufficient to make them effective teachers. Their own endeavours and knowledge were what made the difference. This was a belief that most participating teachers held. There was little recognition of how the combination of personal attributes and teacher education and experiences worked in combination to support effectiveness. When a relationship between these was suggested, it was done so reluctantly, with teachers tending to note the benefits of teacher education as an afterthought or referring to a single aspect of teacher education that was seen to contribute to their effectiveness, such as a unit on classroom management or Bloom's taxonomy. Participants over the duration of the interviews generally reported relatively high levels of preparedness.

The importance of employment practices, school context and culture

Summary of themes
1. Jobs are chosen, schools are not.
2. Contract, casual and supply positions often drive competitive behaviours at odds with professionalism and supporting student learning.
3. Internships and extended final practicums provide a pathway to employment.
4. Teaching out-of-field is not uncommon for secondary teachers.
5. School leadership is significant.
6. Principals are partisan about the quality of the mentoring and induction.
7. Successful mentoring is characterised by willingness to discuss teaching and learning openly.
8. Graduate teachers learn through shared planning.
9. Staffroom politics can isolate new teachers.

10. Meeting with colleagues can be either intimidating or re-affirming.
11. Graduate teachers feel pressure to 'fit in'.
12. The school is a normalising apparatus.
13. Many school staff have low expectations of students from low socio economic backgrounds.

The SETE project focused specifically on effectiveness and preparedness of graduate teachers for diverse school settings. As such, case study questions sought to link graduate teachers' perceptions of their preparation and practice to the contexts in which they were working. In doing this, it became apparent that it was not only school location and demographics that were significant in the cases, but also the school culture and the support structures made available to teachers.

1. **Jobs are chosen, schools are not**
   These views had state iterations: i) Queensland: *Go West first – get your country service over and done with;* and, ii) Victoria: *Grab what you can get.* Availability of teaching positions, and particularly permanent positions, is a major employment driver for seeking employment in a school. Graduate teachers went where jobs were. They didn't necessarily initially seek out the schools they were employed in because of an affinity for the student population or school culture but rather most simply wanted work. School location was one of the few draw cards mentioned by the case study teachers and many were not working in their preferred geographic location and this led to mobility in later years. Often, taking a job meant relocating far away from their usual support network of family and friends, a challenge during 'tough' times at school. Sometimes this meant employment in areas where housing was difficult to secure and expensive, especially if government housing was not available.

   This noted, many graduate teachers initially sought out preferred schools and over time they came to realise that the match between their approach to teaching and the school philosophy needed to be strong for them to want to stay at the school. Changing schools was often connected to aspirations and (re)connecting with friends and family.

2. **Contract, casual and supply positions often drive competitive behaviours at odds with professionalism and supporting student learning**
   Many of the case study teachers were on contract or working in casual/supply roles in their first two years. These early career teachers in short term or contract positions often indicated a reluctance to seek assistance from leadership and colleagues for fear of jeopardising their chance of securing permanency. They also commented that they started to see other graduates as their competition. This situation caused tension and compromised collegial working environments. Competition and the need to prepare multiple applications and attend interviews was seen by the early career teachers as taking time away from their core teaching duties and distracted them from supporting student learning.

3. **Internships and extended final practicums provide a pathway to employment**

Sometimes graduate teachers secured employment because they had completed an extended final practicum or internship in the school or in surrounding schools (hence they knew the people, area and the context). Principals mentioned using final practicums or internships as a way of looking for graduate teachers who could fit into the school. From the perspective of many graduate teachers, there is a perception that engaging in practicum at a specific school is what will get you the job there.

Some principals contribute to teacher education through strong partnerships with universities and, for example, do guest lectures for preservice teachers. These principals were well positioned to actively pursue the appointment of 'high-performing' graduates, through their collegial relationships with university personnel. Across the various sites, there was evidence of the schools working with a range of teacher education providers, with many involved in research projects and most working with providers to manage preservice teacher placements.

4. **Teaching out-of-field is not uncommon for secondary teachers**

For some graduate teachers, out-of-field teaching was an exciting opportunity; but for most it was a challenge for which they felt under-prepared particularly in terms of the time needed to develop new content knowledge and lesson plans. Sometimes graduate teachers felt pressure to agree to out-of-field teaching in order to gain and keep employment. In some instances, teaching loads would combine classes in their discipline areas with one out-of-field. Many secondary teachers were teaching a number of out-of-field subjects. Occasionally, in some rural or schools classified as hard-to-staff, graduates were offered jobs for which they had no formal discipline qualifications. Most, when they were able to return to teaching in the fields in which they were qualified, expressed relief at doing so.

5. **School leadership is significant**

Across the case studies, school leaders were strong determinants of school culture. The teachers linked leadership to many senior positions in the school, noting the powerful influence deputies, heads of department and senior staff had on their transition and overall experience of beginning to teach. The relationship (or lack of one) between the school leaders and the new teachers influenced the teachers' perceptions of their effectiveness. Where the school direction and mission was clear and graduate teachers had a connection to school leaders, or had a good relationship with a mentoring teacher, they are more likely to experience a smoother transition and to indicate that they felt supported in the workplace.

Transitions into teaching were most successful when there was evidence of whole-of-school approaches and a common theoretical framing or philosophy; e.g., a whole-of-school-approach in relation to induction of teachers, behaviour management, or practical assistance for writing student reports for the first time. In these instances the role and leadership of the principal in support for new teachers was often pronounced.

6. **Principals are partisan about the quality of the mentoring and induction**

Graduate teachers and principals often provided conflicting reports about the availability and quality of the induction and mentoring structures. In a small number of the case study schools, the induction and mentoring provisions were of a particularly high quality and were described by both principals and graduate teachers as enabling a smooth transition between study and work. However, there was often a sharp contrast in how the school

administration described the induction, support and mentoring for early career teachers and how the existence and usefulness of such programs were commented on by the beginning teachers. In a number of the case study schools, graduate teachers commented that they were not allocated a mentor teacher, or that their mentor was not readily accessible. Graduate teachers often identified limitations associated with their induction experiences and in some settings, mentors were used as performance managers. Additionally, early career teachers commented that implementing local school initiatives and policies requires significant induction to those initiatives, but they also felt that the induction process shouldn't add to teachers' workload.

7. **Successful mentoring is characterised by willingness to discuss teaching and learning openly**
Good mentors were generally approachable colleagues teaching the same year level/ the same subject and who were willing to share lesson plans, learning resources and assessment tasks. These mentors sometimes visited the graduate teachers' classrooms, observed their lessons and discussed teaching. In a few of the case study schools where there was strong support for mentoring new teachers, some mentors were given a time allowance to visit graduates' classrooms.

Graduate teachers employed on casual and very short-term contracts reported receiving less support than colleagues with permanent employment.

8. **Graduate teachers learn through shared planning.**
Graduate teachers valued opportunities to share planning and preparation, and were willing to take responsibility for some aspects of the curriculum. This helped graduate teachers navigate the time consuming nature of planning and preparation, particularly in the first year.

Shared assessment, collaborative lesson planning and team activities (e.g., year group collective planning in a primary school) were helpful for new teachers. Participation in collaborative planning gave graduate teachers a clearer understanding of what was required in their school context, helped them to forge relationships with those they were working most closely with and presented an opportunity for them to share their knowledge from teacher education while simultaneously being exposed to new school-based ideas and approaches. In some instances, however, graduate teachers felt that they were being forced to adopt or conform to practices they viewed as archaic and expressed the opinion that their contribution was undervalued.

9. **Staffroom politics can isolate new teachers**
Many graduate teachers struggled with the difficulties of relationships with other staff: this was a major theme in a number of the case study schools (as well as across the various SETE data sets). A number of teachers expressed feeling undervalued, exploited and disliked by other members of staff. This resulted in them feeling isolated and tending to withdraw from common areas. It also impacted on their sense of effectiveness.

Schools with a welcoming culture were those in which new teachers reported feeling most supported and where they were more likely to approach other members of staff for advice or assistance. The culture of the school was a major factor in determining whether early career teachers were willing to admit they were struggling and seek assistance, or whether they felt compelled to persist on their own.

10. Meeting with colleagues can be either intimidating or re-affirming

For some teachers, the requirement to be involved in professional learning and other meetings with colleagues was avoided because they felt 'put down' and/or inadequate. Conversely, meetings with colleagues were framed by other participants as re-affirming and/or offering an opportunity to learn and share with others. Regardless of whether or not the teachers saw value in working closely with colleagues, many commented that they didn't feel they could afford the time to attend so many meetings—especially in their first year of teaching. As they became more adept at planning and assessing, the pressure seemed to lessen and complaints regarding too many meetings changed in some case studies. When the early career teachers assumed leadership positions themselves (for many, this was in their third or fourth year of teaching), the time to meet together with colleagues was viewed differently.

11. Graduate teachers feel pressure to 'fit in'

Fitting in with the status quo emerged as something which most graduate teachers were attempting to do, not necessarily out of a desire to replicate inspiring practice, but more so to either impress leadership or fall under the radar – both with the same intent – to secure permanency. Some participants noted that they left their teacher education with a progressive set of tools that they could not implement in the learning spaces and cultures in which they were employed. Principals consistently expressed two rather contradictory beliefs regarding employing graduate teachers: that one of the benefits of hiring graduate teachers is that they bring new ideas and enthusiasm to schools, and that graduate teachers are an asset because they are impressionable and can be shaped to fit the school context.

12. The school is a normalising apparatus

The school culture, and how the community and the role of teachers are constructed within it, influences how early career teachers are able to teach and to build rapport with parents and students. Many of the participants commented that they felt obligated to reproduce the teaching practices they saw around them, even when they regarded them as problematic. This was particularly true of graduate teachers on contract. This process of institutionalisation was often noticeable in the later visits when, as three or four year experienced teachers, participants stopped critiquing the practices they initially identified as questionable.

Some settings failed to recognise the different expectations and skills that graduate teachers bring to the school, and teachers believed that the schools therefore did not take advantage of what they had to offer. In some instances, even when they had permanent positions, early career teachers (a number of whom came to teaching from other successful careers) opted out of the school because they believed it did not support their teaching approaches or did not value their knowledge and expertise.

By the third year, many graduate teachers had only distant recollections of their teacher education and were less able to comment or reflect on their teacher education programs in any detail. Many claimed they could no longer recall what was covered.

13. School staff have low expectations of students from low socio economic backgrounds

Graduate teachers had high expectations of their students, but in a number of school contexts this outlook was not always shared by other staff. In the main, graduate teachers could identify their students' various accomplishments (not always those that were counted as significant by the school). This was most pronounced when there were

similarities between the cultural background of the teachers and their students. When speaking about vulnerable students, students from diverse cultural and/or linguistic backgrounds, or families with low income, it was not uncommon for graduate teachers to comment that they thought other staff did not share their high expectations. However, in discussions of the accomplishments of these groups of students, it was also noted that some early career teachers engaged with deficit discourses.

The political context

Summary of themes
1. Teacher quality is measured by standardised testing.
2. Australian Curriculum and 'Curriculum into the Classroom' (C2C) changes the way teachers teach.
3. Employment practices and processes influence opportunities for development of professional identity and practice.

The broader political context impacts the way that graduate teachers perceive the teaching profession and the ways in which they frame their professional identity and practice. Early career teachers identified various ways that political discourse manifests in the workplace and they responded to political pressures in different ways.

1. **Teacher quality is measured by standardised testing**
   Standardised testing regimes have an impact on graduate teachers. High stakes testing, including NAPLAN, was seen by some graduate teachers to stem from a move to make teachers more accountable to political stakeholders, school leaders and, to a lesser extent, to the communities with whom they were working. There were significant pressures on some new graduates to demonstrate effectiveness by ensuring that their students met school grade/performance benchmarks (even if these appeared to the graduates to be unrealistic). Some conflicts emerged between administrators' expectations to explicitly teach for tests and/or to structure classroom materials in line with that of standardised tests, and teachers' awareness of what worked for student engagement and learning. When the NAPLAN results did not improve, early career teachers in some settings reported that the administration appeared to be blaming them for the poor results; this created resentment and a sense of being devalued. In several cases, participating teachers were also critical of how the administration were interpreting results, believing that they were making incorrect comparisons. The early career teachers however seldom felt able to express their criticisms outside the interview.

   Early career teachers also reported being approached in the public domain by peers outside of teaching who were influenced by rhetoric that questions the adequacy of teacher preparation. On the whole, graduate teachers appear to be able to discount media representations that depict teachers unfavourably and report that while critical of the messages, they are not particularly disturbed by political rhetoric driving the introduction of more education metrics.

Some expressed concern regarding the performance pay approach to teaching, believing that this would disrupt the collegial relationships that as early career teachers they found very important in terms of their own effectiveness.

2. **Australian Curriculum and 'Curriculum into the Classroom' (C2C) changes the way teachers teach**

The case studies coincided with trialling of the Australian Curriculum and the introduction of Curriculum into Classroom (C2C) in Queensland. Both resources provide a starting place for curriculum planning. However, in some instances, these resources were viewed as more than just starting points, and were interpreted as mandated curriculum. Participating teachers, particularly those in Queensland, were frustrated that they were not familiar with the new curriculum frameworks they were expected to be working with – they reported being exposed to out-dated curriculum in their teacher education programs and some didn't seem to perceive the curriculum planning skills gained through university to be transferable.

The early career teachers' comments suggest that such curriculum, when they are required to deliver it, not only changes what they teach, but also how they teach. Some participants embraced C2C as containing a wealth of teaching materials, thus making lesson planning simple. This was seen to reduce the burden of preparation. Others, however, lamented that in their school, they had limited room to move given the highly structured framework. The structure of C2C was having an impact on how early career teachers were teaching because they were expected to structure lessons using the supplied materials. These materials did not always align with their preferred pedagogical approaches and teaching strategies. Some felt that the C2C was inappropriate in terms of vocabulary or year level expectations for the students they were teaching and/or the resources were out-dated and non-engaging. In a number of instances, by the third year, teachers were able to discuss how they adapted the C2C materials to make them more appropriate for their own students.

Similarly, the emphases reflected in the Australian Curriculum were at times different to the areas that the graduate teachers had focused on during their teacher education programs. This was pronounced for those working in languages.

Introduction of the AITSL professional standards for teachers in 2011 was an additional new structure stemming from political shifts and which the graduate teachers grappled with as they were seeking permanency and trying to secure full registration.

3. **Employment practices and processes influence opportunities for development of professional identity and practice**

The employment processes outlined earlier (e.g., casual and short term contracts) influence the rate that graduate teachers extend their skills and begin to perceive themselves as part of the profession. By the end of the four years, teachers with continual teaching experience and permanent positions generally regarded themselves as proficient. Those without this continuity and security still positioned themselves as 'graduate teachers', even several years into their careers, and continued to identify the same challenges as raised in the first interviews.

Changing sense of professional identity

Summary of themes
1. Excitement associated with having their own classroom and seeing improvement in students' learning.
2. Graduate teachers often were not yet the type of teacher they planned to be.
3. Graduate teachers are expendable.
4. Workload is a significant issue for first year teachers.
5. Early career teachers initially prioritise professional learning that may help to address current classroom challenges.
6. Relationships are very important to sense of professional self and sense of effectiveness with students and with colleagues.
7. Being a graduate teacher and a school leader are not mutually exclusive.
8. In small, isolated or hard-to-staff schools, graduates often move into leadership positions rapidly.
9. By the third year in teaching, many early career teachers are keen to take up additional responsibilities and fully engage with professional learning opportunities.
10. Challenges associated with understanding that teaching is only part of teachers' work.

Over the four years of the case study visits, many conversations focused on the participants' changing professional identities. New teachers were excited at the learning that they saw taking place, in terms of their own growth and how this was, in turn, reflected in their students' outcomes. While significant advances were noted, early career teachers were often quick to comment that their professional identities were still evolving. The relational nature of teaching, leadership aspirations, the workload and environmental pressures that impact identity development, and issues associated with personal confidence, personal family issues and sense of belonging were all raised.

1. **Excitement associated with having their own classroom and seeing improvement in students' learning**
   Graduate teachers, in particular those working in primary schools, spoke about their excitement at having a space of their own that they could 'practice' in. This emphasis was interesting given the focus on team teaching reflected in many of the teacher education programs. At times it seemed the ability to 'close the door' was a security measure employed to provide graduate teachers with the freedom to take risks with their teaching and learning.

2. **Graduate teachers often were not yet the type of teacher they planned to be**
Many graduates had an idea of the type of teacher they wanted to be and could often see that they were not there yet. Most saw that they were making progress towards this, but others were frustrated at how far they were from being the teacher they wanted to be. This was often seen as a result of not having an ongoing position, the contrast between the teacher's preferred pedagogical approach and that of the school's, or a perceived lack of support from more experienced colleagues.

3. **Graduate teachers are expendable**
During the case studies it became apparent that early career teachers could 'disappear' in large schools. There were a number of sites where on return visits, the researchers were unable to locate participants and no one seemed to know when they left or why they were no longer in the school. Administrators explained theses graduates as 'not suited to this school'. It was apparent that some had 'burnt out', usually in their first year. Burn-out was most readily linked to challenges associated with behaviour management. In many cases, these graduate teachers were quickly replaced giving the impression that they are expendable. Both school leaders and the graduate teachers who left were generally reluctant to take responsibility for the episodes that resulted in the parting of ways.

4. **Workload is a significant issue for first year teachers**
In their first year, many graduate teachers reported working extraordinary hours, i.e., at school by 7am in the morning and working most weekends just to keep up. The workload became more manageable over time as they came to know their students better, built a bank of lessons and activities and their knowledge of the curriculum and confidence in their own decision-making and where they were heading grew. Workload reductions were only made available to graduate teachers with on-going positions and even these graduates indicated that workload was a significant issue.

5. **Early career teachers initially prioritise professional learning that may help to address current classroom challenges**
Even though initial teacher preparation was broadly recognised by graduate teachers as only the beginning of their professional learning, sometimes in the early rounds of interviews these same teachers indicated a reluctance to engage in ongoing professional learning beyond that which was immediately relevant to the current classroom challenges – these being, in the main, behaviour management or challenges associated with delivering unfamiliar content. This was in part attributed to workload pressures and in part to a desire to spend as much time in the classroom as possible. For teachers located in rural schools, travel associated with attending external professional learning was a key deterrent.

All participants recognised teaching as a profession reliant upon commitment to ongoing professional learning and reflective practice. Despite this overarching commitment to their own education, some of the participating teachers were resistant to particular forms of professional learning and did not perceive value in all of the opportunities they were presented with. The hesitancy to take up professional learning opportunities seemed to subside with the passing of time.

6. **Relationships were very important to sense of professional self and sense of effectiveness both with students and with colleagues**
Teaching is relational and the importance of building and maintaining positive relationships with students and colleagues were reiterated in most interviews. By the fourth year of teaching, many of the participants spoke about helping to induct new graduate teachers into their school and appreciated the change in their own status from new to experienced teacher. However, this was not a feeling shared or discussed by those teachers who, even in their third year, still did not have ongoing employment. Relationships were viewed as just as important, but harder to establish by contract or casually employed teachers.

7. **Being a graduate teacher and a school leader are not mutually exclusive**
Some of the graduate teachers interviewed moved into leadership positions quite quickly, (within the first two years) including into sub-school leadership, year level coordination, Head of Department and well-being roles. This trend was not as evident in the quantitative survey data (see page 23). Principals and the teachers provided a range of reasons for this rapid advancement, including that the graduates had the capability, they actively pursued this and put themselves 'out there', they took on the institutional 'look and feel' of a successful teacher in that school, they were available and/or they were male (particularly in non-metropolitan schools). A number of graduates brought expertise and experience to teaching from positions they had held previously, often outside of education.

Graduate teachers in leadership positions indicated that they experienced a steep learning curve. In some instances being propelled into leadership very early in their career resulted in feeling disconnected from other graduate teachers who would have otherwise provided a valuable support network. These teachers often expressed feeling ill-prepared for the positions initially and some worried that they had not had enough opportunity to consolidate their classroom practice which they regarded as the core work of teachers, before they moved into leadership. While the new teachers in leadership positions consistently interpreted their move into such a position as an indicator that their contribution to the school was held in high regard, there were occasions when being fast tracked into these positions appeared to carry a burden of too-much responsibility, too soon. Sometimes the graduate teachers appeared to be placed in the positions because more senior/experienced teachers were not able or willing to take the jobs on.

8. **In small, isolated or hard-to-staff schools, graduates often moved into leadership positions rapidly**
A large proportion of the case study teachers working in small and/or isolated schools moved quickly into leadership roles. At one regional school all of the teachers employed on a permanent basis held positions of responsibility, most of which were above or equivalent to year level coordination. In some instances, case study participants held significant roles requiring whole-school leadership. For example, a fourth year teacher was an Acting Principal. Most regarded the opportunity as indicative of the principal's high regard for their contribution to the workplace. Most took on additional responsibilities will some trepidation and questioned their suitability for the role.

