

Professional experience in teacher education

Centre for Education Statistics and Evaluation

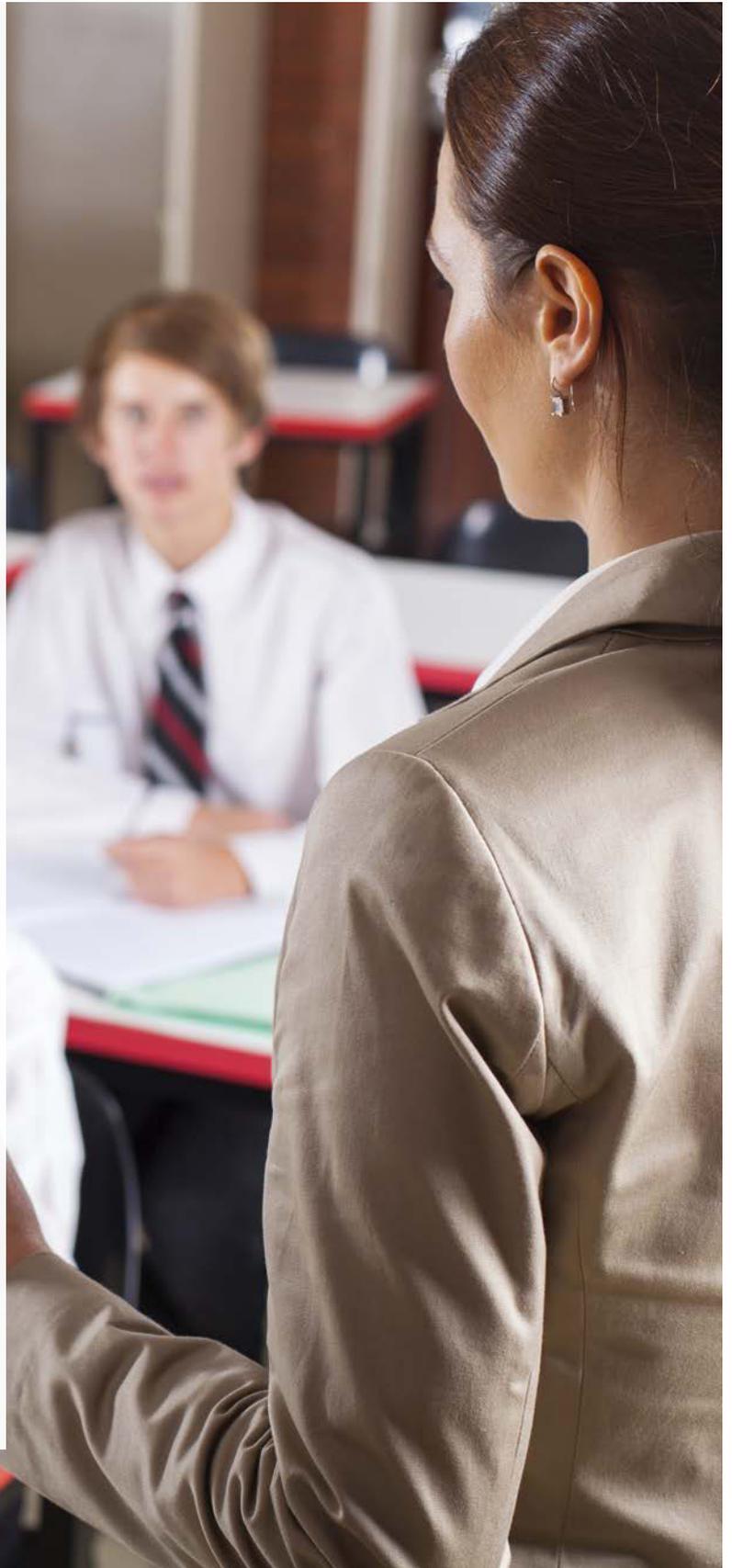


There is clear evidence that enhancing the capability of teachers has an important role to play in improving student outcomes and raising the overall quality of Australia's education system.

Teacher quality is now known to be the most important in-school influence on student achievement. This has focused attention on ways in which teacher quality can be improved in Australia – from recruiting high achieving graduates through to improving initial teacher education programs and providing support to teachers in their first years in the classroom.

Initial teacher education has been the subject of ongoing debate, both in Australia and internationally. Over the past thirty years, there have been a number of national and state government inquiries into the effectiveness of initial teacher education. There has also been significant discussion in the literature, with many suggesting that there is room to improve Australia's current pre-service teacher education. Despite this, the evidence regarding pre-service teacher education is limited. Although there is a growing body of research about what highly effective teaching looks like, and what graduate teachers should know and be able to do, there is currently little empirical research regarding initial teacher education specifically.

This paper focuses on the professional experience¹ component of initial teacher education. It reviews and summarises the research in this area, including how practice-based learning is used in preparing teachers and professionals across other disciplines and the role of partnerships between schools and universities. The paper also identifies gaps in the existing literature, notably a lack of research into the impacts of professional experience on teachers' long term effectiveness.