9. **By the third year in teaching, many early career teachers are keen to take up additional responsibilities and fully engage with professional learning opportunities**
By the third year of interviews, most teachers talked about their desire to assume wider leadership responsibilities, if they had not already done so. Many were already in

coordinating roles, and doing professional learning as a result. A number of them were already taking on mentoring roles for the new graduate teachers.

10. **Challenges associated with understanding that teaching is only part of teachers' work**
The organisational, reporting and generally administrative aspects of the teaching profession were features of teachers' work that were not anticipated. Many, particularly those who had been employed in schools for more than a year, commented that they were unprepared for the amount of time they needed to spend preparing reports for the administration, assessing and negotiating school politics. The teacher as an administrator was an aspect of their professional identity they felt was underplayed in teacher education programs.

The community context

Summary of themes
1. Social class issues affect teacher perceptions of students and relationships with community.
2. Changes in community demographics impact schools and teaching.

Many of the graduate teachers interviewed in the first years were working in locations that were unfamiliar to them and working with students from cultural or linguistic backgrounds very different to their own. A lack of exposure to and knowledge about specific community contexts for a number of the early career teachers resulted in misunderstandings and was expressed in terms of a deficit discourse, e.g., when difficulties with students occurred, parental lack of support or student refusal to work were used as reasons for the lack of success. The tendencies to 'lay blame' often changed as relationships developed and early career teachers over time gained a more comprehensive understanding of their communities and their students' specific needs.

1. **Social class issues affect teacher perceptions of students and   relationships with communit*y***
Graduate teachers do not always connect with the communities where they are working. Despite many teacher education programs offering units and embedding information and experiences focused on engaging students and parents from a range of cultural, linguistic and socio-economic backgrounds, when the communities where graduate teachers were working differed widely from their own backgrounds, a range of difficulties emerged. Comments such as 'these kids need literacy', 'these kids need discipline' and 'parents have low aspirations' were not uncommon, at least in the first years of the interviews. This 'othering' of students, their families and communities, was problematic and prevented graduate teachers from creating safe and supportive learning environments and from providing students with appropriate and individualised learning opportunities. There was a perception amongst some graduate teachers that their students live in culturally barren homes, so school and teachers have to compensate – the families do not contribute to the education of the students; they lack the knowledge to do so; and often parents were seen to be not interested. Graduate teachers sometimes reported not being prepared to teach 'these kids'.

In some contexts, especially in areas where the economy was booming and university qualifications were not needed to gain high paying jobs, there was a disjuncture between the importance that early career teachers themselves placed on education as a way 'up and out', and the perceived values of the parents, who reportedly assumed that the high paying jobs requiring few credentials would be readily available for their sons and daughters, as well. In some instances, relationships with parents could be genuinely problematic, not just due to the teachers' lack of familiarity with the community, per se. For example, stories were told by teachers who, when they phoned parents, were greeted with voicemail messages from parents that started off with the phrase, '*%$# off!'

Time spent in the specific school and community enabled many of the early career teachers to develop deeper insights into how to build positive relationships with students and families from diverse cultural, linguistic and socio-economic backgrounds, and deeper understandings of how to engage them in learning, i.e. how to differentiate curriculum to make it relevant and useful to their students. Over time community resources and networks were identified and some of the teachers were able to shift towards culturally sensitive and inclusive practice. For teachers on short term contracts or employed casually this was not always possible and contributed to a sense of frustration and an inability to develop more trusting relationships with their students.

2. **Changes in community demographics impact schools and teaching**
   School closure constantly threatened two of our case study schools; in one instance this was linked to the culture of accountability and standardisation, and in the other, the school's size was too small and therefore unviable. The threat of closure impacted on early career teachers' own sense of commitment to the community and coloured their career plans and professional learning.

4.6.4 Discussion across the case study categories

Through comparisons, how different contexts influenced/impacted the beginning teachers' professional learning became more apparent. The culture of the school, including the extent to which graduate teachers felt supported, welcomed, ignored or devalued, and the relationships that were deemed to be 'correct' between teacher and student within individual schools were other aspects of the case studies that allowed for deeper, closer examination in terms of the research questions. The case studies provided opportunities to see the impact of teaching experience on graduates' perceptions of their teacher education and to see this informed by the perceptions of teacher education held by the principal of their school. How the context and culture of different kinds of schools (e.g., metropolitan, rural, low SES) shaped the beginning teachers' sense of preparedness and effectiveness were explored in more depth through the case studies. Additionally, the range of support provided for early career teachers, both structured and informal, the challenges specific graduates encountered, and the stories of critical incidents they individually and collaboratively told regarding successes and challenges, were significant dimensions of each case study.

There is acknowledgement in the literature that being and becoming a teacher is both a personal and professional journey (Beattie, 2000; Britzman, 2013; Connelly & Clandinin, 1990). However the SETE data indicates that it is a much more nuanced process; a disjuncture between the quantitative and qualitative data shows that the process of becoming isn't as clean cut as previously represented- i.e. as a continuum, that is, as a progression of steps. It

isn't linear – the three spaces of teacher education operate concurrently/ are collapsed. The case study conversations constantly reminded the researchers of how personal and professional identities are often inseparable and complementary, and that teacher identities are relational, that is, teachers become the teachers they are through interactions with their students, their colleagues, their supervisors, their wider community, in their teacher education programs and in their personal lives. As Battey and Frankeand (and many others) note:

> Identities are constructed in relation to history, cultural practices and communities, and the broader contexts in which we participate (Wenger, 1998; Holland, 2001). How one thinks of herself is conceived of in relation to a particular context, with a particular history, with others who have ideas about themselves. […] Teaching is a highly contextualized social practice (Goodson, 1991). As teachers tell stories…they situate themselves and the narratives they use to define themselves. Through these storied identities we can view how the teacher sees herself in relation to teaching, to the content…to her students, and to her community. (2008, p. 127)

In the main, school leaders support the idea that while teacher education is not superfluous, schools are where one learns to be a teacher and that this 'becoming' is a continuous and complex process mediated by the school. Teachers and principals also recognised schools as social spaces characterised by complex interconnections and constructions influenced by geographic, social, economic and environmental dimensions, and cultural formations (see Reid, Green, Cooper, Hastings, Lock & White, 2010).

The thematic analysis provides a necessarily brief glimpse of the complex 'becomings' that graduate teachers experience. In identifying the various themes in the graduate teacher interviews, it was interesting to note the consistencies and inconsistencies with the other data sources, including principal/ school leader interviews. In these two instances the discourses appear to be similar with emphasis placed on relationships, workload and development of professional identity. Similarly, responses to the free-text survey items reveal comparable trends, particularly in relation to perceptions of teacher education programs, challenges and areas of practice strength in the initial years, and discussion of employment mobility. How these perceptions change over time appears to be consistent across the data sets.

Teacher education programs

The case studies evidenced graduate teachers' and leaders' perceptions of teacher education and the graduate teachers' work in schools. These perceptions drew on other perceptions - those of schools, of teaching and of the teaching professions and teachers. Each set of perceptions needs to be considered as they relate to the other perceptions. It is not asserted here that all the case study participants held all these perceptions. Nor is it asserted that these perceptions reflect all perceptions of these areas indicated by all participants. What is offered here are strongly evidenced trends in the interview data.

The case study interviews of graduate teachers revealed multiple perspectives of teacher education programs. Teacher education reflected a developmental view of learning to teach. Teacher education was positioned as foundational and to be valued for providing knowledge and skills. The programs experienced by graduates were valued for the type of practicums they offered and the links the courses made to school experience. Although there were few specifics from the actual programs, which identified strengths of teacher education, there

were specifics on difficulties of teacher education. These included teacher education's failure to completely prepare graduates for the work of teaching. Teacher education fails to provide the expertise required to manage classroom relationships and relationships with parents and the community. Teacher education also fails to prepare for the day-to-day work of teaching nor does it adequately prepare graduates to find employment. These perceptions of teacher education need to be read within the range of perceptions these graduates have of themselves in their work places, the profession of teaching, the schools and the school community.

Teaching and Schools

Critical in understanding graduate teachers' views of teacher education are their views of teaching. The profession of teaching is perceived by them as a practical matter. Teaching is perceived as a matter to be learnt through hard work and through experience. It is through experience and on the job training that teachers learn how to successfully manage classrooms and relationships with parents. Teaching is paradoxically an individual experience and also an experience to be best achieved through collaboration. Graduates perceive that the effectiveness of a teacher's work is known through student learning outcomes and the perceptions of effectiveness are mediated by the opinions of staff and school community. Teaching is perceived as a political endeavour.

These perceptions were closely linked to perceptions of schools. The case study schools varied greatly but there were threads that ran across all schools. Generally schools were not chosen by the graduates but rather the jobs at the school were sites of attraction. It was the schools that were seen as powerful in employment. School culture was seen as determined largely by the principal and senior staff. This leadership team were also seen to determine professional learning and the assessment of their own induction and mentoring. Schools are viewed as political sites, often with unsupportive staff cultures and with teacher effectiveness determined to a large extent by test results.

The graduates largely valued their teacher education as indicated above but they did perceive themselves as needing support and underprepared for many aspects of teaching. Their sense of agency is limited initially by their employment and contract opportunities. They often presented themselves as immigrants to the school community. They often suggested they were marginalised in the school community and must take on the values and culture of the school including the school's view of teacher education. They were sometimes concerned about peer evaluation and professional exposure to peers and school leadership.

Complexities emerged most commonly when comparing the school leader interview data and principal's survey responses. In the surveys principals tended to focus on the strengths of the graduates they had employed. In the interviews principals were able to more fully explore complexities associated with individual graduate teacher's professional development. This noted, principals rarely gave full and frank disclosure of the reasons why some case study participants were not re-employed. Not surprisingly, there were irregularities in the information that we received from the principals about the suitability of these graduates for the teaching profession compared to the data we gathered from the graduate teachers themselves. In the main, discrepancies could be linked to either differing perceptions about professional ethics, different expectations regarding workload and support structures, and differing understandings of the requirements of the school context, this later point often being linked to the school's educational philosophy or mission. With the exception of a small number of cases, the qualifications of graduate teachers did not feature in these discussions.

Employment conditions

The employment processes in Victoria and Queensland are dissimilar and appeared to weigh upon graduate teachers' transitions into the teaching workforce. In Victorian government schools, principals have the authority to directly appoint employees, with the expectation that this allows schools to identify candidates that have aspirations and qualifications that match existing vacancies, and that as such appointees will be able to 'perform successfully' (Department of Education and Training, 2015b, p.15). In Queensland, a centralized system is utilized for appointment of teachers in government schools, whereby applicants are matched to vacancies according to their expertise and school needs (Education Queensland, 2013). Teachers are assigned a suitability ranking that identifies their suitability for teaching employment and they can improve their likelihood of employment by indicating a willingness to work in rural and remote schools; this is then linked to opportunities for advancement and eligibility for transfers within the system (Education Queensland, 2013). These processes influence not only how and where graduate teachers are employed, but also why they apply for particular positions and locations.

Context and community

Contextual forces, including social forces also had a bearing upon the data collected at each school site. The major contrast that emerged between the schools was the economic circumstances of the diverse communities. The communities had been affected by significant changes in the Australian economy, producing in some communities economic prosperity and in others a marked decline in the employment opportunities available to young people on leaving school. The specific contexts in which the graduate teachers found themselves shaped the stories they told about their induction into the profession in complex ways, raising important questions as to how school context might properly be acknowledged both by teacher educators and policy makers. The experiences that these early career teachers narrated challenged the model of professional growth embodied in professional standards, prompting a reconsideration of the ways that the institutional settings in which early career teachers' work mediate their experiences.

In addition to economic circumstances and employment processes, school location appeared to mediate experiences. Graduate teachers working in smaller schools reported having close relationships with the principal and other staff (where applicable). Being employed at a small school presented the graduate teachers with opportunities to gain insight into what is required of school leaders and to work in close collaboration with their principal and the broader school community. Some challenges associated with lack of access to external professional learning for those working in rural schools were voiced, as were challenges associated with mentoring. In some instances an external mentor was recruited to work with a first year teacher, but in most cases either the teaching principal or another member of a very small staff was the graduate teacher's mentor. This made it difficult for some graduate teachers to raise concerns or request additional supports. Staff absences were particularly disruptive to a number of the small, isolated schools and resulted in some graduate teachers assuming high levels of responsibility early in their careers. Working with multi-age and multi-stage cohorts was commonplace for teachers in their first year who were employed in small and isolated schools.

Conversely, graduate teachers working in larger schools often worked most closely with teachers working in the same faculty or teaching the same year level. Many of these graduate teachers did not know staff members outside of their area, including other early career

teachers, and did not tend to have close relationships with their school principal. Some commented that they didn't believe the principal knew their name and their teaching practice was, on the whole, less visible to school leadership. Access to in-school supports including school-based professional learning and school-wide induction and mentoring programs varied considerably, as did access to external professional learning. This noted, both appeared to be more accessible, though not necessarily of a higher quality, in large schools (schools with over 1,000 students). Access to these supports in all schools was usually limited to staff in ongoing positions and staff on longer-term contracts; that is, those teachers who were employed on short term contract did not always get the benefits of having a mentor or professional learning opportunities.

5. Discussion

SETE set out to investigate the following research questions in relation to the effectiveness of teacher education:

1. How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

2. What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of school settings?

3. How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

To address these questions, the research team drew upon multiple sources of data including:

*   A national mapping of teacher education programs (2011-2012) to identify the key features of the teacher education programs offered in Australia at the time of relevance to the cohort being followed;

*   Surveys of graduates (2012, 2013 and 2014) which contained scaled questions and opportunities for open ended responses focused on their perceptions about their preparedness and effectiveness in relation to key areas of teaching;

*   Surveys of principals (2012-2013) which contained scaled questions and opportunities for open ended responses focused on their perceptions about graduate teachers' preparedness and effectiveness in relation to the key areas of teaching; and,

*   Case studies of schools capturing graduates' early career experiences as well as their evolving perceptions of their preparedness and effectiveness, conducted across the four years of the project (2011-2014).

This unique, longitudinal data set was generated in response to detailed analysis of national and international literature (and associated policy debates) which have highlighted the complexity associated with attempts to determine the effectiveness of teacher preparation and the multiple factors that need to be considered within any discussion regarding the relationships between graduating teacher effectiveness and teacher preparation.

Relevant literature regarding the evidence base for each question is firstly provided followed by findings from the research, as they relate to each of the three research questions. The questions are discussed in the following sections.

5.1 How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

5.1.1 Background

In the US, critics of teacher education have for some time claimed that 'teacher education is broken and needs to be fixed' (Cochran-Smith, Piazza, & Power, 2013, p.7). In England, the case for teacher education reform began under the Thatcher and Major administrations (Furlong, Barton, Miles, Whiting, & Whitty, 2000). The perception of teacher education as not delivering graduates as 'classroom ready' and 'best' equipped to teach is also a view in Australia. In 2002, a federal government study on the transition of beginning teachers into professional life asked beginning teachers and their supervisors how well teacher education programs prepared them for their first year of teaching. 29.6 per cent of supervisors and 44.6 per cent of teachers felt that teachers were prepared 'well' or 'very well'; 45.2 per cent of supervisors and 36.1 per cent of teachers felt teachers were prepared 'adequately'; and 25.3 per cent of supervisors and 19.3 per cent of teachers felt teachers were 'not very well' or were 'poorly' prepared (Department of Education Science and Training, 2002). In 2006, the Australian Council for Educational Research (ACER) reported significant variation in the quality of teacher education programs across providers (Ingvarson, Elliot, Kleinhenz, & McKenzie, 2006). Then the 2008 Australian Education Union's (AEU) New Educators Survey reported that 38 per cent of respondents were satisfied with their pre-service education, 40 per cent of respondents rated it as preparing them 'well' or 'very well' for the reality of teaching and 22 per cent rated it as 'poor' or 'very poor' (AEU, 2009).

More recently, the Discussion Paper for the Victorian Government's 'New directions for school leadership and the teaching profession' strategy stated:

> All too often Victoria's teacher training, referred to as pre-service education, falls short of the demands of today's schools ... Principals report that in the case of more than one-third of teachers, insufficient pedagogical preparation hinders student instruction. (Department of Education and Early Childhood Development, June 2012, p.10-11)

In relation to specific areas of preparation, the 2010 Staff in Australia's Schools reported that,

> Over three-quarters of early career teachers felt that their program had been helpful or very helpful in preparing them for 'reflecting on my own teaching practices' and developing and teaching a unit of work'. About two-thirds also assessed their program highly on 'Working effectively with other teachers' and 'teaching the subject matter I am expected to teach'. Higher proportions of primary teachers rated their program highly on developing students literacy (61%) and numeracy skills (65%), compared to secondary teachers (21% and 30% respectively).(McKenzie et al., 2011, p.xvii-xviii)

However, the report indicated that fewer than one-third of early career teachers rated their teacher education programs highly for preparing them to teach students with learning difficulties, students from Aboriginal backgrounds or students from different cultural

backgrounds. In addition, SiAS 2010 reported that a majority of principals considered that recent teacher graduates were only well prepared or very well prepared in four (primary) or five (secondary) areas out of ten specified areas.

So, there has been regular and consistent reporting of where teacher education has been seen to be in need of improvement. However, many of these are government or similar reports which follow a familiar procedure. For example, the recent TEMAG did as many previous reviews have done – call for submissions from interested parties in relation to the issues being examined and then consider these in developing a set of recommendations for government. Perhaps it is not surprising that the submissions largely re-hashed and re-presented well-worn and often anecdotally informed concerns about teacher education and the teaching profession as well as suggestions for remedying the situation. The 'conventional wisdom' arguments were well represented and many submissions were not informed by research-informed knowledge. However, they were used and quoted by TEMAG in their deliberations – quite appropriately given their brief. Large-scale empirical research to inform such debates has not been carried out. SETE set out to fill that gap.

5.1.2 The contribution of SETE

This section discusses the contribution of the SETE findings to questions of how well equipped graduates are to meet the requirements of the diverse settings in which they are employed. In this study, 'well equipped' means how well the beginning teachers perceived they were prepared by their teacher preparation program for work in the school context in which they were employed, and includes perceptions of their effectiveness as beginning teachers. We examined these notions of 'preparedness' and 'effectiveness' from the perspectives of the graduates and also from their principals' perspectives. 'Diverse settings' represented the broad range of socio-economic, geographic, culturally and linguistically diverse school communities in which teachers might be employed. Part of this was the employment conditions as well as the particular employer jurisdictions.

Recurring discourses in the literature and practice of teacher education often accept the notions of what it means to be prepared for teaching and to be an effective beginning teacher as universally understood and unproblematic. The terms are rarely questioned or problematized. The rhetoric suggests that a teacher is either i) effective and therefore well prepared, or ii) not effective and therefore not prepared. In the latter situation, the task then becomes finding out exactly what it is they are not prepared in or for and making recommendations that these areas be included in the teacher education program as another unit of study in the program or as another topic to be addressed in program documentation submitted for accreditation purposes. Issues of context are rarely considered. Moreover, a linear connotation is often implicit – one is prepared first and then one can be effective. However, the SETE study highlights the messy, non-linear and sometimes unexpected ways of learning teaching that problematize these generally accepted ways of thinking about graduates' preparedness for teaching by their teacher education programs and their effectiveness as beginning teachers.

5.1.3 Preparedness and Effectiveness

One of the key concepts being focused on world-wide in relation to thinking about the quality of teacher education is the effectiveness of the teachers being 'produced' by those programs. There are currently many ways in which teacher effectiveness is determined, sometimes dominated by a focus on students' standardised test scores and value added approaches,

particularly in the US (e.g. Gansle, H.Noell, & Burns, 2012). However, teacher effectiveness is not a single concept with a single meaning (Cochran-Smith & Power, 2010). Teachers make countless complex decisions each day, in often very different contexts, with wildly variable supports for their work with increasingly diverse students. Therefore gaining an understanding of teacher effectiveness must take into consideration a number of dynamics. SETE argues that:

> Focusing on the trialectics of the spaces of teacher education helps researchers to move beyond what are often crudely managerialist and politically detached understandings of teacher quality or teacher effectiveness. It enables us to focus on the lived space of graduate teachers' experiences that captures both real and imagined understandings of their effectiveness in particular contexts. This, in turn, draws attention to the possibility that teachers' sense of effectiveness and preparedness may change over time rather than simply ''being'' a fixed outcome of teacher education. (Rowan et al., 2015 p.294)

The effectiveness of graduates in their specific school contexts takes into consideration the graduates' practical consciousness - their identity, pedagogical preferences, professional experiences and intended/ actual lived space in the context of educational reform in Australia. Effectiveness in this research differs from the understanding of the term used in improvement frameworks. Ingvarson, Beavis and Kleinhenz (2004) note that characteristics such as previous experiences, the processes associated with learning to teach, and the quality of the professional community in the school influence a person's perceptions of effectiveness. Such attributes form the basis of one's self-concept as the set of perceptions and beliefs about oneself. Such beliefs can be shaped in social settings by others in the group or profession and professional interactions. Biases such as status quo and in-group bias, consensus, and projection bias can be formed in groups and through interactions. Such biases are an integral part of coming to understand one's effectiveness in a highly social profession such as teaching, and can be shaped by not only those one is working with, but also the broader social, political, historical and economical context of the work environment.

Figure 5.1 shows diagrammatically the possible factors contributing to variation in perceptions about one's own effectiveness. Investigating how teachers manage and negotiate these factors provides an understanding of how they see their effectiveness. Thus, effectiveness for the SETE project is determined through the graduates' and principals' perceptions of the relational aspects of their preparation and work (Day, Kington, Stobart, & Sammons, 2006; Day, Sammons, Stobart, & Gu, 2007; Day, Stobart, et al., 2006; Sammons et al., 2007) coupled with the notion that teacher education is indeed 'initial' and that learning teaching is ongoing and continues in schools (Berry, Daughtrey, & Wieder, 2010; Mockler, 2013). We think of effectiveness in terms of how the new teachers perceive their own effectiveness in relation to context and personal variables (as opposed to the way effectiveness is often determined, either through teacher performance assessments or value added measures of student achievement). Perceptions are contextualised within the broader social, political, historical and economical contexts of schools in Australia, as well as the specific contextual factors of the schools such as school philosophy, location, and student population, to name a few. Personal qualities and variables included notions of the self, interactions and experiences in relation to the context.

Figure 5.1: Factors contributing to perceptions of effectiveness
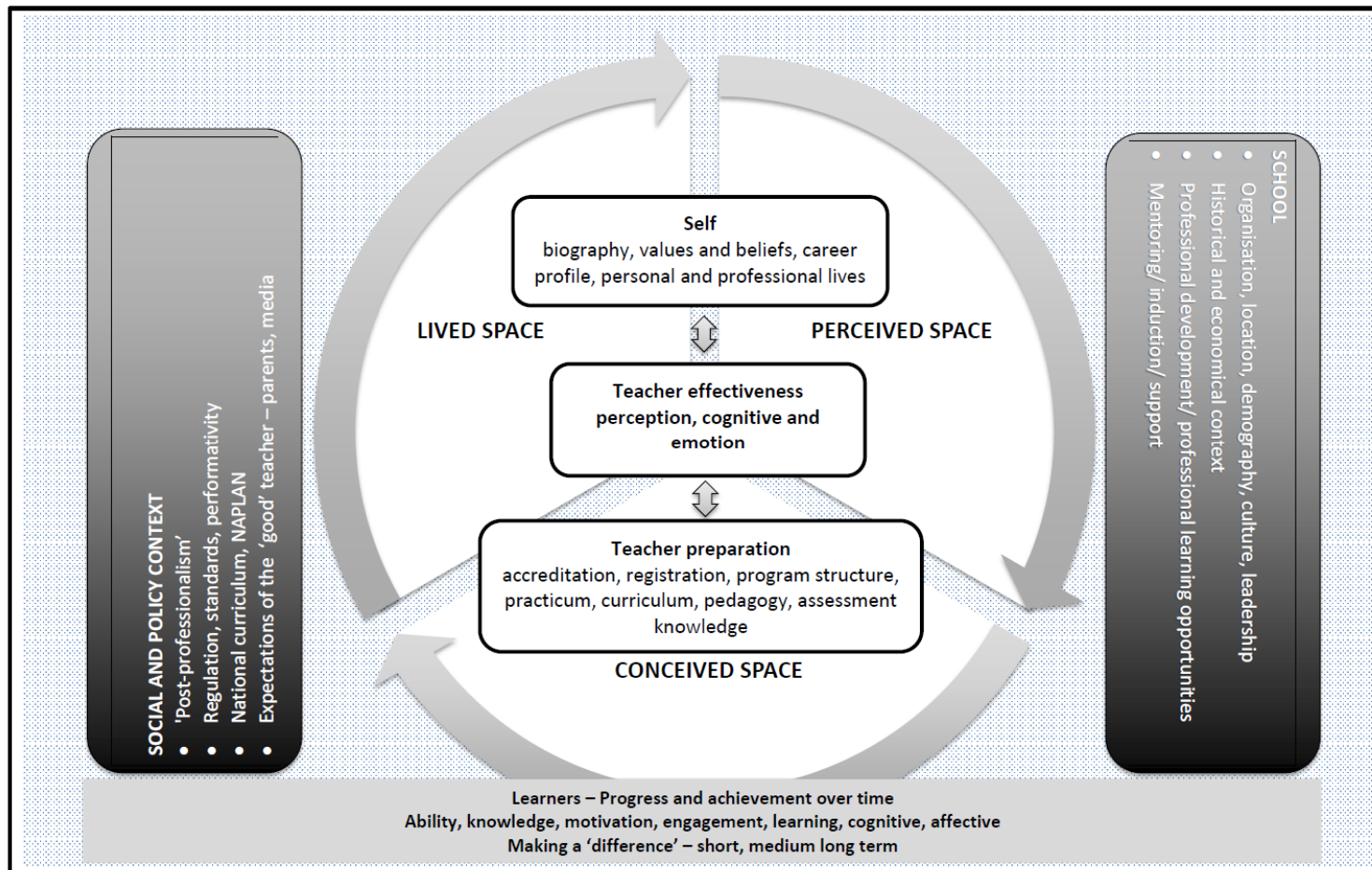
SETE set out to backward map teachers' perceptions of effectiveness in their school context to their preparation for teaching. Our focus was on how the graduate teachers perceived their teacher preparation as effective in relation to preparing them for the context in which they were working and to identify characteristics of various programs that were deemed effective for teachers in diverse school contexts within the broader social, political, historical and economic contexts within which teacher education is developed and regulated. We focussed on,

- graduate teacher's perceptions of their preparedness for teaching;

- graduate teacher's perceptions of their own effectiveness as beginning teachers; and,

- principal's perceptions of the graduate teacher's effectiveness as an early career teacher.

5.1.4 SETE: Feeling prepared and feeling effective

We use the term 'preparedness' to describe the perceptions of the graduate teachers on their preparation for beginning teaching and 'effectiveness' as the perceptions of the graduate teachers and their principals on their effectiveness as early career teachers. As outlined in Section 4, graduate teachers were asked about their level of agreement (on a five point Likert scale of agreement where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree) with the statements about preparation for teaching and their effectiveness as early career teachers across the nine key areas – the SETE perceptions of preparedness and effectiveness sub-scales.

Preparedness

Overall, graduate teachers felt prepared across all nine key teaching areas as outlined in Section 4.5.1 and detailed in Section 4.2.3 and 4.4.3, but more prepared in some areas than others. From statistical analysis of the survey data and analysis of free-text responses to open-ended questions combined with analysis of the case study data, graduates reported feeling better prepared in i) pedagogy, ii) professional ethics and iii) engagement with ongoing professional learning. Capacity to engage with ongoing professional learning has become a key feature of the Australian Professional Standards for Teachers (See Professional Engagement Domain, AITSL, 2011b). This particular area has been identified as vital for the teaching profession and SETE results demonstrate that graduates feel prepared for lifelong learning and while initially graduate teachers prioritised professional learning to address classroom challenges, the focus diversified over time. Likewise graduates identified they felt more prepared in the area of professional ethics, again another important measure of a vibrant teaching profession. Pedagogy (understood here as the art and science of teaching) also emerged as an area graduates felt well prepared. Being able to match pedagogical strategies to key learning areas is what separates someone with content or discipline knowledge expertise from someone with the ability to teach and influence student learning – a content pedagogical knowledge (Shulman, 1987).

From the surveys and supported by the case study data, graduate teachers felt less well prepared in the areas of i) classroom management, ii) professional engagement with parents/carers and the community, iii) assessment and the provision of feedback and

reporting on student learning, and iv) teaching culturally, linguistically and socio-economically diverse learners. These perceptions were mediated by the workplace context.

Classroom management is an area that has been long identified as a key challenge by all teachers (both novice and experienced alike) and indeed the 21st century proves that Australia teachers are faced with an ever growing diverse student population as well as the expectation to be 'all things to all students across all key learning areas'. Further examination of the open ended responses to survey questions and case study data, revealed that graduates explained that they knew the importance of building and maintaining supportive relationships with their students. They highlighted the need to build rapport and they knew how to develop a safe and supportive learning environment – in the case studies good relationships with students was identified as a sign of effectiveness. It is important to consider that beginning teachers are more likely to be in contract positions making these key areas identified above difficult to develop and maintain. The case study data also highlighted that beginning teachers sometimes found themselves placed in the most challenging situations/classrooms. However, by the second year, case study teachers tended to indicate that they were able to focus their energies more on curriculum and differentiating instruction rather than on classroom management issues. Establishing a relationship of trust with their students was seen as central to this and staying at the same school was deemed an important contributor towards this type of relationship, especially in schools where teacher turnover was high.

Professional engagement with parents and communities is one area where graduate teachers identified themselves as less prepared. Given the relatively narrow 'classroom' focus of most professional experiences this is perhaps not surprising. It is likely that ongoing learning teaching is particularly relevant for the areas of classroom management and engaging with parents and the community. Analysis of the case study data over time supports a notion that only 'some' of the learning in these areas can be developed during teacher education and that great learning and growing expertise only develops in the specific setting of an individual teacher's workplace. The workplace setting and the learning support available during induction is particularly influential on how knowledge and skills in these areas develop.

Assessment and high stakes testing (e.g. NAPLAN) also emerged as an area in which beginning teachers identified as feeling less prepared. Again this area is not surprising given that for many teachers who philosophically disagree with the heavy emphasis upon high stakes testing and arguments made that for some students these tests only serve to widen the opportunity gap. This is a highly contested research space and the case studies reveal that education metrics focused on teacher effects are not necessarily welcomed in the workforce.

An area where the graduate teachers felt underprepared (and also less effective) was teaching culturally, linguistically and socio-economically diverse learners. However, as noted in Section 4.2.3, being prepared for diversity was often couched in terms of catering for diverse learning styles, not in relation to teaching culturally, economically diverse students. The case studies (Section 4.6.3) highlighted that working with and engaging students who live in poverty or who may have different values and beliefs regarding education was a challenge for many. Some graduate teachers suggested that other school staff had low expectations of students from low socio-economic backgrounds, which raised additional challenges when it came to developing inclusive practice. Class issues and changes in community demographics also affected teachers' perceptions of students and relationships with community. Graduate teachers felt more prepared when it came to catering for diverse learning styles than for catering for the socio-economic, cultural and linguistic diversity represented in many classrooms.

These findings do suggest that teacher education can do more to improve in these areas and there is much to be learnt and implemented from those working in ensuring a socially just teacher education model and what makes exemplary teacher education programs (Cochran-Smith & Zeichner, 2005). However, the longitudinal nature of the SETE study demonstrates how learning in these areas grow over time, some foundational knowledge and skills in teacher education and then growing expertise over time as a result of practice and learning in the specific workplace. As earlier research has demonstrated this can also include revisiting and growing in expertise as a teacher moves into another school workplace (e.g. Berliner, 1987; Berliner, 1988; Day, 1999; Day, Fernandez, Hauge, & Moller, 2000). The question then becomes what is possible and desirable to expect during and by the end of teacher preparation?

Effectiveness

Overall, the graduate teachers saw themselves as effective across all nine areas - all areas except teaching diverse learners had a mean of four or above in the surveys. However, they reported feeling more effective in:

- Professional ethics

- Engagement with ongoing professional learning

And, less effective in:

- Teaching culturally, linguistically and socio-economically diverse learners

- Design and implementation of the curriculum

- Pedagogy

- Assessment and the provision of feedback and reporting on student learning

The areas in which the graduate teachers felt less effective are firmly located in their classroom work with students. In response to open-ended questions and case study data, the teachers elaborated on the significant degree of challenge they found in teaching culturally, linguistically and socio-economically diverse learners. These findings were consistent across all data sources but in the case study interviews negotiation of relationships with other staff members and school leadership were identified as additional areas of challenge that can inhibit effectiveness. Moreover, there is some evidence from the case studies that smaller schools provided the context for the beginning teachers to work more closely with the school principal and the broader school community and that this provided them insights into successful teaching in that context.

Interestingly, in the survey, teachers identified *pedagogy* as an area in which they felt more prepared but an area in which they felt less effective. A second clear area of disjunction between preparedness and effectiveness was that of *classroom management*. The teachers identified that they were effective but less prepared in this area. The case studies and responses to open-ended questions about challenges in the surveys revealed that for many graduates classroom management was initially their key challenge, especially in schools where managing student behaviour was seen as the sole responsibility of the individual teacher. However, it is also an area where many early career teachers perceived themselves to have made significant advances with the passing of time in teaching employment.

The case study interviews provided an opportunity to understand how the graduate teachers 'measured' their effectiveness. Their sense of effectiveness was informed by evidence of their students' learning, by positive feedback from more experienced teachers, students and parents, and by their own developing sense of confidence in making pedagogical and curricula decisions. This changed over time. Initially they looked to feedback from students, their own assessments of students' learning and colleagues' feedback for affirmation. However, by the second and third years, a number commented on the parents' support and positive responses they'd received from parents and carers. Some who worked in settings with high absentee rates or special education settings cited evidence such as increased student attendance and engagement as a sign of their effectiveness. Over time, their measures of effectiveness broadened to other forms of evidence including national standardised data sets.

The case study data suggested that graduate teachers often attribute their effectiveness to their own hard work and assistance from mentors; successful mentoring was characterised by shared responsibility for planning and willingness to discuss teaching and learning openly. Case study participants indicated that they learn through shared planning. Their teacher preparation program was credited with giving them 'the tools' to work with and that the journey to effectiveness built on this foundation, and that this came as a result of their own hard work.

Linking perceptions of effectiveness and preparedness

Overall, the graduate teachers considered that they were more effective in all key teaching areas than they had been prepared in these areas. Their preparedness and effectiveness are highly correlated. Though, as to be expected, perceptions of effectiveness as beginning teachers reported by both the early career teachers and their principals increased over time while perceptions of preparedness stayed much the same (see Appendix 5).

There were statistically significant increases over time in relation to effectiveness, with the most significant differences between preparedness and effectiveness in classroom management and professional engagement with parents/carers and the community (refer to Appendix 5). Principals' ratings of effectiveness matched to graduate teacher responses were similar but generally slightly higher than the graduate teachers self-rating. These responses provoke previously accepted relationships between preparedness and effectiveness. The disjunctions between teacher responses on preparedness and effectiveness are addressed by attention to responses to case study questions and other survey items such as 'key challenges in beginning teaching' and similar questions inviting free-text responses. In this data, the ongoing learning or indeed the continuing preparation of teachers was strongly indicated. The inadequacy of preparation as a stable confined complete concept is highlighted.

Graduate teachers and principals both identified classroom management (both rated very high; more than double next highest rated challenge) and catering for diverse learners (aligns with perceptions of effectiveness) as the key challenges in beginning teaching, although teachers rated these areas as more of a challenge for themselves than principals thought were a challenge for them. Interestingly, teachers rated assessment and reporting and planning as far greater challenges than principals thought they were, while principals rated pedagogy as a far greater challenge for new teachers than the teachers themselves saw it. In the case studies, classroom management was the key challenge identified in the initial round of site visits; this became significantly less challenging with the passing of time.

Links to other variables – demographics, employment, school, teacher education program

Factors beyond the teacher education program were influential in how graduates responded to the question of how prepared and effective they felt. Overall, correlations between personal and school characteristics and perceptions of preparedness and personal and school characteristics and perceptions of effectiveness were weak.

The two variables found to have the greatest bearing on perceptions of preparedness and effectiveness (as measured in the surveys) were employment and gender, with the findings from the case study data adding support to the quantitative findings.

In this study, graduates were employed in casual, contract and permanent positions. Only about one third started their teaching careers in permanent positions while almost 60 per cent commenced teaching in a contract position and 11 per cent had casual positions. Those who were employed on an ongoing, permanent basis felt that they were better prepared and more effective in comparison to those in casual/contract positions.

Females felt better prepared and more effective than males. Case study and survey data revealed that males were more likely to see themselves as school leaders into the future and females to see themselves remaining in classrooms.

There were no significant differences for graduate teacher perceptions of preparedness and effectiveness based on aggregated school location (metropolitan and non-metropolitan) from the survey data. Differences in experiences of graduate teachers, based on school location, were, however, apparent in the case studies and in the disaggregated simple descriptive statistics. Working on a small staff, catering for a large age and stage range, professional isolation, career planning, engaging the local community and teaching across the curriculum were among the challenges faced by teachers in isolated and small schools (Kline and Walker-Gibbs, 2015). Exposure to leadership opportunities and access to financial and transfer incentives were among advantages more common for participants working in regional and rural schools.

SETE case studies suggest that the ways in which the policy context and school culture interact differs significantly between schools, even schools which are similar in terms of student demographic and location. These variations are not readily captured in the quantitative data. Case studies revealed that staffroom politics can act to isolate graduate teachers and position them as cultural immigrants. This political facet of schools may account for why the school was framed as a normalising apparatus; within which graduate teachers often felt pressure to 'fit in'. Further to this, policy over-lay including the introduction of the Australian Curriculum and 'Curriculum into the Classroom' (C2C) was reported to change the way teachers teach.

One of the circulating discourses is that the school context is critical in teacher effectiveness and this is heard in the literature. A review of literature, in the last decade in particular (Craig, 2012; Lasky, 2005; Tang, 2011), reveals the difficulties many graduates face upon entering the profession in coming to terms with the shifting nature of both education and their identities as shaped by contextual factors. More recent contextual factors that have been identified as having an impact on teachers' identity in the literature include educational reform. The demands of performance in regard to registration and to contract requirements have far reaching impact on perceptions of effectiveness and also on preparedness.

5.1.5 Concluding comments

SETE focussed on questions of teacher preparedness and education within a wider discussion around being and becoming a teacher (Britzman, 2003). The study indicates that beginning teachers feel that they are effective in influencing student learning (inter alia) and this is supported by assessments made by their principals. However, they feel unprepared in managing classroom behaviour and engaging with school communities. Understanding that teaching is only part of teachers' work and that upon graduation teachers were not yet the sort of teachers they planned to be accounted for additional challenges. This was in part offset by the excitement associated with having their own classroom and seeing improvements in their students' learning. The key challenge for beginning teachers, and this is identified particularly strongly in the case studies, is a relational one - relations with students and with the adult community with which they must engage was important to their sense of professional self and sense of effectiveness both with students and colleagues. In this way, teacher education is viewed as the first part of a professional continuum of doing and learning and growing expertise, rather than a distinct preparatory phase (Ward, Grudnoff, Brooker, & Simpson, 2013).

Most teacher educators would agree that it is important to introduce preservice teachers to the complexity of teaching and to equip them with strategies to negotiate their identity in various teaching contexts (Cooper & He, 2013). As identity continually shifts and changes in response to context, so too will notions of effectiveness. They vary over time according to school context and career phase as well as personal life phase (particularly when challenging linear conceptions of teacher development and expertise). Perceptions of effective teaching vary according to student socio-economic status and ability, grade level, or teachers' objectives (Creemers & Kyriakidēs, 2008). Executing theory into practice involves merging professional knowledge and personal knowledge together to create effective teaching approaches within various different contexts. This delicate balancing act or constant shifting for novice teachers can be rather daunting (Cooper & He, 2013), particularly when the need to cultivate collective expertise and provide other types of ongoing support and professional development for teachers is particularly strong in high-needs schools, which often have a disproportionate number of beginning teachers (Berry, Daughtrey & Wieder, 2010). But SETE data is not totally supporting this. Difficulties seem to arise for the participants from the teaching experience more than from the context. That is, the new teachers' individual engagements with the practices of teaching overwhelmingly dominate their feelings of preparedness and effectiveness.

In the qualitative data gathered from the case studies and the responses to open-ended questions in the surveys, graduates argue their preparation through teacher education would have been enhanced by more time spent in schools, more time on strategies for teaching and less theory. Principals supported this. This is not a new perspective. It is indeed an entrenched discourse in schools. But it does warrant attention. The prevalence of this position from principals and graduates indicates its entrenched and pervasive presence in schools and suggests that universities and schools need to forge new synergies by working together to create collaborative spaces for teacher education (physical as well as conceptual spaces) involving universities, employers and schools that bring together learning teaching and doing teaching. As teacher educators, we are right to be concerned that there is a persuasive political discourse that is urging a return to craft based perspectives of teacher education.

SETE is challenging some of the preconceptions of what it means to be prepared and effective as a beginning teacher. The perceptions expressed by beginning teachers and principals differ,

but they share the commonality of 'interpreting larger political controversies and competing policy agendas' (Cochran-Smith, Cannady, et al., 2012) spoken of in the recent literature. Teacher education research is about many genres and SETE findings are disrupting the theoretical frames that characterise learning to teach as a neat and linear teacher education continuum. It confirms the value of mixed methods study and longitudinal analysis. Without this approach and investigation over time of preparedness and effectiveness, the complexity of new frames of reference for the analysis of the central issue of two key characteristics of teacher education would have been obscured. We argue for continuous renewal and a focus on a continuum of teacher education and learning teaching, one that blurs the boundaries between *being prepared* and *being effective*.

5.2 What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of schools?

This section draws on the SETE data to examine the features, components or characteristics of teacher education programs that are reported as having been effective in preparing teachers to work in a variety of schools.

As discussed in Section 3.1, SETE first mapped the characteristics of teacher education programs across Australia at the point-in-time that was relevant for the 2010-2011 graduate teachers being followed in the study. Information about the programs was collected and collated from providers' and regulatory authorities' websites, and then verified in interviews with providers. This mapping provided an overview of teacher education programs across Australia including:

1) Teacher education structures

- Length, structure, content, and delivery of the program
- Length, structure, and diversity of professional experiences incorporated into the program
- Practicum and linkages with schools

2) Teacher education approaches

- Developing content or discipline-based knowledge
- Preparation to teach:
  - o culturally, linguistically, socio-economically diverse learners
  - o ICT
  - o literacy and numeracy
- Developing pedagogical and assessment expertise

3) Measures of entry into teacher education programs

The above mapped characteristics of the programs were then able to be analysed in relation to the survey responses and the graduates (and their principals) perceptions of the graduates' preparedness and effectiveness in the nine key areas of teaching:

- Teaching culturally, linguistically and socio-economically diverse learners
- Design and implementation of the curriculum
- Pedagogy
- Assessment and the provision of feedback and reporting on student learning

- Classroom management
- Collegiality
- Professional engagement with parents/carers and the community
- Professional ethics
- Engagement with ongoing professional learning

In addition, the rich case study data provides opportunity for exploration of these areas in more depth during the early experiences of the graduates when employed as teachers in a range of schools across Queensland and Victoria.

5.2.1 Background

The relationship between teacher education and preparedness for effective teaching is the focus of research question two: What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of schools?

Recent decades have seen a series of interrogations of teacher education and the relationship between specific features of teachers' preservice education and their subsequent demonstration of effectiveness. Questions have increasingly been asked about the extent to which teacher education produces 'quality' beginning teachers and the specific teacher education models which appear to have the greatest positive impact on the quality of graduates.

The related literature to date includes studies and reviews aimed at identifying the dimensions, characteristics or components of effective teacher preparation. In the United States, for example, Darling-Hammond (2006b, p.276) concludes that well-designed teacher education programs have a number of common features, including: a 'vision' which extends across all aspects of coursework and practical experiences; practical experiences that are 'extensive' and aligned with coursework, with both practical and theoretical components evaluated and assessed against robust standards designed to guide knowledge and practice; 'core curriculum' (covering pedagogy, assessment and curriculum) sensitive to learning contexts, socio-cultural realities and informed by understandings of child development; and strategies to support candidates to trouble their value-systems and engage fully with notions of difference. 'Adaptive expertise' and 'reflective practice' are attributes of successful graduates of these programs (Darling-Hammond, p.276). Such programs necessarily embed connection of theory and practice through problem solving of real life practice experiences and are offered within a context typified by enduring commitment to school and university collaboration (see also Council for Accreditation of Educator Preparation, 2013; Darling-Hammond, 2006a; National Research Council, 2010).

In Canada, Kosnik and Beck (2009, p.ix) have identified seven priorities for teacher education:

1. Program planning
2. Pupil assessment
3. Classroom organization and community
4. Inclusive education
5. Subject content and pedagogy
6. Professional identity
7. A vision for teaching

By analysing effective features of teacher education programs in Australia, Canada, and the Netherlands, Korthagen, Loughran and Russell (2006) developed a framework of fundamental principles of student teacher learning and program change in teacher education:

1. 'Learning about teaching involves continuously conflicting and competing demands' (p.1025);
2. 'Learning about teaching requires a view of knowledge as a subject to be created rather than as a created subject' (p.1027);
3. 'Learning about teaching requires a shift in focus from the curriculum to the learner' (p.1029);
4. 'Learning about teaching is enhanced through (student) teacher research' (p.1030);
5. 'Learning about teaching requires an emphasis on those learning to teach working closely with their peers' (p.1032);
6. 'Learning about teaching requires meaningful relationships between schools, universities and student teachers' (p.1034); and
7. 'Learning about teaching is enhanced when the teaching and learning approaches advocated in the program are modelled by the teacher educators in their own practice' (p.1036).

In Australia, standards for the accreditation of teacher education programs in Australia (AITSL, 2011a) inherently frame what it is that AITSL values for effective teacher preparation. A recent review commissioned by the Australian Government Department of Education to support the work of the Teacher Education Ministerial Advisory Group (TEMAG) (Ingvarson et al., 2014), aimed to review evidence-based research and benchmarking of world's best practice teacher education programs against Australia's own programs to:

- identify best practice principles for the design, delivery and assessment of teacher education programs; and
- articulate the features of teacher education programs that most effectively support successful transition to effective practice.

This review indicates that the seven Australian Program Standards (AITSL, 2011a) and the best practice principles for the design, delivery and assessment of teacher education programs based on the review team's international benchmarking and analysis of the relevant literature, have much in common. The report goes on to conclude that:

> The evidence gathered for this review indicates that best practice in Australia teacher education is consistent with best practice internationally. Lack of knowledge about the characteristics of effective teacher education *programs* is not the problem. The challenge is to identify policies and systems that need to be in place to ensure best practice becomes common practice in Australia teacher education programs. (Ingvarson et al., 2014, p.xvi)

However, as noted in 5.1, the claims about teacher education not really delivering on its mandate to prepare effective beginning teachers still abound. Internationally, there is an abundance of research examining the relationship between student outcomes and teachers' gender, socio-economic status (as measured by location of residence), and 'race' based on statistical analysis of department databases, but far fewer examples of empirical research that investigate the relationship between the characteristics of teacher education programs, such as those identified by Darling Hammond and Buchberger, and teacher preparedness and effectiveness. The SETE project attempts this.

5.2.2 Program characteristics

SETE did not seek to identify specific individual programs that were regarded as more effective than another. Rather, it focused on exploring the perceived impact of various program variables drawing on the mapping of all teacher education programs across Australia. The specific characteristics of teacher education programs that were used as independent variables for the analysis of graduate teacher perceptions of preparedness, as reflected in the surveys, are:

- distributed practicum (yes, no)
- block practicum (yes, no)
- internship (yes, no)
- enrolment options: full time or part time mode of study, on campus/off campus
- specialist qualification (yes, no)
- provider & campus location (metropolitan, non-metropolitan)
- duration (FTE years) undergraduate or postgraduate program
- Master's program (yes, no)
- primary or early childhood development focus (yes, no), secondary focus (yes, no).

The teacher education program characteristics were therefore considered alongside graduate's perspectives on their preparedness (as discussed in Section 5.1) and information about the schools in which the graduate teachers were working, including:

- Index of Community Socio-Educational Advantage (ICSEA) value
- percentage of students with language backgrounds other than English
- percentage of students of Aboriginal or Torres Strait Islander origin
- number of first year teachers employed
- school location
- schooling level (primary, secondary, P-12).

Moreover, the project recognises that graduates, like schools are diverse. The data collection allows us to isolate the influence of such factors as:

- age
- gender
- languages spoken at home
- country of birth
- first in family to complete tertiary study
- highest qualification outside of education
- state in which registered as a teacher

In each of the sub-sections that follow we begin with analysis of quantitative data and then build on this by using the quantitative findings as a lens for reflecting upon open-ended responses collected from the surveys and the case studies conducted between 2012 and 2014.

5.2.3 Influence of program characteristics on perceptions of preparedness

Over three quarters of participants agreed that knowledge gained during their teacher education was important and two thirds of participants believed it helped prepare them for their teaching context. As noted in the previous section, graduate teachers reported being

prepared for the school contexts in which they were working. The mean score for preparedness, across the three survey rounds included in the longitudinal sample, was positively skewed. The positive skew was also evident in each individual round (see Appendix 5).

Teachers' personal characteristics, school and teacher education program characteristics, as measured in the surveys, appear to account for little of the variance in overall perceptions of preparedness. Some of the analyses suggest graduate teachers' gender (male, female), prior industry experience (yes, no), language spoken at home (English only, languages other than English), and proportion of Aboriginal or Torres Strait Islander students enrolled in the schools in which graduate teachers work, have a statistically significant association with perceptions of preparedness. Being female, working in a school with smaller numbers of Aboriginal and/or Torres Strait Islander students, speaking a language other than English and having previous industry experience was positively correlated with perceptions of preparedness. While gender effects are quite consistent, the effect size for gender and each of the characteristics found to be statistically significant, however, are generally small (see Appendix 6).

The quantitative data shows no statistically significant differences between self-reported preparedness for:

- graduate teachers with a specialist qualification and those without;
- graduate teachers who completed their teacher education program at a metropolitan campus and those who completed at a non-metropolitan campus; and,
- graduate teachers who completed their studies on campus and those who completed off campus (although those who studied off campus felt slightly less effective).

Though not statistically significant, further findings from longitudinal analysis of the Graduate Teacher Surveys show that graduate teachers who completed their programs on an outer-metro campus or off campus had higher than expected representation in the bottom 25 per cent and lower than expected in the top 25 per cent for preparedness. Those who completed on a metropolitan campus were more highly represented than expected in the top 25 per cent.

Impact of program type and length

In terms of program type, analysis of the longitudinal survey data indicates that the differences for preparedness were not significant, but were near significant ($x^2(3,n=188) = 7.419$, p= .06) for effectiveness. In the top 25 per cent for effectiveness there was higher than expected representation of graduate teachers who completed Master's and Bachelor's level teacher education programs. Respondents who completed Graduate Diplomas were over represented in the bottom 25 per cent. Combined with the case study responses, it became apparent that graduate teachers with Master's and Bachelor's qualifications perceived themselves as more effective than those with Graduate Diploma qualifications. Similarly, the case study data revealed that while a clear majority of graduate teachers reported that they were well prepared by their teacher education program, of those who said they were not, higher proportions had completed a Graduate Diploma than had completed a Master's or Bachelor's degree. In addition, those with Master's degrees were more likely to agree that the knowledge gained through university-based units was important and helped prepare them for their current teaching context, than graduates with Graduate Diplomas.

Analysis of point-in-time data for the Round 2, 3 and 4 Graduate Teacher Surveys indicates that graduates of Master's and Bachelor's degrees perceived themselves as better prepared for teaching and more effective than their colleagues who had completed Graduate Diplomas. Though these differences are relatively small, the consistency of the findings suggests this was a persistent trend.

The point-in-time mapping data showed that whilst a majority of the undergraduate programs were four-year programs, some postgraduate and Master's programs were, at that time, less than two years in length. Several participants in the case studies expressed the belief that their 12-month Graduate Diplomas were too short to prepare them appropriately or to be effective. Some of these, however, also noted that they would not have enrolled in a longer postgraduate program even if it had been on offer. It must be noted though that the requirements for accreditation of teach education programs have changed in recent years so that all postgraduate teacher education programs must now be two-years in length (AITSL, 2011a). The programs that the SETE graduate teacher participants completed would not have been subject to these programs standards in order to be accredited.

Impact of professional experience

Professional experience offers field experience and practicums in preparing preservice teachers for a range of teaching contexts. The mapping process shows considerable variation of practicum processes and structures across the teacher education programs. The interviews with the provider representatives showed a strong commitment of the programs towards school-university partnerships. For instance, some programs provided a range of practicum settings including partnerships with schools or school clusters in remote or international communities including experience-based practicum in rural settings and in Indigenous communities. The differences between programs noted, analyses that linked practicum structure (e.g. block weeks in schools or days-per-week over a semester) to perceptions of preparedness did not reveal significant statistical associations between the variables. This result may in part be attributed to the fact that creation of categorical data for the quantitative analyses veils much of the complexity associated with integration of professional experiences as part of teacher education – that is it does not capture the nuances of the programs.

Several points are important to note. Graduates believed that:

- Skills developed during the practicum were regarded as important (95 per cent agreement)
- Practicum prepared them for their current teaching context (approximately 90 per cent across the survey rounds) irrespective of the ways in which it was structured – days per week or blocks of time in schools but participants reported feeling better prepared if they had a professional experience in a similar type of setting to the school in which they were employed
- Those who completed an internship (this concept was not defined) felt slightly better prepared.

Though not statistically significant, further findings of interest from longitudinal analysis of the Graduate Teacher Surveys include:

- There was a higher than expected[5] representation of those who completed a distributed practicum in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness.
- There was higher than expected representation of those who completed an internship in the top 25 per cent for preparedness and less than expected in the top 25 per cent for effectiveness.

In almost all case study cases 'professional experience' was identified as the site of core learning. This sentiment was equally prolific in the survey responses. As discussed in Section 4, the call for more practical experience in classrooms during teacher education was strong and consistent. For a sizable proportion of project participants (both teachers and principals/school leaders contributing to the surveys and case studies) the call for greater emphasis on practical components was framed as a rejection of theoretical work.

There is evidence from some of the case studies that graduate teachers had secured employment in a school because they had completed a practicum or internship in that school. Some principals did agree that they used internships (and even extended practicums) to look for graduate teachers who would fit into the school.

Interviews with teacher education providers revealed that the commitment towards strengthening professional experience and university-school partnerships is strong. This commitment may go some way to addressing the concerns raised by teachers and principals, though providers also highlighted significant barriers to enhancing their programs such as financial and structural constraints, including the cost of the practicum and placement shortages. Given the importance of the practicum and its capacity to provide significant experiences for preparing graduates to teach in multiple settings, funding and cost-effective measures need to be enhanced to develop stronger partnerships and quality of supervision between schools and universities that takes into account differentiated but complementary roles and responsibilities for the partners. These partnerships are crucial in providing coherent linkages between content, theory and application to strengthen pedagogical strategies for teaching in diverse school settings. In addition, practicum experiences need to offer a variety of diverse school settings with quality placement supervision so as to prepare graduates to engage in the broader educational settings of schools and communities[6].

5.2.4 Suggestions for improving teacher education

Overall, the Graduate Teacher Surveys revealed a positive skew associated with perceptions of preparedness regardless of the school contexts in which the graduate teachers work and the teacher education programs they completed. This suggests that for graduate teachers working in Victoria and Queensland there is value and quality represented in Australia teacher education. Kline and Walker-Gibbs (2015) report that upon completion graduate teachers are equipped with 'a collection of professional learnings, tools and experiences that resonate in a variety of school contexts' (p.81). The message from the Graduate Teacher Surveys is that graduates' teacher education programs prepared them for the school contexts in which they

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[5] Please refer to footnote 4 for information about creation of the top and bottom quartiles. The respondents with scores at the top and bottom of the combined preparedness scale (Round 2, 3 and 4) were isolated and their personal (languages spoken at home, gender, country of birth, first in family, highest qualification outside of education, state registered as a teacher) and ITE program characteristics (mode of study, focus of program, program type, campus location, practicum structure, specialist qualification) were examined. Yates' correction for significance was applied, with significance set at .05. This noted, results between .05 and .1 are worth comment.

[6] These ideas were explored during analysis of the LTEWS mapping data. Pauline Ho was a key contributor to these discussions.

are employed. This noted, the case studies and free-text comments trouble this picture by identifying numerous opportunities for enhancement of teacher education, in particular opportunities for extending professional experience components.

Analysis of open-ended survey responses from graduate teachers making up the longitudinal sample identified the following strengths of teacher education programs:

- High quality university teaching staff
- Practicum experiences
- Small classes/tutorials
- Opportunity for practical application in assessments and class activities
- Theory-practice links
- Working with fellow classmates
- Practical hands-on pedagogy

In most cases, these are not qualities that were able to be used as independent variables for the quantitative analyses. Numerous opportunities to improve teacher education were also documented in the responses from the longitudinal sample. These tended to focus on a perceived need to better prepare graduate teachers for challenges associated with managing classrooms and creating safe and supporting learning environments, and, as detailed earlier, increasing practical components. Graduate teachers responses emphasised:

- Less theory/ more practice
- Apprenticeship versus university
- Importance of the practicum
- More focus on behaviour
- More focus on dealing with difference
- More focus on assessment
- More focus on non-teaching issues

Similarly, the point-in-time responses and case study data showed that graduates believed there was the need for:

- More time in schools (early in a program)
- More engagement with school curriculum and content including senior secondary curriculum
- More university lecturers and staff with recent school experience
- Increased practical assessment
- More explicit feedback on assignments (and less group assessments)
- Greater focus on 'behaviour management'
- More hands on direct learning of ICT
- Longer program duration – programs of 18 months or less duration were regarded as too short (although in the case studies participants often noted that they would not have studied a longer program if the short program was still available)
- More support with diverse learners

Of these, only two recommendations for improvement can be directly linked to program features mapped through the project:

- Length and timing of practicum
- Overall length of teacher education program

This noted, survey and case study data collected in response to other questions identify preparation in the areas of behaviour management, community engagement and teaching culturally, linguistically and socio-economically diverse learners as areas in which there is room for enhancement within teacher education.

Length and timing of practicum

Recommendations relating to length and timing of practicum were interwoven within free text data by a distinction that was frequently made between 'theory' and practice'

The request for more time in schools was a theme that resonated across the open-ended response in the surveys for all four rounds. The request for 'more' practicum was commonly linked to a valuing of 'practical' experience with responses requesting: *'More practical strategies to use in class.'* (Graduate Teacher, Round 2)*. 'Less theory based. I did love learning about the theory, but I have found that when I got into the classroom, I was expected to magically know all these things that I simply did not'* (Graduate Teacher, Round 2)*.* Graduate teachers' and principals' perceptions that there was often a lack of preparation around classroom management were connected to a scarcity of practical experience. This theme also recurred across multiple case studies.

Participants were particularly negative towards programs that did not offer a practicum experience until the second or third year of their study; or where practicum experiences were regarded as 'too short' (although there was no universal agreement on how this was understood).

Further areas for improvement

The key challenges identified by graduate teachers and principals in the surveys and case studies provides additional insight into the aspects of teacher education where there may be potential for enhancement. As noted in section 5.1, classroom management was identified as a particular challenge for which they were not sufficiently prepared. They often reported that they were expected to take full responsibility for their students' learning (including behaviour and attendance) with little or no support from the school administration. Engaging with parents was another common challenge. In noting these challenges, the graduate teachers often acknowledged that these were areas of teaching that could only be learned 'on the job'. Interestingly, where the teachers did feel prepared, this was often because they had engaged in simulated and practical activities during their teacher education.

Out-of-field teaching was an additional challenge identified mainly by secondary teachers. Many were teaching a number of out-of-field subjects for which they reported being ill-prepared.

Many of the recommendations for improvement of teacher education relate to the content of the teacher education program, rather than the specific program features explicitly considered through the survey analysis (such as program length or postgraduate/undergraduate programs). However, there was, once again, strong emphasis

on the value of significant time in schools, and a recurring suggestion that schools represent the 'real' world, while universities are primarily about theory.

5.2.5 Teacher education entry requirements

There has been much debate and discussion about the entrance requirements for teacher education. The analysis of principals' comments about the preparedness of graduate teachers reflects their views of teacher education providers as solely accountable for teacher preparedness. Like the graduate teachers, principals emphasised the importance of 'more' and 'higher quality' practicum. Unlike the teachers, a number encouraged the introduction of additional program selection criteria including aptitude testing and raising ATAR scores. These comments suggest that some principals regard the personal characteristics and attitudes of graduate teachers as key indicators of potential performance and professionalism.

The desktop mapping and interviews with the providers show that teacher education providers use a variety of measures other than ATAR scores for selection of applicants into their undergraduate and postgraduate programs including portfolios, written statements, previous qualifications, work history, interviews and so on, to make decisions about admission into teacher education programs. This is particularly true of postgraduate, 'boutique' and specialist programs. The capacity for a range of selection measures to be utilised by providers has potential implications for further diversifying the profile of preservice teachers (in terms of age, experience and backgrounds) entering the profession. It is well established that diversification of the workforce will better meet the learning needs of students from diverse settings and backgrounds.

5.2.6 Concluding comments

The majority of graduate teacher participants reported feeling effective and prepared, and the majority expressed the belief that they would recommend their teacher education program to others. This offers endorsement to the structures and practices of their teacher education programs including the considerable efforts that are invested in ensuring that the vast majority of programs offer early and sustained opportunities for students to experience schools. This is consistent with literature which has argued that learning to teach takes time and effective teacher education programs provide an extensive and sustained experience-base across different settings of universities, schools and communities to develop strong teaching pedagogical strategies that serve diverse learners effectively (Darling-Hammond, 2006a; Darling-Hammomd, 2006b; Feiman-Nemser, 2001).

The case studies demonstrated that teachers' grow in confidence and self-belief over the three years following their graduation, and that they believe they are effective in their teaching. In addition, they draw upon diverse sources of data to measure their effectiveness. This includes evidence of student achievement. For many of the graduates, however, performance in formal assessment and high stakes tests (such as NAPLAN) were regarded as no more significant than evidence of student engagement, retention and improvement.

However, it is also important to acknowledge that many participants identified areas for improvement in the design and content of teacher education programs. Each of these have implications for teacher education going forward:

- There was a repeated and often passionately articulated belief that in-school components of teacher education programs had the most impact upon preparation and effectiveness;
- Case study data also suggests that having a practicum in a school similar to place of first/early employment impacts positively upon perceptions of preparedness and effectiveness. This is significant given the large number of programs that are based in metropolitan areas, and the number of employment opportunities in regional contexts;
- These beliefs also suggest that many graduate teachers draw an artificial distinction between university and school: and often do not recognise that the in-school components of their program are key parts of an overall teacher education program;
- Although the majority of participants regard themselves as prepared and effective they do not attribute this to the content of their teacher education programs (in terms of curriculum etc.). This raises questions about content, but also about the ability of teacher education programs to make explicit the relationship between content and practice;
- Although the majority of participants regard themselves as prepared and effective they nevertheless identify major areas requiring additional preparation; and
- The majority of teacher educator providers identified 'social justice' as a key feature of their programs; despite this, graduates identified the ability to work effectively with diverse learners as a key issue.

Though all teacher education programs in Australia have to adhere to guidelines for accreditation, the mapping and case study data reflected a diverse range of structures, pathways, approaches and content delivery across programs. It is noteworthy to highlight that teaching is a complex job and that each teacher education program aims to facilitate the kinds of learning that teachers need to best support a variety of learners. From the interviews with providers, it became apparent that although there was broad consistency across programs, some teacher education providers distinguished themselves as having distinctive foci, goals and strategies that seek to meet promote a specific educational philosophy and promote the values of their institution. These efforts are not readily captured in the matching of graduate perceptions of preparedness and program characteristics for quantitative analysis, making inclusion of qualitative methods an important inclusion for this type of research. Indeed, in this project it was through the case studies that researchers were able to find evidence to support Ingvarson, Reid, Buckley, Kleinhenz, Masters and Rowley's (2014) reporting of Linda Darling-Hammond's synthesis well-designed programs as having: coherence; strong core curriculum; extensive, connected clinical experiences; explicit strategies that help preservice teachers confront their beliefs about learning and students and learn about people different from themselves; and inquiry approach; strong school-university partnerships; and performance assessment that requires demonstration of critical skills (p.x).

In summary, reading across the data it is apparent that while perceptions of preparedness were not often able to be causally linked with particular characteristics of teacher education, most of the early career teachers felt as prepared by their teacher education program as they could be; teacher education provided foundational knowledge and skills upon which ongoing learning of teaching in context continues. This was particularly true for graduate teachers who completed a program of two or more years' duration. Practicum experiences in schools were consistently regarded as more important that the coursework components of teacher education and perceptions of preparedness are mediated by context – where there were discrepancies between the perceived goals of professional learning in their teacher education program and the demands of schools, graduate teachers' sense of preparedness was lesser.

Graduates in schools where there were solid support structures, where there was synergy between the graduate's educational philosophy, their teacher education program and that of the school's, were more likely to comment that they were well prepared by their teacher education program. Case studies also revealed schools to be an institutionalising force and demonstrated that within the employment setting graduate teachers started to renounce their positive stories of teacher education.

Preparedness for classroom management, catering for diverse learners, managing workloads, teaching out-of-field and engaging with parents were among the areas that graduate teachers reported feeling less prepared by their teacher education programs. Preparing for classes was identified in the case studies as particularly time consuming and a workload challenge for which they were not initially prepared –workloads were not seen to reflect the novice status of graduate teachers, though by the third year in teaching many of the graduate teachers were keen to take up additional responsibilities.

5.2.7 Opportunities and challenges

There were a number of limitations associated with matching participant responses to the characteristics of the teacher education programs they completed. Namely, programs were continually being appraised and updated and there has been a recent shift in Australia to national program accreditation making the data collection period a time of significant changes. The shift to compulsory two-year programs meant that one year degrees were being enhanced and extended to meet new requirements – a development that created instability when it came to defining key characteristics of programs and reliably matching these to participant experiences. Further, the higher education institution personnel interviewed to assist with validation of the data shared how programs and program processes, structures and delivery are constantly modified as part of continuous program improvement and indicated the range of enhancements underway in response to changing accreditation requirements and shifting paradigms of approaches and beliefs in the broader teacher education landscape. Another key limitation was that information on provider websites did not always give the clear and specific information needed for this project. In the main this is because websites are constructed for marketing purposes. As such there is considerable variation between each provider in terms of what is included or excluded on their institution's websites, making direct comparisons difficult. The dynamic nature of teacher education programs occurs alongside school-level change, with school demographics equally susceptible to socio-political shifts. As a consequence, while participant responses to the surveys and contributions to the case studies could be associated with program characteristics and school demographics, these variables do not hold steady over time. These challenges are outlined in Mayer et al. (February 2013).

Despite the limitations, in the context of the SETE project the identification of the key characteristics of programs enabled exploration of associations between graduate teacher and principal perceptions of preparedness and effectiveness, school demographics and the programs teachers completed. Specifically, the key characteristics were used as independent variables in analysis of: the Graduate Teacher Surveys, both the point-in-time snapshots and longitudinal datasets; Principal surveys in relation to employment and retention data, and perceptions of performance and effectiveness; and analysis of case study data in that the knowledge generated through the mapping enables researchers to frame case study questions to interrogate emerging trends. The information obtained from the program mapping and interviews with HEI personnel serve as a point-in-time evidence base for the understanding of teacher education characteristics and can be used to measure the

associations between these variables and the teaching and learning of the teacher education graduates in the early years of their professional career.

Buchberger's (1998, 2000) overview of teacher education across Europe, as with Louden et al's (2010) review of Australian programs, and the work of Holyoake (1993) and Snoek and Žogla (2009), found that a large number of systems and models of teacher education exist and that the terminology of teacher education lacks consistency across different cultural contexts. This was reflected in the SETE analyses, specifically in relation to understandings of 'internship', 'community engagement' and even 'supervised practicum'. Definitional creep is problematic for the quantitative components of the study; fortunately, the case studies provided opportunity for clarification, though even in the interview context it was possible for participants and researchers to interpret terms differently, depending on their previous experience.

It is increasingly apparent that we need to rethink our approach to documenting teacher education structures. Research endeavours to-date have emphasised quantification of characteristics, so that what we have as a result are complex design features forced into narrow categories that do not necessarily appropriately reflect the nuances of teacher education programs. This approach cannot capture the complexity of teacher education program design, content and delivery and cannot easily respond and evolve according to student, school and policy drivers.

Zeichner (1999) claimed that teacher education research has had very little influence on policy making about teacher education. Sleeter (2013) argues that this is at least in part a consequence of teacher educators not providing policy makers with the data they most value. Sleeter's criteria for 'impactful' research can be met by coupling information about key characteristics of teacher education programs with large-scale data sets. Darling-Hammond (2006b) notes

> ... if the nation's classrooms are to be filled with teachers who can teach ambitious skills to all learners, the solution must lie in large part with strong, universal teacher education (p.5).

Through this response to research questions it seems appropriate to argue that strong, universal teacher education is best delivered and constructed in flexible and diverse ways in recognition that student outcomes are contextualised, and that school contexts are diverse.

5.3 How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

This section of the report discusses findings related to the career progression of graduate teachers – their employment pathways, possible attrition, and retention strategies used by schools. Career pathways of graduate teachers are influenced by multiple factors. These factors include professional capabilities that graduate teachers have developed as a result of teacher education, conditions of the current job market and employment opportunities – in particular workplace conditions. Furthermore, an understanding of graduate teachers' transition from university education to workplaces and subsequent employment pathways needs to take into account different stages in their life program and reasons for residential and/or workplace mobility that are often associated with age, single living or child-and-family

oriented lifestyles, employment possibilities in particular locations, housing market as well as whether they perform or do not perform traditional gendered or social class identities.

The array of educational, economic and socio-cultural factors poses a significant challenge for a comprehensive representation of graduate teacher career progression in Australia, particularly in attempting to link the effectiveness of teacher education and the employability and retention of graduate teachers in schools. Partly, this challenge was recognised in the *Australia's Teachers: Australia's Future* report (Committee for the Review of Teaching and Teacher Education, 2003). Written a decade ago, the report argued that more comprehensive data '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).

Staff in Australia's Schools (SiAS) reports have provided a descriptive representation of the teacher workforce that can assist in understanding changes in the workforce and, in turn, in planning for the future (McKenzie et al., 2008, McKenzie et al., 2011). SETE data however provide much needed information on early career progression, employment, mobility and retention of beginning teachers. Unlike SiAS reports, SETE offers complementary and valuable qualitative data from the open-ended responses and case studies in schools.

5.3.1 What does the demographic and teacher education profile of graduate teacher tell us?

Any inquiry into the employment pathways, mobility and retention of graduate teachers should start with establishing their demographic and teacher education profiles. This is essential for understanding both their decisions to enter the teaching workforce and the impact of preservice education and experiences on particular employment pathways sought by them (Boyd et al., 2009; Ronfeldt et al., 2013). Attraction to teaching, for example, is closely linked to the motives of choosing this career. The SETE project data show that these motives are varied and complex, ranging from idealistic to more practical ones. The highest scoring responses of graduated teachers were 'wanted to make a difference', 'always wanted to teach/work with children', and 'wanted to work in an area of specialisation or interest' (see Mayer, Allard, Bates, Dixon, Doecke, Hodder, Kline, Kostogriz, Rowan, Walker-Gibbs & White, 2014). These motives reflect a combination of non-monetary preferences, including the attraction associated with the impact of teaching, as a social profession, on people's lives as well as with the professional fulfillment that teaching can provide.

Nonetheless problems with attraction to teaching persist. This is partly because teaching as a profession 'suffers a status anomaly' (Ashiedu & Scott-Ladd, 2012, p. 18) where teacher effectiveness and the complexity of their work are often underestimated or misrecognized by the public and politicians. In addition, the old perception of teaching as a semi-professional practice that is of a lesser social standing as compared, for example, to law or medicine has been persistent over the years (see Lortie, 2002). Partly, this perception is based on the old view of teaching as 'itinerant work taken up by men on their way to a 'real' profession and by women before marrying or having children' (Johnson & Birkeland, 2003, p. 583).

A more recent perception of teaching as a career has emerged over the last three decades due to the ongoing professionalization of teaching and teacher education and to the changing conditions of the job market. Teaching has become perceived increasingly as a secure job and a first career choice rather than just a fall back career. This is particularly relevant to those who are motivated by the *social utility* value of teaching such as shaping children's future, enhancing social equity, making social contribution and having passion for working with

children (Watt & Richardson, 2008). Job related motivational factors, however, refer to the *economic utility* of various professions such as salaries, social status, demands, etc. People who prioritize the economic utility factors are either less motivated to pursue teaching as a career or tend to change professions. Indeed, many from the today's generation of teachers expect to have more than one career (Margolis, 2008). This diversity of motivational factors can be linked to the demographic composition of the beginning teaching workforce detailed in Section 4.2. The demographic and educational characteristics of beginning teachers provide no guarantee that they will stay in teaching over the course of their career or at least for a longer-term period. Job market today offers many employment opportunities, providing access to high pay and status occupations, well-equipped work settings, opportunities for rapid career advancement, and so on. In *Best Practice Teacher Education Programs and Australia's Own Programs* (Ingvarson et al., 2014) it is reported that attrition rates are as high as 20 per cent for teachers in their first five years, and that this occurs despite recent improvements to induction and mentoring. In the final Graduate Teacher Survey, 30 per cent of respondents indicated that they did not see themselves working in schools in three years' time.

The gender, ethnic and social composition of graduate teachers in this project adds some additional complexity to studying their employment pathways, mobility and attrition. The sample has a high proportion of females (78 per cent) and this composition is consistent across four rounds of surveys. More females tend to work as primary school teachers. Continued perceptions of teaching as an 'appropriate' career for women remains - that is, it is reasonably well paid, with holidays and hours that allow a combination of responsibilities in work and family contexts (Acker, 1994). The number of men, teaching in primary schools in particular, is declining (Richardson & Watt, 2006). Yet, the analysis of SETE career progression data shows that employment and career chances of female and male graduate teachers diverge. Male graduates were more likely to be employed in full time positions and saw themselves in leadership role in three years' time, while female graduates were more likely to be employed in part-time positions and saw themselves teaching or in other education related occupations in the future. Across SETE survey rounds there was an equalisation between genders on seeing themselves staying in a school teaching career and some increase in females seeing themselves moving to 'other' occupations.

The cultural-linguistic backgrounds of beginning teachers in the SETE project remained largely stable with the overwhelming majority of teachers (more than 80 per cent) coming from English-speaking backgrounds. Australian Aboriginal and/or Torres Strait Islander teachers in the SETE sample made up a less than one per cent across all four rounds. This was slightly less than 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 was 2.5 per cent (ABS, 2011b). According to the AITSL report (2013), teacher education programs have a slightly higher proportion of Australian Aboriginal and Torres Strait Islander students (2 per cent) when compared with the percentage across all fields of higher education (1 per cent), but this representation of Indigenous students in teacher education does not yet match the proportion of Indigenous school students (4.9 per cent) (ABS, 2011c).

In terms of the socio-economic backgrounds of graduate teachers, teacher education degrees attract a greater proportion of students from a lower socio-economic status and/or from regional areas to teaching programs than to other tertiary education degrees (Connell, 1985; Lortie, 1975). These are arguably those students who are 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. Recognizing this trend, the AITSL (2013) report highlighted that 'the diversity of entrants to teacher education programs is a feature of the teacher education landscape, providing schools with qualified teachers from a range of backgrounds and histories' (p.8). Nonetheless, it is important to notice that the 'first in family' graduates in the longitudinal sample were less likely than other graduates to be represented in the top 25 per cent of survey respondents for preparedness for teaching, but their perception of effectiveness was higher than of their preparedness, which was indicative of their teaching experiences in schools. This does not mean that coming from lower socio-economic status and/or from regional areas to teaching programs rather than to other tertiary education degrees means that they will match the socio economic range of school populations.

The teacher education backgrounds of graduates were another key factor in understanding their pathways to teaching profession, as well as their career progression and mobility. Due to teacher education being under scrutiny in this country and elsewhere, there is a growing body of literature that investigates the impact of teacher education on teacher employment, effectiveness and mobility (Boyd et al., 2009; Mihaly et al., 2013; Ronfeldt et al., 2013). SETE provides a quantitative descriptive picture of teacher education backgrounds and employment pathways of beginning teachers. Specifically we provided longitudinal data that allowed us to consider what types of programs contributed to better employment opportunities and initial teaching experiences in diverse settings. For example, graduates of Bachelor's degrees were more likely to be employed in full time permanent positions. Graduates of Graduate Diplomas were less likely to be full time permanent and more likely to be part time permanent or casual. In the first three years of employment, graduate teachers were more likely to move to full time or part time permanent positions and less likely to be employed on a casual basis (refer to Section 4.3.2 and 4.4.3 for more detail).

Employment pathways as ways of 'utilizing' graduate teachers

Employment destinations of graduate teachers reflected the general job market demands across states and school sectors during the period 2012-2014. Victoria had the larger percentage of employed graduate teachers than Queensland, which is both consistent with the demands of these states and consistent with the proportions of graduate teachers registered in these jurisdictions. Government schools across Victoria and Queensland were by far the largest employers of graduate students, followed by Catholic and Independent school sectors. Primary schools employed more of the graduate teacher respondents than secondary schools. Combined P-12 schools and special education settings have employed up to one-fifth of graduate teachers over the three years. Metropolitan schools had the largest demand and approximately 65 per cent of graduate teachers who were in the teaching workforce worked in major cities. This proportion of graduate respondents employed in schools located in major cities remained fairly constant, as did those in inner regional areas (slightly over 20 per cent). Teachers employed in outer regional, remote and very remote schools constituted approximately 12 per cent of all respondents with a teaching position.

The SETE data, surveys and case studies, showed that many employed graduate teachers were venturing further away from densely populated areas and the location of their teacher education. Graduate teachers with specialisation in mathematics or special education were more likely to be working in their specialist area. This trend was expected as these subject areas have been identified as the areas of high demand in this country and also internationally (Department of Education and Training, 2015a, 2015b; Organisation for Economic Co-operation and Development (OECD), 2011). The shortages of mathematics teachers have been

driven by broader workforce demands in servicing 'knowledge economies' and, in turn, by a variety of opportunities present for graduates with this educational capital. At the same time, this situation reduced the probability for mathematics majors to pursue teaching degrees and careers (cf., Ingersoll & Perda, 2010; Bacolod, 2007). Employment demands were high in the areas of special needs, languages other than English, and technology. The data showed 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 third or fourth year after graduation. Refer to section 4.1 for more detail.

School principals were asked in their surveys if they liked to employ graduate teachers. In all three rounds of principal surveys, well over 75 per cent of principals agreed or strongly agreed that they liked to employ first year graduate teachers. Between 13 and 17 per cent neither agreed nor disagreed, and between one and four per cent disagreed or strongly disagreed. School principals wanted to offer graduate teachers opportunities to consolidate their knowledge, recognised the enthusiasm that graduates bring, and were keen to ensure their schools had a balanced staffing profile. The financial implications of employing graduate teachers – that is, the fact that they cost less – was another aspect of their appeal.

5.3.2 Teacher mobility and retention

In the literature on teacher mobility, the general term 'turnover' is used as an umbrella term to describe 'the departure of teachers from their teaching jobs' (Ingersoll, 2001, p. 500). Some researchers often use the term attrition to refer to the phenomenon of teachers leaving the profession, and the term migration to describe the transfer of teachers from one school to another. In this regard, teachers may be leaving teaching for good (attrition) or they may be moving across schools (migration). However, from the perspective of their school, this distinction matters little, since the school must deal with the loss regardless of whether the teacher moves to another school or out of the profession altogether (Ingersoll, 2001). Hence, teacher mobility can be juxtaposed with a sedentary view of teaching pathways and many researchers label those who continue to teach in the same school from one year to the next 'stayers,' those who are mobile 'movers,' and those who leave teaching altogether 'leavers' (see Johnson & Birkeland, 2003; Johnson & the Project on the Next Generation of Teachers., 2004; Luekens et al., 2004).

In relation to early career teachers, Cochran-Smith (2004, p.846) argues 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 considered desirable, (e.g., 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 postgraduate 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 concerns, 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; Ingersoll & Smith, 2004).

Furthermore, in contrast to previous generations of teachers who tended to teach until retirement, today's teachers expect to have more than one career (Margolis, 2008; Peske, Liu, Johnson, Kauffman, & Kardos, 2001). The international teaching workforce data confirm this assertion, demonstrating that teachers are increasingly moving between schools or leaving

teaching all together in large numbers after relatively short periods of service (Ingersoll, 2001; 2003). The most likely to leave or move are teachers in under-resourced or hard-to-staff schools (Cook & Engel, 2006; Lankford, Loeb, & Wyckoff, 2002; Schaap & Goodman, 2001). The inability of schools to maintain a stable teaching force over significant periods of time is cited as a major impediment for creating and maintaining teacher quality and school effectiveness (e.g., Ingersoll, 2001; 2003). 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 (although still significant) issue for governments.

International research presents teacher turnover as a complex phenomenon that has been identified as either a problem for workforce planning and resources or as an indicator of the relatively low quality of schooling and teacher morale. According to the *National Commission on Teaching and America's Future* (2003), 33% of all new teachers who enter the system leave within the first three years and around 50% leave within five years. Exacerbating this problem further is the fact that many of those who stay in teaching move frequently between schools looking for improved working conditions (e.g., 8.1% of the teachers moved from their public school and 5.9% moved from their private school) (Marvel et al., 2007, p. 7). Urban public schools in the US, those that often cater for culturally diverse and underprivileged students and that are struggling to attract high quality teachers, are also the schools that are affected by teacher attrition and mobility. Also illustrative of the challenging conditions in the US public urban schools is a very low motivation of teachers to work in those schools. This refers, in particular, to the more able and educated teachers who have better prospects in finding alternative workplace conditions (e.g., Robertson, Keith, & Page, 1983; Henke, Chen & Geis, 2000).

As a result of turnover, according to Ingersoll (2002), teacher shortages are becoming increasingly a global problem. In the UK, teacher shortage is reported as a national crisis and the situation is worsening in Sweden, Germany and New Zealand (Herbert & Ramsay, 2004; Mackenzie & Santiago, 2005). Policymakers usually respond to teacher shortages by increasing the supply of teachers. Some researchers are sceptical, however, that this measure can improve the situation. In their view, recruiting enough new teachers has not been the main problem, but it has rather been the tendency of teachers to leave quickly (Ingersoll, 2001). Partly, this problem can be addressed through teacher retention strategies and, partly, through understanding the nature of and reasons for workforce mobility.

Previous large-scale studies into the teaching workforce in Australia have captured some key mobility patterns relevant to the SETE 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).

Main SETE findings on teacher mobility reveal that:

- Most graduate teachers stayed to teach in the state/territories in which they completed their teacher preparation. For example, most of the 2011 graduates of teacher education programs in Victoria and Queensland were employed in those states 2012, and at the beginning of 2013, about 85 per cent of 2011 graduate teachers in Victoria and Queensland had been teaching there for more than one year.
- Of the Round 3 respondents, 29 per cent taught in schools in areas where they lived prior to entering the university program. And about 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 2011 graduates 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.

Focusing on the 2011 graduate teachers only, SETE data show that for those graduates with teaching positions in Round 1 in Victoria all of them were still in that same state or territory in Round 2. 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. The movement of graduates from time two (Round 2) to time three (Round 3) across states and territories shows that there was less than a four per cent change from Round 2 to Round 3 for graduate teachers in Victoria. 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.

In more general terms, the analysis of the qualitative data (both surveys and case study interviews) demonstrates that the main reason for teacher mobility revealed in this study, was better employment opportunities. Most of the graduate teachers who moved were employed on short-term contracts or in casual relief positions and relocated to different schools, systems or geographic areas as soon as they secured full-time positions. They moved for more secure jobs and, at least initially, applied for positions in order to have more stable employment, rather than because they were attracted to particular educational contexts. The data also show that the major cause of graduate teacher mobility and turnover was that a majority of early career teachers remained on short-term contracts. 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. Job insecurity also had the consequence of driving competitive behaviours amongst graduates that was as odds with professionalism and supporting student learning.

From the interviews and survey free-text responses, both graduate teachers and principals attribute the difficulty in finding employment to the perceived oversupply of teachers and the lack of full-time jobs. Contributing factors in this regard are retirement delays, an 'out of service' pool of teachers, public sector cutbacks (e.g., freezing salaries), 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. A consequence of this, evident in the case studies, was that graduate teachers perceived themselves to be expendable. Casual and contract employment was also associated with reduced access to professional learning opportunities and had negative impacts on development of professional identity and practice.

The case study interview and responses to open-ended questions in the survey illustrate four types of mobility.
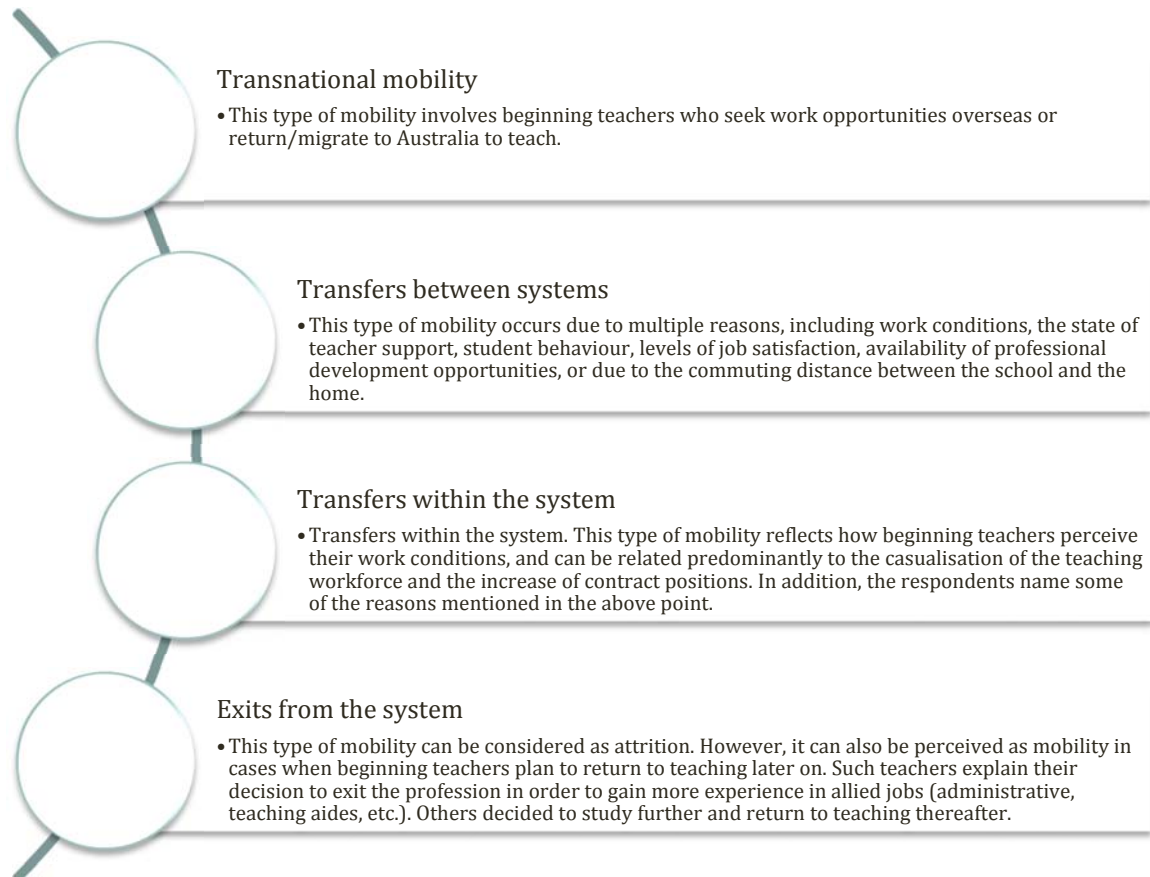
Transnational mobility
- This type of mobility involves beginning teachers who seek work opportunities overseas or return/migrate to Australia to teach.

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
- Transfers within the system. This type of mobility reflects how beginning teachers perceive their work conditions, and can be related predominantly to the casualisation 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.

Figure 5.2: Types of teacher mobility

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 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.

Open-ended comments taken from each of the survey rounds show the contextual variation that occurs across states:

- '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, Round 3)
- 'Have had to re-apply for a position every year since 2010. Would love a permanent spot at the school, as I adore the children, parents, staff etc.' (Graduate teacher, Round 4)
- 'The rural location of positions, which I am not able to pursue'. (Graduate teacher, Round 2)
- 'Availability of HPE positions' (Graduate teacher, Round 2)

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, illustrating the four types of early career teacher mobility based on the analysis of findings.

5.3.3 Why do beginning teachers leave?

There is a wide body of literature on why teachers stay or leave teaching during their first years in teaching. Lortie (1975) and Cohn and Kottkamp (1993) showed the persistent and important role of intrinsic rewards for teachers' satisfaction. For example, in both of these studies more than 85per cent of the teachers who were surveyed felt rewarded when they ''knew that [they] have 'reached' students and they have learned'' (Lortie, 1975, p. 105). Many scholars contend that school environment and culture are a major factor in shaping teachers' decision as well. For example, Johnson and The Project on the Next Generation of Teachers (2004) argue that teachers are looking for a hospitable, supportive, collaborative, challenging and stimulating work environment, where they can grow, assume responsibility as leaders and feel respected (e.g., Henke, Chen & Geis, 2000).

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). Workplace conditions are therefore a crucial factor in

shaping their perceptions of professional practice and in decision-making to stay in the profession or to leave.

The responses to open-ended questions in the Graduate Teacher Surveys, Round 2, 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. While the vast majority of responses to the question 'Are you satisfied with the conditions of your employment?' in the initial phase of the SETE project were in the affirmative, 20 per cent of participating teachers wanted to change their conditions of employment. Overwhelmingly, the most common reply focused on some aspect of job security. A typical reply was: 'I would prefer to be on an ongoing position rather than contract, for increased job security.' (Graduate teacher, Round 2)

The second most frequently named area in need of change was 'pay', e.g., 'Pay is far too low to go into teaching full time. I earn more doing what I do now and have done for 10 years.' (Graduate teacher, Round 2) Issues of pay were often tied either to the long hours of work or difficulties of the job that many commented on, e.g. 'Teachers are working far too hard for the minimal salaries they are on.' (Graduate teacher, Round 2) In conjunction with the pay issue, a few argued that their qualifications or prior career experience were deserving of a higher starting salary (e.g., recognition of prior experiences and level of education). 'With a combined 10 years of tertiary education (BSc, BForSc, PhD and GradDipEd) with 10 years (4 as part of a PhD) experience in science research/teaching within the tertiary sector, my remuneration is the same as graduate with no experience and 4 years tertiary education. Given teaching is part of the education sector I believe people's education levels should at least be recognized in some way to encourage and support talented graduates.' (Graduate teacher, Round 2)

Much more specifically, one graduate teacher commented: '…being placed in a mining region on a first year teacher's wage and minimal teacher housing available, I have found living expenses to be difficult to handle. I don't believe teachers are adequately supported financially in the central regions of Queensland.' (Graduate teacher, Round 2) Others elaborated on the demands of the job. Specific conditions of work, including class sizes, stress levels and the lack of work-life balance were all identified as areas that graduates would like to alter. For example: 'I get paid to work 37.5 hours a week and I actually need to work about 60 hours a week to get the job done. I'd like to change that so that I could have more time to enjoy life.' (Graduate teacher, Round 2)

Another area of concern named, but much less often, was the lack of support provided from leadership teams or from mentors. For example: 'I have received no support from management or superior staff in planning and implementation of learning and teaching programs. Conditions agreed to at the acceptance of employment vastly changed once employed. There is too much of an expectation of weekend and night work without any compensation. I have been taking on roles and responsibilities way above my level of experience and pay scale.' (Graduate teacher, Round 2) Graduate teachers indicated that school culture is determined largely by the principal and that this in turn affected their own sense of professional identity.

Later in the study, there was a slight drop in the percentage of teachers who stated that they were satisfied with their conditions (78.5 per cent in Round 3 as compared to 80 per cent of

those who responded in Round 2). Of the total of Round 3 respondents, 21.5 per cent were dissatisfied, stating the following main reasons:

- the lack of ongoing or permanent employment (51 per cent comments fitted in this category);
- the 'conditions' of work, in particular, inadequate pay, long hours, lack of collegiality, lack of recognition for the additional duties undertaken (31 per cent of comments); and
- the perceived inadequacies of leadership or mentoring in the school (8.6 per cent of comments).

The lack of ongoing employment remained a major concern for the majority of those who responded, summed up in the following comment that, with slight variations, was repeated often:

> Six-month contracts are not conducive to getting the best from beginning teachers, the stress created from this detracts from energy you can put into the job. Your long range planning for your job is difficult to find under the burden of 6-month contracts and your acceptance by other teachers is reduced. Now that I am on my third in a row I can see that the school would extend these or make me permanent if they could but the nagging doubt is always there underneath that I may not be renewed next semester. I am a mature person with family and financial commitments - this worries me and I don't think that the situation sees me produce my best teaching practice. (Graduate teacher, Round 3)

At the final stage of the project, the percentage of those who expressed satisfaction or dissatisfaction with their current employment status remained very consistent. As in the previous surveys, in Round 4, slightly more than 21 per cent of the respondents reported that they were dissatisfied with the conditions of their employment. Like the previous rounds, the most frequently named area of concern was the type of employment experienced by these teachers, many of whom graduated in 2010 and 2011. Almost 50 per cent of responses, focused on the lack of permanent or ongoing positions. Some of the responses were pithy: 'I am still on a contract going into my 4th year and I would like to be made ongoing' (Graduate teacher, Round 4), or 'Have had to re-apply for a position every year since 2010. Would love a permanent spot at the school, as I adore the children, parents, staff etc.' (Graduate teacher, Round 4)

'Workload' and 'pay' were the next most commonly named areas of their employment that Round 4 teacher respondents would like to have seen changed. While not all respondents used these explicit terms, when the two categories of responses were taken together, they added up to almost 30 per cent and encompassed a very large list of issues that respondents saw as in need of change. The lack of adequate pay for the hours or conditions worked was frequently linked to other issues, including type of employment, benefits or lack of access to professional development. For example, a number of those on contracts noted that 'unpaid overtime' is required to keep up with the amount of work. Others coupled the pay scale to changing conditions of work: e.g. 'Pay is too low for hours and responsibilities expected - also the new legislation around performance based pay may drive me and others from the profession due to breakdown of collegiality and morale.' (Graduate teacher, Round 4) Still others sought 'increased pay for administration duties. Pay is not increased with increased responsibility,' (Graduate teacher, Round 4) or noted that 'No access to paid professional

development and lack of support with VIT registration are unacceptable. The workplace I am currently in does not treat teachers fairly or offer support.' (Graduate teacher, Round 4)

The perceived lack of support or clear vision from leadership teams emerged as of growing concern among those who were dissatisfied with their employment. 'The lack of support from leadership when dealing with student and staff issues' (Graduate teacher, Round 4) or ' Support for graduate teachers' (Graduate teacher, Round 4), to more explicit comments that provide glimpses into serious concerns, e.g. 'Workplace bullying' and 'Better, safer conditions' and '…the violence from students that I am expected to tolerate'. (Graduate teachers, Round 4)

The desire to change their location was mentioned in Round 4 more often than the earlier rounds; perhaps the delight in gaining ongoing employment by accepting positions in remote locations has begun to diminish after several years. One lengthy comment encapsulates a number of others:

> Underpaid, long hours, in a remote town far from home. Extremely expensive, far from family and friends, long hours due to shortage of staff or school funds to pay casual staff. Working consistently on selling the school to keep up student numbers, role diversity is ridiculous, hours exhausting. Community is always is your personal space due to such a small town....no retreat from work as high needs, low social economic community always see school staff as a social welfare. Exhausting! Do love the work but exhausting. It is no wonder that many ppl leave here after a few years. (Graduate teacher, Round 4)

Finally, a number of respondents took the opportunity of the survey to reflect on the wider, cultural perceptions and change regarding the profession. The following comment of one respondent serves to sum up the major issues highlighted in the comments of Round 4 and allows a teacher to have the final say:

> It saddens me that a culture has developed that puts pressure on teachers to do many hours of unpaid overtime and use personal funds to buy equipment for school. Performance reviews contribute to an attitude of suspicion that teachers are not working hard enough. More contracts also contribute to a lack of stability in the living circumstances of an early career teacher. In my third year of teaching I am still unable to apply for a mortgage because I am officially on a contract ending in 9 months time. Nothing other than a complete overhaul of the system and a campaign to improve attitudes from a government-led position, will achieve this. I'm not holding out hope.' (Graduate Teacher, Round 4)

In sum, 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 and demanding workplace conditions. 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 Australia 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.

Furthermore, research suggests that teachers' decisions to remain in their schools and in teaching are influenced by a combination of the intrinsic and extrinsic rewards that they receive in their work. Intrinsic rewards include such things as their capacity to make a difference and effectively contribute to students' learning, the enjoyment of teaching and working with children, developing new teaching and leadership skills, etc. In addition to these intrinsic and extrinsic rewards, there are certain conditions of work that make the everyday experience of teaching enjoyable or not. In some situations, the negative conditions may outweigh the positive, leading teachers to leave their schools or teaching. Our research has shown that there are important links between teachers' sense of being effective, their satisfaction with their work and retention. An unrealistically demanding workload, a lack of support, or isolation from one's peers may compromise teachers' opportunity to teach effectively and, thus, succeed with students. As a result, satisfaction decreases, possibly leading teacher attrition or mobility. Therefore, broadly speaking, teacher retention can be affected positively or negatively by factors that influence a teacher's sense of effectiveness in the classroom and satisfaction with workplace conditions.

5.3.4 Retaining beginning teachers

The SETE research demonstrates that when schools develop and maintain support systems for beginning teachers that include serious mentoring and induction that are oriented on improving teachers' practice, teachers are more likely to stay in their school and are less likely to move to other schools or leave teaching (Ingersoll & Smith, 2003). There is also a wide consensus among educators that strong, vibrant, professional communities of teachers and administration support are essential for beginning teachers to develop and thrive (e.g., Johnson & The Project on the Next Generation of Teachers, 2004; Louis, Kruse, & Marks, 1996; Tamir, 2009).

6. Concluding comments

Government inquiries into teacher education in Australia have recommended large-scale research projects that investigate the value of teacher education (e.g. Education and Training Committee, 2005, p.66-67; Productivity Commission, 2012). However, reviews of teacher education research in Australia have concluded that it is characterised by isolated small-scale investigations (e.g., Murray, Nuttall & Mitchell, 2008). It is in this context that SETE was designed, seeking to provide an evidence base for teacher education policy and practice by investigating:

1. How well equipped are graduates to meet the requirements of the diverse settings in which they are employed?

2. What characteristics of teacher education programs are most effective in preparing teachers to work in a variety of school settings?

3. How does the teacher education program attended impact on graduate employment destination, pathways and retention within the profession?

6.1 The contribution of SETE

SETE focuses on questions of teacher preparedness and education within a wider discussion around being and becoming a teacher (Britzman, 2003). As this report details, the graduate

teacher respondents reported feeling prepared by their teacher education program and effective as beginning teachers across nine key areas of teaching:

- Teaching culturally, linguistically and socio-economically diverse learners
- Design and implementation of the curriculum
- Pedagogy
- Assessment and the provision of feedback and reporting on student learning
- Classroom management
- Collegiality
- Professional engagement with parents/carers and the community
- Professional ethics
- Engagement with ongoing professional learning

However, they reported feeling more effective than they had been prepared by their teacher education programs in all of the areas. In addition, their principals reported that they felt the new teachers were more effective than they judged themselves.

But while the graduate teachers did feel generally well prepared by their teacher education program and effective as beginning teachers, they reported feeling better prepared in the areas of pedagogy, professional ethics and engagement with ongoing professional learning, and less well prepared in the areas of classroom management, professional engagement with parents/carers and the community, assessment and the provision of feedback and reporting on student learning, and teaching culturally, linguistically and socio-economically diverse learners.

In terms of effectiveness as beginning teachers, they judged themselves as more effective as beginning teachers in the areas of professional ethics and engagement with ongoing professional learning but less effective in the areas of teaching culturally, linguistically and socio-economically diverse learners, design and implementation of the curriculum, pedagogy, and assessment and the provision of feedback and reporting on student learning. A challenge for beginning teachers, and this is identified particularly strongly in the case studies, is a relational one - relations with students and with the adult communities (including colleagues and parents/ carers) with which they must engage.

While both graduate teachers and principals argued that the preparation provided by teacher education programs could have been enhanced by more time spent in schools, more time on strategies for teaching and less theory, both articulated a view that teacher education provides foundational knowledge and tools from which the learning teaching journey continues along with increasing effectiveness as a teacher. In this way, initial teacher education is viewed as the first part of a professional continuum of doing and learning and growing expertise, rather than a distinct preparatory phase (Ward, Grudnoff, Brooker, & Simpson, 2013).

The two dynamic factors found to have the greatest bearing upon perceptions of preparedness and perceptions of effectiveness were employment and the school workplace context. A key message is that those who were employed on an ongoing, permanent basis felt that they were better prepared and more effective in comparison to those employed in casual/contract positions. Moreover, their perceptions were mediated by their school workplace context with moderations framed as a result of leadership in the school, alignments of school philosophies, and various support structures for new teachers.

Teacher education aims to introduce pre-service teachers to the complexity of teaching and to equip them with strategies to negotiate their identity in various teaching contexts (Cooper & He, 2013). As identity continually shifts and changes in response to context, so too do notions of effectiveness. These vary over time according to school context and career phase as well as personal life phase. Literature suggests that perceptions of effective teaching vary according to student socio-economic status and ability, grade level, or teachers' objectives (for example, Creemers & Kyriakidēs, 2008). Executing theory into practice involves merging professional knowledge and personal knowledge together to create effective teaching approaches within various different contexts. This delicate balancing act or constant shifting for novice teachers can be rather daunting (Cooper & He, 2013), particularly when the need to cultivate collective expertise and provide other types of ongoing support and professional development for teachers is particularly strong in high-needs schools, which often have a disproportionate number of beginning teachers (Berry et al., 2010).

However, SETE is both adding to and challenging some of the current literature and related preconceptions of what it means to be prepared and effective as a beginning teacher. First, the project has identified some limitations on teacher preparation and effectiveness.

1. Learning teaching in teacher education is often separated from learning teaching and teaching practice in schools.
2. A linear progression of teacher educating is often assumed. First, one is prepared and then effectiveness comes afterwards.
3. Some graduates seem to attribute their preparedness and effectiveness to their individual capacities and capabilities. This includes narratives of resilience, of hardening up and survival, especially where beginning teachers are employed in difficult contexts.
4. Insufficient attention is given to the role of relationships in learning teaching and doing teaching, including relationships with students and with colleagues and other members of school communities.
5. The types of employment contracts have significant impact on effectiveness. Moreover, uncertainty of employment conditions results in teacher behaviours that are not always linked to student learning and that have more to do with securing more stable employment.
6. Graduate teachers are isolated within school contexts as a result of limited voice (contracts etc.) and the loss of the theoretical (research-informed) conversation.

Contrary to conventional wisdom and some current research, SETE highlights a continuum of teacher education and learning teaching as one that blurs the boundaries between *being prepared* and *being effective*. This analysis urges us to re-think teacher education policy, structures and practice to more adequately prepare and support growing professional knowledge and professional practice that challenges the linear notion of first one is prepared and then one is effective. Other authors have explored this dimension. For example, Green (2009) has argued the need for 'a cumulative program of connected multi-disciplinary and multi-focused work in teacher education that concerns itself with issues of practice and policy, curriculum and pedagogy across the continuum of preparatory, transitional, and continuing teacher education, and involves both universities and the profession'. This notion of 'Initial -> Transitional -> Continuing' depicts teacher education as a journey from novice to expert. It is mediated by the local context (universities and schools) as well as the broader political context and by local conditions of work. It builds on pre-existing knowledge and develops as a result of accessing a knowledge base for teaching and practice-based inquiry.

However, a lack of connection between teacher education in universities and teacher education and teaching practice in schools is particularly highlighted by SETE and is popularised as a theory-practice divide and a disconnect between learning teaching and doing teaching. These play out as dichotomies such as:

- learning teaching - doing teaching
- universities - schools
- school knowledge - research knowledge
- theory - practice
- supply - demand
- preparation - employment
- preservice - in-service
- teachers - teacher educators

These are just some of the dichotomies evident in the SETE data which position players in the activity of preparing teachers in oppositional ways, usually in accountability terms resulting in blame of the other for not contributing to the reality as well as perceptions of teacher quality. Like the recent British inquiry into the role of research in teacher education which 'demands an end to the false dichotomy between higher education and school-based approaches to initial teacher education' (British Educational Research Association (BERA), 2014), SETE results highlight the importance of focussing on the 'transitional' part of the continuum of learning teaching. However, we argue that this is more than a journey from novice to expert involving linear 'Initial -> Transitional -> Continuing' framings. We argue for a consideration of a new 'transitional teacher education'.

6.2 A 'transitional teacher education'

Some authors have explored ways of thinking about the gaps between teacher preparation and doing teaching. For example, Ziechner, Payne and Brayko (2015) call for approaches to teacher preparation that value and promote interaction between practitioner, academic, and community-based knowledge requiring the creation of new 'hybrid spaces' where these knowledges can come together to inform innovative solutions to teacher preparation (p.124). Similarly, the Teacher Education Ministerial Advisory Group (2014) recommendations argued for an integrated system, though it is likely that the partnership models imagined by this group are dissimilar to those that would occupy the hybrid-space. Returning to our theoretical framing related to the spaces for teacher education, the notion of a 'thirdspace' affords an open, critical spatial imagination of how things can be different (Soja, 1996).

> Lived space is a space to resist, subvert and re-imagine the 'real-and-imagined' spaces (Soja 1996) of everyday realities and hegemonic ideologies. It offers the potential for space to be made and remade with generative possibilities for critical transformation and civic participation. It is a space for new possibilities and imaginings of how things could be, a space of transgression and symbolism (Lefebvre 1991). (Ryan 2011, p. 888).

Employment practices and opportunities, emotional identities, and school contexts have been shown in SETE to be central moderating influences in early career teaching on teacher effectiveness, commitment, and resilience. Therefore, we urge consideration of new synergies and new ways of working together to create collaborative spaces for teacher education (physical as well as conceptual spaces) involving universities, employers and schools that bring together learning teaching and doing teaching. This will require questions about where learning teaching happens, who does it and how are they prepared for the task,

as well as a rethinking of where in this continuum employment and teacher certification occurs and (re)occurs.

Drawing on SETE findings we highlight key aspects of a transitional teacher education involving universities, schools and their communities, and systems, which is part of a continuum of lifelong learning and doing teaching. This will require a redefinition of 'teacher educator' such that teacher educators actively contribute to the learning of all teachers in the school community, making significant contributions to the capacity of school leadership groups in the same ways that school leaders could make significant contributions in supporting teacher education. It will also prompt (re)consideration of key aspects of teacher preparation which we currently take for granted, such as:

1. From SETE, length of one's teacher education program matters, but what does 'length' mean in a transitional teacher education?
2. What will professional experience mean? What does it look like in a transitional teacher education? How can sustained practice be positioned alongside learning to teach, in preference to the current model of practice through intervals of placement or internships.
3. At what point does 'employment' happen and what does it look like?
4. At what point is a 'learning teacher' registered or credentialed as a teacher?
5. What is the role of research? Universities are sites of research to inform education. Teacher educators are researchers and teachers of teachers but more thinking will need to be directed to the role of teachers as researchers.

In summary SETE argues that quality teaching requires a reconsideration of teacher education such that it is a collective responsibility between universities, schools, systems and communities requiring the fusion and synthesis of teacher education, schooling and the goals of education. This will require a focus on inquiry-centred teacher education, rejecting the idea that there are universally appropriate 'best practices' or models to be transported from other places and implemented universally. It will require much working together to make it clear what each is uniquely positioned to offer teacher education and to learning teaching overtime. Differing conceptions of teacher education have been articulated and championed in Australia, but if they are to be future focused and meet changing community expectations of the university and schooling sectors, policy and practice changes will benefit from the evidence that this large scale mixed method project has generated.

6.3 Further research

There is currently much research *on* teacher education and research *in* teacher education. We argue that more research is needed *for* teacher education providing data informed teaching and learning teaching. The recent BERA-RSA report highlights ways in which teacher education can be research-informed:

- First, the content of teacher education programs may be informed by research-based knowledge and scholarship, emanating from a range of academic disciplines and epistemological traditions.

- Second, research can be used to inform the design and structure of teacher education programs.

- Third, teachers and teacher educators can be equipped to engage with and be discerning consumers of research.

- Fourth, teachers and teacher educators may be equipped to conduct their own research, individually and collectively, to investigate the impact of particular interventions or to explore the positive and negative effects of educational practice.

(BERA, 2014)

The SETE longitudinal study has produced a wealth of evidence that will require further close analysis and reflection. This report presents the major findings and provides a starting point for informed discussion. Connecting teacher and student learning and examining the impact of social, cultural and institutional influences on teaching and learning teaching (see Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills & Stern, 2015) must also be considered.

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8. Appendices

Appendix 1: Case study site demographics (2012) and interview schedule (2011-2014)

Appendix 2: Graduate Teacher Survey – Sample representativeness

Appendix 3: Utilisation of the preparedness for teaching scale

Appendix 4: Graduate Teacher Surveys - Point-in-time consideration of program type using one-way between groups analysis of variance (ANOVA)

Appendix 5: Graduate teachers perceptions of preparation and perceptions of effectiveness in key areas of teaching

Appendix 6: Graduate Teacher Surveys - Longitudinal analysis of the quantitative data

Appendix 7: Analyses of perceptions of preparedness and perceptions of effectiveness by gender - longitudinal sample

Appendix 8: Associations between graduate teachers' self-report of their perceptions of preparedness, effectiveness, and influence on student learning

Appendix 1: Case study site demographics

Table A1.1: Case study site demographics (2012) and interview schedule (2011-2014)

State	School Name	Number Of Visits	School Type	Number Of graduate teachers Interviewed	Number Of school leaders Interviewed	Total Eft Students	Total Eft Staff	ICSEA	Aboriginal or Torres Strait Islander	Language background other than English
Qld	Fern	5	Secondary	10	1	>1000	100-150	901-1000	6-10%	1-10%
Vic	Sunspot	3	Primary	1	1	101-300	<25	901-1000	1-5%	>40%
Qld	Greater Stonnington	4	Secondary	12	8	>1000	75-100	901-1000	6-10%	0%
Qld	Stonelea	5	Secondary	5	1	701-1000	50-75	901-1000	>10%	1-10%
Vic	Acacia	3	Secondary	9	0	>1000	75-100	901-1000	1-5%	-
Vic	Sugarbush	1	Secondary	7	2	>1000	75-100	901-1000	1-5%	>40%
Qld	Jacaranda	4	Primary	9	2	501-700	25-50	801-900	>10%	>40%
Qld	Turret	5	Secondary	47	11	>1000	100-150	901-1000	>10%	1-10%
Vic	Grevillea	3	Primary	3	1	21-50	<25	901-1000	-	-

Vic	Flat Plains	3	Secondary	2	1	>1000	75-100	901-1000	1-5%	>40%
Vic	Wheaten College	3	P-12	2	1	101-300	<25	1001-1100	1-5%	1-10%
Qld	Pine Tree	3	Secondary	15	2	>1000	100-150	901-1000	6-10%	1-10%
Vic	Meandering Hills	5	P-12	13	2	>1000	75-100	901-1000	1-5%	1-10%*
Qld	Sycamore	1	Secondary	0	1	>1000	75-100	901-1000	6-10%	1-10%
Vic	Range	2	Secondary	1	1	101-300	<25	901-1000	1-5%	-
Qld	Bandicoot	4	Primary	5	4	301-500	<25	1001-1100	1-5%	21-40%
Vic	Lyrebird	3	Secondary	2	1	501-700	50-75	901-1000	1-5%	>40%
Qld	Tea Tree	4	Secondary	3	1	701-1000	50-75	901-1000	1-5%	1-10%
Vic	Millewah	2	Secondary	2	1	<20	<25	801-900	>10%	-
Qld	Tussock	4	Secondary	10	2	701-1000	75-100	801-900	>10%	1-10%
Qld	Shoreline	4	Primary	5	1	701-1000	50-75	1001-1100	1-5%	1-10%
Vic	Tramline	1	Secondary	1	1	50-100	<25	901-1000	6-10%	1-10%

Vic	Emu Bush	4	Primary	1	1	<20	<25	1001-1100	-	-
Vic	Redgum	2	Primary	3	0	501-700	25-50	901-1000	1-5%	1-10%
Vic	Banksia	2	Secondary	6	0	>1000	75-100	901-1000	1-5%	1-10%
Vic	Jersey Waters	3	Secondary	11	1	>1000	50-75	901-1000	1-5%	1-10%
Vic	Weskin	3	Primary	1	1	50-100	<25	901-1000	6-10%	1-10%
Vic	Silverwood	1	Primary	6	1	301-500	25-50	900-1000	1-5%	>40%
Vic	Dale	2	Primary	2	1	101-300	<25	1001-1100	1-5%	-
Vic	Koala Hills	4	P-8	3	1	101-300	<25	801-900	>10%	1-10%

*2011 data used as 2012 data was unavailable   SOURCE: www.myschool.edu.au

Appendix 2: Graduate Teacher Survey - Sample representativeness

The distribution of respondents to the SETE graduate Teacher Survey is, on the whole, consistent with teacher demographics reported in:

- Staff in Australia's Schools (SiAS) survey 2010
- Former Department of Industry, Innovation, Science, Research and Tertiary Education Higher Education statistics 2011
- Australian Education Union New Teacher Survey 2011, 2013
- Australian Bureau of Statistics Census 2011
- Australian Bureau of Statistics, Schools Australia 2011.

SiAS offers perhaps the most useful point of reference but in making comparisons between the SETE teacher sample (n = 4,907) and the SiAS teacher sample (n = 15,475) it is important to note that SiAS looks at the whole teaching population, whereas SETE tracked only teachers who graduated from teacher education programs in either 2010 or 2011. The 2010 SiAS survey defines early career teachers as those who have been teaching for five years or less (25 per cent of primary teachers, 20 per cent of secondary teachers). New teachers are also defined in the AEU New Teacher Survey as teachers who have been teaching for five years or less (88.8 per cent of the 2013 sample). The sampling procedures for the two studies are also different as are the descriptors and parameters for the categories used for SiAS and SETE. SiAS used two-stage stratified sampling. For SETE, all members of the target population were invited to participate, including graduates not currently employed as teachers.

Of note is that just over 43 per cent identified as the first in their immediate family to gain a tertiary qualification. Comparative statistics were not available within the collections reported though the literature suggests that first in family is highly correlated with socio-economic status, 'in Victoria, 44.6% of 2011 final year secondary students from low SES backgrounds enrolled in a Bachelor's degree in 2012. The comparable percentage for students from high SES backgrounds was 60.5% (DEECD 2012).' (Gale & Parker, 2013, p.8). James, Krause and Jennings (2010) found that parental expectations play a significant role in students' university participation and that '…parental education levels are higher for the high/medium SES group compared with the low SES group. The low SES students are more likely to be the first in the family to attend university (46 per cent compared with 29 per cent)' (p.63). These figures are higher than the proportion of first in family graduate teachers represented in the SETE survey sample, but the time point of data collection may account for some of this difference.

Over half had graduated from a graduate teacher education qualification (including 9 per cent from Master's programs), while about 47 per cent held a four-year undergraduate Bachelor's qualification. Many respondents had completed their program in full time study mode (85 per cent) while around two-thirds had completed their teacher preparation at metropolitan universities. Most (about 96 per cent) had been enrolled as domestic students. This is much higher than the percentage of domestic students in higher education institutions across Australia (all fields of study), which in 2011 was 73 per cent (DIISRTE, 2011-2012).

The majority of the respondents had a secondary (about 44 per cent) or primary school (36 per cent) teaching qualification with the balance having been prepared to teach early childhood or some combination of early childhood/ primary or primary/ secondary. This shows a higher proportion with secondary teaching qualifications than for the Australian teaching workforce as a whole (McKenzie et al., 2011) and probably reflects the fact that a

higher proportion of the respondent group had graduate teacher education qualifications, often the more usual pathway for secondary teaching.

In the SETE Graduate Teacher Surveys, respondents reported their perceptions of preparedness for teaching.

Table A3.1 indicates the statements used to calculate scores for the SETE preparation for teaching sub-scales in Round 1. Respondents were asked to indicated their level of agreement with 46 statements using a five-point Likert scale (1=SD, 5=SA). Scores for each statement in the sub-scales were tallied then averaged to produce mean scores for nine key areas of teacher preparation; the preparedness sub-scales.

Each statement featured in the Round 1 preparedness scale began with the stem '*My teacher education program*'.

Table A3.1: Allocation of statements in the SETE preparedness for teaching sub-scales

Preparedness sub-Scale	Corresponding statements
Collegiality	prepared me to work with colleagues in collaborative teams
	gave me the knowledge and skills to engage with my school administration
Design and implementation of curriculum	gave me knowledge across all areas of the relevant curriculum
	gave me the knowledge and skills to implement curriculum at the school level
	prepared me to teach across all areas of the relevant curriculum
	prepared me to teach my areas of curriculum specialisation
	prepared me to teach numeracy across the curriculum
	prepared me to teach literacy across the curriculum
	gave me the knowledge and skills to participate in curriculum planning at my school
Professional ethics	helped me to gain an understanding of professional ethics
Engagement in ongoing professional learning	prepared me to engage in ongoing professional learning
	prepared me to evaluate and adjust my own teaching
	gave me the knowledge and skills to engage in reflective practice
Assessment and the provision of feedback and reporting on student learning	gave me the knowledge and skills to design and implement different forms of assessment in my classes
	gave me the knowledge and skills to use informal assessment
	gave me the knowledge and skills to use formative assessment
	gave me the knowledge and skills to use summative assessment
	gave me the knowledge and skills to use assessment to promote learning in my classes
	gave me the knowledge and skills to provide appropriate feedback to my students about their learning
	gave me the knowledge and skills to make consistent judgments about my students' learning
Classroom management	gave me an understanding of how to organise my classroom routines
	gave me the knowledge and skills to work with other teachers in my school to manage challenging behaviours
	prepared me to manage challenging behaviours in my classes

	gave me the knowledge and skills to contribute to and implement my school's behaviour management plan
	prepared me to develop behaviour management strategies for my students
Professional engagement with parents/carers and the community	gave me the knowledge and skills to work with my school's surrounding local community
	prepared me to contribute to my school community
	gave me the knowledge and skills to communicate sensitively with parents and carers in my current teaching context
Teaching culturally, linguistically and socio-economically diverse learners	gave me the knowledge and skills to adapt my teaching for the local context
	prepared me to cater for differences in learning styles in my classes
	prepared me to teach in a culturally diverse classroom
	prepared me to teach students from diverse socioeconomic backgrounds
	prepared me to teach to linguistic diversity in the classroom
	prepared me to develop inclusive classroom activities
	prepared me to teach students with a range of abilities
	gave me the knowledge and skills to establish learning environments in which diverse ideas and opinions are valued
	prepared me for supporting full participation of students with a disability
	helped me develop skills to understand and respect Aboriginal and Torres Strait Islander students
Pedagogy	prepared me to develop learning goals for my classes
	prepared me to develop learning sequences for my classes
	prepared me to use ICT in my teaching
	gave me an understanding of the ways in which students learn in my classes
	prepared me to use a variety of teaching strategies
	prepared me to use information from a range of sources in my teaching
	gave me the knowledge and skills to engage students in the investigation of problems and issues
	gave me the knowledge and skills to identify strategies and resources that support my students' learning

From Round 2, the graduate teacher surveys included the question reproduced in Figure A3.1. Respondents were invited to report both on their perceptions of their preparedness for teaching and on their perceptions of their effectiveness. The SETE longitudinal sample only draws upon the respondents who completed the three surveys used in Rounds 2, 3 and 4.

Figure A3.1: Perceptions of preparedness for teaching and effectiveness, survey question used in Rounds 2-4.

Now that you've been in the teaching profession for some time, please think about your effectiveness as a teacher now AND think back to your teacher education program and how well it prepared you for your current teaching context. Indicate on the scale provided how much you agree or disagree with each of the following statements. **Please select one answer for every choice.**

	My teacher education program prepared me in the following area...					I am effective in the following area now ...				
	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree(4)	Strongly Agree (5)	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree(4)	Strongly Agree (5)
Know students and how they learn (1)	○	○	○	○	○	○	○	○	○	○
Planning for and implementation of effective teaching and learning (2)	○	○	○	○	○	○	○	○	○	○
Know the content and how to teach it (3)	○	○	○	○	○	○	○	○	○	○
Teaching culturally, linguistically and socio-economically diverse learners (4)	○	○	○	○	○	○	○	○	○	○
Design and implementation of curriculum (5)	○	○	○	○	○	○	○	○	○	○

Assessment and the provision of feedback and reporting on student learning (6)	○	○	○	○	○	○	○	○	○	○
Discipline based expertise (7)	○	○	○	○	○	○	○	○	○	○
Use of ICT (8)	○	○	○	○	○	○	○	○	○	○
Literacy and numeracy (9)	○	○	○	○	○	○	○	○	○	○
Pedagogy (10)	○	○	○	○	○	○	○	○	○	○
Creation and maintenance of supportive and safe learning environments (11)	○	○	○	○	○	○	○	○	○	○
Classroom management (12)	○	○	○	○	○	○	○	○	○	○
Professional engagement with parents/carers and the community (13)	○	○	○	○	○	○	○	○	○	○
Collegiality (14)	○	○	○	○	○	○	○	○	○	○
Professional ethics (15)	○	○	○	○	○	○	○	○	○	○
Engagement with ongoing professional learning (16)	○	○	○	○	○	○	○	○	○	○

Appendix 4: Graduate Teacher Surveys - Point-in-time consideration of program type using one-way between groups analysis of variance (ANOVA)

A one-way between groups analysis of variance (ANOVA) was conducted with Round 2 data to explore the impact of program on perceptions of overall preparation for teaching (16 previously identified key areas combined). There was a statistically significant difference at the p <.05 level in preparedness for the three program types: F (3, 2266) = 7.01, p = .000. In reading these results it is important to note that with large sample size differences can become statistically significant, even if the difference between groups is of little practical importance. The eta squared was .01 which in Cohen's (1988, pp. 284-7) terms is a small effect size. In this case the program means are: Master's 3.62 (n=193, SD = .63), Bachelor's 3.57 (n=1,097, SD = .61) and Graduate Diploma 3.47 (n=950, SD = .61).

Post-hoc comparisons using the Tukey HSD test indicated that the mean scores for Master's and Bachelor's graduates were significantly different from those who graduated with a Graduate Diploma.

This ANOVA was repeated with overall perceptions of preparedness replaced with perceptions of effectiveness. There was also a statistically significant difference at the p <.05 level in effectiveness for the three program types: F (3, 2266) = 25.33, p = .000. The post-hoc comparisons revealed the same results as for the preparedness test, suggesting graduates of Master's and Bachelor's degrees perceive themselves as better prepared for teaching and more effective as beginning teachers than their colleagues who had completed Graduate Diplomas. These differences are relatively small (see the program means).

When applied to Round 3 and Round 4 graduate teacher responses statistically significant differences at the p< .05 level were also shown for the three program types:

- Round 3: F (3, 1640) = 3.5 (preparedness); 3.7 (effectiveness). Post-hoc comparisons using the Tukey HSD test indicated that the mean scores for Master's graduates were significantly different for perceptions of preparedness from those who graduated with a Graduate Diploma, while mean scores for effectiveness were significantly different between those who graduated with a Bachelor's degree when compared to a Graduate Diploma.

- Round 4: F (2, 1321) = 6.46 (preparedness). The program means for preparedness are: Master's 3.6 (n=124, SD = .69), Bachelor's 3.44 (n=642, SD = .62) and Graduate Diploma 3.4 (n=558, SD = .61). Post-hoc comparisons using the Tukey HSD test indicated that the mean scores for Master's graduates were significantly different from those who graduated with a Bachelor's degree or a Graduate Diploma. This ANOVA was repeated for overall perceptions of effectiveness. Because Levene's test for homogeneity of variances was violated the Welch and Brown-Forsythe robust tests of equality means were consulted, both revealing a statistically significant difference at the p <.05 level in effectiveness for the three program types: Welch F (2, 1321) = 11.30, p < .000; Brown-Forsythe F (2, 1321) = 11.87, p < .000. The post-hoc comparisons in this instance revealed that the mean scores for Master's and Bachelor's degree graduates were significantly different from those who graduated with a Graduate Diploma. This suggests graduates of Master's and Bachelor's degrees perceive themselves as better prepared for teaching and more effective now than their colleagues who have completed Graduate Diplomas. The program means for effectiveness are: Master's 4.3 (n=124, SD = .42), Bachelor's 4.3 (n=642, SD = .44) and Graduate Diploma 4.2 (n=558, SD = .45).

The means plots for the Round 4 analyses are provided in Figures A4.1 and A4.2. It is important to note that the scales used make small differences look dramatic. Despite reaching statistical significance, the eta squared value for preparedness is .01 and for effectiveness is .02. These are considered to be a small effect sizes.

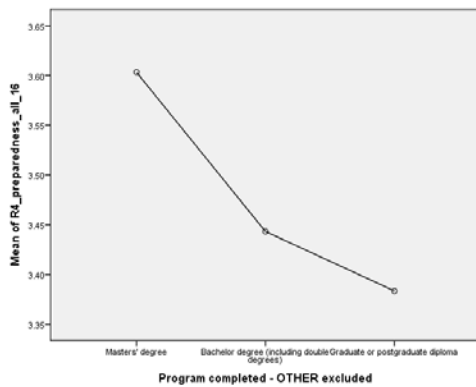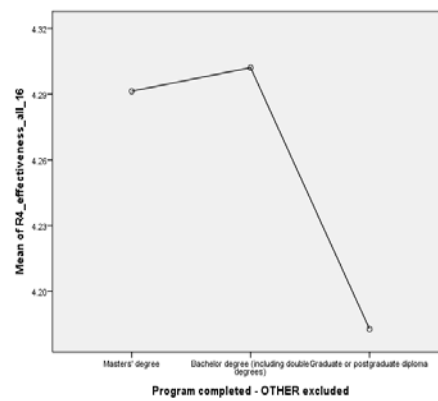**Figure A4.1: Means plot comparing overall preparedness by program type**

Figure A4.2: Means plot comparing overall effectiveness by program type

Appendix 5: Graduate teachers perceptions of preparation and perceptions of effectiveness in key areas of teaching

In the Round 1 Graduate Teacher Survey, 46 items were presented to graduate teachers in the form of statements to which they could agree or disagree. This perceptions of preparation for teaching scale had very strong internal consistency with a Cronbach alpha coefficient of 0.971 (inter-item correlations mean 0.43, range 0.68). To reduce the number of items for the subsequent rounds, sub-scales with subsets of indicator variables were created for each area specified above. All sub-scales with more than two items had a Cronbach alpha coefficient greater than 0.7. These results ensure confident use of the key areas as sub-scales (or components) in analysis of the 46 items. In Rounds 2, 3 and 4, the number of items was reduced and statements referred only to the broad components. In these rounds, graduate teachers were asked not only about their preparation for teaching, but also about their effectiveness as early career teachers. The preparation and effectiveness scales for Rounds 2, 3 and 4 demonstrate good internal consistency with Cronbach alpha coefficients slightly above .9.

Table A5.1 shows the means for graduates' level of agreement with the statements about preparation for teaching for the nine key areas identified for SETE – the SETE sub-scales (1=SD, 5=SA), as well as their level of agreement with their effectiveness in these areas. These questions were only asked of those respondents who were currently teaching. Round 1 respondents were only asked about their preparedness.

Table A5.1: Graduate teachers by perceptions of preparation and perceptions of effectiveness in key areas of teaching

	Round 1 Mean	Round 2 Mean	Round 3 Mean	Round 4 Mean	Longitudinal Round 2 mean	Longitudinal Round 3 mean	Longitudinal Round 4 mean
Teaching culturally, linguistically and socio-economically diverse learners	3.5	3.3	3.3	3.2	3.3	3.4	3.2
Design and implementation of curriculum	3.5	3.5	3.5	3.4	3.5	3.5	3.4
Assessment and the provision of feedback and reporting on student learning	3.7	3.3	3.3	3.2	3.3	3.4	3.2
Pedagogy	3.8	3.9	3.9	3.9	3.9	3.9	3.9
Classroom management	3.4	3.2	3.2	3.0	3.1	3.2	3.0
Professional engagement with parents/carers and the community	3.3	3.0	2.9	2.9	2.9	2.9	2.9
Collegiality	3.6	3.3	3.4	3.4	3.3	3.4	3.3
Professional ethics	4.1	3.9	3.9	3.9	3.9	3.9	3.9
Engagement with ongoing professional learning	4.1	3.7	3.7	3.6	3.7	3.7	3.6

	Round 2 Mean	Round 3 Mean	Round 4 Mean	Longitudinal Round 2 mean	Longitudinal Round 3 mean	Longitudinal Round 4 mean
I am effective in this area now…						
Teaching culturally, linguistically and socio-economically diverse learners	3.9	3.9	4.0	3.9	3.9	4.0
Design and implementation of curriculum	4.0	4.1	4.2	4.0	4.1	4.2
Assessment and the provision of feedback and reporting on student learning	4.0	4.1	4.2	4.0	4.1	4.2
Pedagogy	4.0	4.0	4.1	4.0	4.0	4.1
Classroom management	4.1	4.2	4.3	4.1	4.1	4.2
Professional engagement with parents/carers and the community	4.1	4.1	4.2	4.1	4.2	4.2
Collegiality	4.2	4.2	4.3	4.2	4.2	4.3
Professional ethics	4.3	4.3	4.5	4.4	4.4	4.5
Engagement with ongoing professional learning	4.3	4.3	4.4	4.3	4.3	4.4

(Round 1 n=971, Round 2 n=2,336, Round 3 n=1,758, Round 4 n=1,335; Longitudinal Round 2 n=509, Longitudinal Round 3 n=494, Longitudinal Round 4 n=467)

Overall, there is a very slight drop in overall levels of agreement over time in relation to preparedness for teaching and a slight increase in self-reported effectiveness.

Appendix 6: Graduate Teacher Surveys - Longitudinal analysis of the quantitative data

1. **Independent samples t-tests**

This test is used to compare the mean score on a continuous variable for two different groups. This approach assumes that the dependent variable uses a continuous scale and that the scores for this variable are obtained from a sample exceeding 30 cases (or a normally distributed random sample of the population), and that the group samples are obtained from populations of equal variance. T-tests also assume that each measurement is not influenced by any other observation.

Levene's test for equality of variances was used to determine whether the variation for the two groups was the same. When this was not the case t-values for equal variances not assumed are provided.

Independent samples t-tests were used to identify whether there was a significant difference in the mean scores of two groups on the SETE perceptions of preparedness scale. The tests were repeated for each round, as applicable. The statistically significant differences are listed below.

There was a significant difference in the preparedness scores for:

- Round 2 preparedness for males (M = 3.27, SD = .61) and females (M = 3.49, SD = .63; t (506) = -3.237, p = .001, two-tailed). The magnitude in the differences in the means (mean difference = -.212, 95% CI: -.340 to -.083) was small (eta squared = .02)
- Round 3 preparedness for males (M = 3.35, SD = .69) and females (M = 3.50, SD = .65; t (492) = -2.099, p = .036, two-tailed). The magnitude in the differences in the means (mean difference = -.145, 95% CI: -.281 to -.009) was small (eta squared = .01)
- Round 4 preparedness for males (M = 3.26, SD = .71) and females (M = 3.42, SD = .62; t (465) = -2.271, p = .024, two-tailed). The magnitude in the differences in the means (mean difference = -.159, 95% CI: -.297 to -.021) was small (eta squared = .01)
- Round 2 preparedness for English only language spoken (M = 3.41, SD = .64) and languages other than English spoken (M = 3.62, SD = .67; t (415) = -2.233, p = .026, two-tailed). The magnitude in the differences in the means (mean difference = -.211, 95% CI: -.396 to -.025) was small (eta squared = .01)
- Round 3 preparedness for born in Australia (M = 3.43, SD = .63) and overseas born (M = 3.65, SD = .76; t (403) = -2.456, p = .014, two-tailed). The magnitude in the differences in the means (mean difference = -.230, 95% CI: -.414 to -.046) was small (eta squared = .01)
- Round 4 preparedness for first in family to complete a tertiary qualification (M = 3.30, SD = .65) and not first in family (M = 3.44, SD = .64; t (465) = -2.281, p = .023, two-tailed). The magnitude in the differences in the means (mean difference = -.139, 95% CI: -.258 to -.019) was small (eta squared = .01)
- Round 2 preparedness for those with industry experience (M = 3.51, SD = .64) and those without industry experience (M = 3.38, SD = .61; t (504) = 2.293, p = .022, two-

tailed). The magnitude in the differences in the means (mean difference = .128, 95% CI: .018 to .236) was small (eta squared = .01)

2. **Standard multiple regression**

Standard multiple regression was used to explore the relationship between preparedness scores (a continuous variable) and a number of independent variables (both continuous and dichotomous). The technique was used with both Round 2 data from the longitudinal dataset and with the Round 2 stand-alone data. Each independent variable is entered into the equation simultaneously and is evaluated in terms of its predictive power compared to all other variables entered. This technique was selected as it was regarded as potentially useful for exploring how much variance in Round 2 preparedness was able to be explained by: 1) the personal characteristics of graduate teachers; 2) the characteristics of graduate teachers' teacher education programs; 3) the characteristics of the schools that employed the graduate teachers; and 4) each of the sub-scales that make up the preparedness scale. Standard multiple regression also explains how much unique variance can be attributed to individual independent variables entered.

Assumptions of multiple regression include:

- 15 participants per indicator, and more if the dependent sample is skewed
- Multicollinearity and singularity are not evident
- Outliers are excluded – outliers are defined as those with standardised residual values above 3.
- The residuals should be normally distributed about the predicted dependent variable scores
- The residuals should have a straight line relationship with predicted dependent variable scores
- The variance of the residuals about predicted dependent variable scores should be the same for all predicted scores.

The procedure was used a number of times, the details and results of which are provided below. In the four analyses some of the assumptions were violated. As such the output is provided for interest only and is considered a weak finding. In the remaining analyses assumptions of multicollinearity were only weakly met and should also be interpreted with caution. This noted, results show a lack of strong association between school and program characteristics and preparation and effectiveness, which is an interesting finding. It suggests that there isn't a dominant combination of teacher education and school characteristics that works across contexts, nor that there are particular characteristics of programs that better prepare pre-service teachers for particular contexts.

Round 2 longitudinal data: teacher, school and program characteristics combined and preparedness

Standard multiple regression was used to assess the ability of selected teacher, school and program characteristics to predict levels of preparedness. The independent variables included in the process were:

Teacher: Country of birth, gender, industry experience (yes, no), Aboriginal or Torres Strait Islander heritage (yes, no), first in family to complete tertiary studies, languages spoken (English only, language/s other than English spoken), age in years.

School: Total equivalent full time students, proportion of Aboriginal and/or Torres Strait Islander students, special education school (yes, no), socioeconomic index implied (2010), proportion of students with language backgrounds other than English, Primary school (yes, no), Secondary school (yes, no), State school located in (Victoria, Queensland), Index of community socio-educational advantage (ICSEA).

teacher education program: distributed practicum (yes, no), block practicum (yes, no), internship (yes, no), full time or part time mode of study, specialist qualification (yes, no), campus location (metropolitan, non-metropolitan), undergraduate or postgraduate program, Master's program (yes, no), primary or early childhood development focus (yes, no), secondary focus (yes, no).

For definitions of school variables refer to the SETE Technical Report (Mayer, Allard, Bates, Dixon, Doecke, Hodder, Kline, Kostogriz, Rowan, Walker-Gibbs & White, 2014).

Preliminary analyses revealed that the procedure violated some assumptions with many independent variables showing very weak relationship to the dependent variable (less than .3, with only a small number above .1). While the correlations between the independent variables were not high and Tolerance and VIF did not indicate that the multiple correlation with other variables was high or that multicollinearity was a concern, the weak relationship between the dependent and independent variables are problematic and as such the output is not considered to be robust enough to warrant vigorous discussion. The Normal P-P Plot revealed no major deviations from normality and the Scatterplot of the standard residuals was appropriately distributed.

This model explains 12.3 per cent of the variance in preparedness, however the adjusted R Square value is -.009 indicating that when the small sample size is taken into account (n = 508) the model accounts for only .9 per cent of the variance. The model does not reach statistical significance (p = .572).

The independent variables with Beta values above .1 were proportion of Aboriginal and/or Torres Strait Islander students (beta = -.324, p = .009), gender (beta =.169, p = .020), proportion of students with language backgrounds other than English (beta = .144), industry experience (beta = -.130), state in which the school is located (beta = .111), Special education setting (beta = .111), ICSEA (beta = .111) and language spoken at home (beta = .105). The first two of these variables make a statistically significant unique contribution to the prediction of preparedness. The part correlation coefficients for these variables explain how much of the total variance in preparedness is uniquely explained by each. The proportion of Aboriginal and/or Torres Strait Islander students has a part correlation co-efficient of .105 indicating that it accounts for 1.1 per cent of the variance in preparedness. Gender accounts for .04 per cent of the variance.

Round 2 longitudinal data: teacher characteristics and preparedness

Standard multiple regression was repeated for teacher characteristics only. All independent variables showed weak relationship to the dependent variable (less than .3), thus the results reported here are for interest only.

This model explains 5.8 per cent of the variance in preparedness, however the adjusted R Square value is .041 indicating that the model accounts for only 4.1 per cent of the variance. The model does reach statistical significance (p = .001).

The independent variables with Beta values above .1 were gender (beta =.172, p < .001), industry experience (beta = -.124, p= .017), and language spoken at home (beta = .105, p = .039). Gender has a part correlation co-efficient of .169 indicating that it accounts for 2.9 per cent of the variance in preparedness. Industry experience accounts for 1.4 per cent and language spoken at home for 1 per cent. Being female, speaking a language other than English and having previous industry experience was associated with higher scores for perceptions of preparedness.

Round 2 longitudinal data: school characteristics and preparedness

Standard multiple regression was repeated for school characteristics. All independent variables showed weak relationship to the dependent variable (less than .3), thus the results reported here are for interest only.

This model explains 8.2 per cent of the variance in preparedness, however the adjusted R Square value is .017 indicating that the model accounts for only 1.7 per cent of the variance when the sample size is considered small. The model does not reach statistical significance (p = .252) and only one independent variable has a Beta value above .1 and is significant; proportion of Aboriginal and/or Torres Strait Islander students (beta = -.301, p = .013). This accounts for 3.8 per cent of the variance. Working in a school with smaller numbers of Aboriginal and/or Torres Strait Islander students was positively correlated with perceptions of preparedness.

Round 2 longitudinal data: Teacher education program characteristics and preparedness

As with the three previous examples, all independent variables showed weak relationship to the dependent variable (less than .3). The model explains 1 per cent of the variance in preparedness and has no independent variables with Beta values above .1. The scatterplot for this procedure was negatively skewed.

Round 2 point-in-time data: Recommendation of teacher education program and the SETE preparedness sub-scales

When the model described in section 3.5 was repeated for recommendation of teacher education program to others the assumptions relating to multicollinearity, outliers, normality, linearity, homoscedasticity and independence of residuals were met. Independent variables consistently showed a relationship to the dependent variable with all Pearson's correlations around .3. The correlations between independent variables were .5 and under.

This model accounts for 22.1 per cent of the variance in recommendation of program, and is statistically significant (r square = .221, p < .001). The independent variables with the largest Beta values are Classroom management (beta = .156, p < .001), design and implementation of curriculum (beta = .097, p < .001), teaching culturally, linguistically and socio-economically diverse learners (beta = .092, p < .001), and ongoing professional learning (beta = .090, p < .001). Again, classroom management has the highest part correlation coefficient. It accounts for only 1.6 per cent of the unique variance in recommendation of teacher education programs.

Round 2 point-in-time data: Recommendation of teacher education program and the SETE effectiveness sub-scales

This model only weakly meets the assumptions of multicollinearity, all other assumptions appear to have been met. The independent variables showed a relationship to the dependent variable; all have a Pearson's correlation around .2. The correlations between independent variables were .5 and under.

The model accounts for 7.1 per cent of the variance in recommendation of program (r square .071, p < .001). The independent variable with the largest Beta value was pedagogy (beta = .117, p < .001). This value was much larger than all other Beta values and is therefore the only one reported. It accounts for only 0.9 per cent of the unique variance in recommendation of teacher education programs.

Appendix 7: Analyses of perceptions of preparedness and perceptions of effectiveness by gender - longitudinal sample

Standard multiple regression was conducted for teacher characteristics, including gender for the longitudinal dataset. Being female, speaking a language other than English and having previous industry experience was associated with higher scores for perceptions of preparedness (SETE items only). All independent variables showed weak relationship to the dependent variable (less than .3), thus this result is reported for interest only.

There was a significant difference in the perceptions of preparedness and perceptions of effectiveness scores for males and females (SETE items only), with females consistently reporting higher scores for both scales.

- Round 2 preparedness for males (M = 3.27, SD = .61) and females (M = 3.49, SD = .63; t (506) = -3.237, p = .001, two-tailed). The magnitude in the differences in the means (mean difference = -.212, 95% CI: -.340 to -.083) was small (eta squared = .02)
- Round 3 preparedness for males (M = 3.35, SD = .69) and females (M = 3.50, SD = .65; t (492) = -2.099, p = .036, two-tailed). The magnitude in the differences in the means (mean difference = -.145, 95% CI: -.281 to -.009) was small (eta squared = .01)
- Round 4 preparedness for males (M = 3.26, SD = .71) and females (M = 3.42, SD = .62; t (465) = -2.271, p = .024, two-tailed). The magnitude in the differences in the means (mean difference = -.159, 95% CI: -.297 to -.021) was small (eta squared = .01)
- Round 2 effectiveness for males (M = 4.01, SD = .45) and females (M = 4.14, SD = .44; t (507) = -2.807, p = .005, two-tailed). The magnitude in the differences in the means (mean difference = -.130, 95% CI: -.221 to -.039) was small (eta squared = .02)
- Round 3 effectiveness for males (M = 4.05, SD = .47) and females (M = 4.17, SD = .44; t (492) = -2.470, p = .014, two-tailed). The magnitude in the differences in the means (mean difference = -.117, 95% CI: -.211 to -.024) was small (eta squared = .01)
- Round 4 effectiveness for males (M = 4.11, SD = .50) and females (M = 4.26, SD = .46; t (465) = -2.884, p = .004, two-tailed). The magnitude in the differences in the means (mean difference = -.148, 95% CI: -.249 to -.047) was small (eta squared = .02)

Appendix 8: Associations between graduate teachers' self-report of their perceptions of preparedness, effectiveness, and influence on student learning

There was a small positive relationship between:

Round 2 point-in-time - Perceptions of preparedness and perceptions of influence on student learning, r = .16, n = 2307, p < .0005

Round 3 longitudinal - Perceptions of preparedness and perceptions of influence on student learning (eight items combined), r = .21, n = 494, p < .0005

Round 3 longitudinal - Perceptions of effectiveness and recommendation of program to others, r = .24, n = 473, p < .0005

There was a medium positive relationship between:

Round 2 point-in-time - Recommendation of program and perceptions of preparedness, r = .47, n = 2270, p < .0005

Round 2 point-in-time - Perceptions of preparedness and perceptions of effectiveness, r = .41, n = 2336, p < .0005

Round 2 point-in-time - Perceptions of effectiveness and perceptions of influence on student learning, r = .49, n = 2307, p < .0005

Round 3 longitudinal - Perceptions of preparedness and perceptions of effectiveness, r = .35, n = 494, p < .0005

There was a large positive relationship between:

Round 3 longitudinal - Recommendation of program to others and perceptions of preparedness, r = .50, n = 473, p < .0005

Round 3 longitudinal - Perceptions of student learning and perceptions of effectiveness, r = .64, n = 494, p < .0005