¹ Across the literature, a number of terms are used to refer to the practical component of teacher education, including practicum, clinical placement and field placement. For the purposes of this review, the term professional experience will be used. It refers to the opportunities provided to pre-service teachers to practise and develop their skills in a school environment. This may involve observing and teaching in classrooms, as well as other school-based activities such as undertaking assessments or attending staff meetings.

Professional experience across disciplines

Professional experience forms an essential element of pre-service training across a range of disciplines. Professional experience enables students to connect theory with practice and develop the professional skills necessary in a work environment (NSW Department of Education and Training 2000). These skills may be specific to the profession itself, such as subject matter knowledge or technical competencies, or more general, such as communication skills or the ability to work in a team.

In their paper *Teaching Practice: A Cross-Professional Perspective*, Grossman et al. (2009) examine how practice is taught in different professional education programs. They suggest that preparing for professional practice requires students to build both professional knowledge and clinical skills. The authors conclude that practice-based exercises undertaken at university, such as simulations or role-play, are useful but that they cannot replace 'the need for students to engage in real settings of practice with actual clients' (p. 2093).

Similarly, Kennedy et al. (2015, p. 2) comment:

Rather than being merely environments in which the knowledge learnt in university can be practised, refined and honed, workplaces provide particular kinds of experiences which have the potential for student learning which is unlikely to be secured in other kinds of circumstance.

Practical requirements across professions

In Australia, professional experience is a requirement across a range of professions. In addition to teachers, social workers, doctors and architects, among others, are all required to have undertaken some form of supervised workplace experience before they can work independently in their field. Specific requirements, such as the way workplace experience is structured or its duration, vary significantly across fields and are usually set by the national professional body in the particular field (e.g. Engineers Australia).

In some fields, workplace professional experience is a mandatory part of the university degree program. As an example, in order for a professional engineering degree to be accredited by Engineers Australia, the program must require students to undertake approved professional experience before they are eligible to graduate (Engineers Australia 2008). In other fields, professional experience is not a requirement for obtaining the qualification itself but is necessary in order for graduates to gain registration or membership to professional bodies. Accounting students, as an example, are not required to undertake any professional experience in order to gain their degree.

However, in order to become a Chartered Accountant, applicants must undertake the Graduate Diploma of Chartered Accounting as well as three years of professional experience under the guidance of a mentor (Chartered Accountants Australia and New Zealand n.d.). During this experience, the candidate must gain set technical (i.e. taxation) and non-technical (i.e. decision-making) competencies and have this signed off by their mentor (Chartered Accountants Australia and New Zealand n.d.).

In many health-related disciplines, the practical component is integrally linked with coursework throughout the degree program. As an example, in training programs for registered nurses, clinical placements begin in the first year of study and continue throughout the course. This clinical training comprises approximately 40-45 per cent of the total program (Health Workforce Australia 2014). In order to be accredited, program providers must demonstrate that a minimum of 800 hours of workplace experience is incorporated into their program (Australian Nursing & Midwifery Accreditation Council 2012). In reality, most programs incorporate more than this (Health Workforce Australia 2014).

Similarly, medical practitioners are required to undertake significant clinical training, which is integrated with coursework throughout the degree program (Australian Health Ministers' Advisory Council 2015). During their studies, medical students attend clinical schools, which are dedicated teaching areas located within hospitals (Deakin University n.d.; Sydney University n.d.) and course providers must ensure their students complete a minimum amount of clinical training in order to be accredited (Productivity Commission 2012). Once medical students have finished their degree, they must also undertake an accredited internship to become eligible for general registration as a medical practitioner (Australian Health Ministers' Advisory Council 2015). Interns must undertake a minimum of 47 weeks full time service including at least eight weeks in emergency medical care and at least ten weeks each in medicine and surgery (Medical Board of Australia n.d.). Students then go on to complete specialist training, which will involve further clinical experience depending on their chosen area of specialty.

The teaching hospital model is often praised for the way it integrates theory and practice and many have suggested a similar model be adopted in other professional education programs, including teaching (National Council for Accreditation of Teacher Education 2010; Dinham 2012). A report by the National Council for Accreditation of Teacher Education in the United States recommended moving towards a teacher education model based

on clinical preparation, much like the way medical practitioners are educated. It recommends turning teacher education 'upside down' by implementing 'programs that are fully grounded in clinical practice and interwoven with academic content and professional courses' (National Council for Accreditation of Teacher Education 2010, p. ii).

Profession	Practical Requirements
Medical Practitioner	In order to be registered as a medical practitioner, an applicant must have undertaken an accredited degree (which includes clinical training). This is followed by: <ul style="list-style-type: none"> <input type="checkbox"/> An internship, of at least 47-weeks supervised practice in an accredited hospital; and <input type="checkbox"/> An additional one to two years in a hospital as a Resident Medical Officer; and <input type="checkbox"/> Completion of a speciality training program. The requirements of these vary depending on the area of speciality but generally include supervised training as well as clinical, practical and exit examinations (Australian Medical Association n.d.).
Registered Nurse	To become a registered nurse, applicants must complete 800 hours of clinical training as part of their degree (Australian Nursing & Midwifery Accreditation Council 2012).
Primary/Secondary Teacher	Applicants can complete either: <ul style="list-style-type: none"> <input type="checkbox"/> A four-year undergraduate program and at least 80 days professional experience; or <input type="checkbox"/> A two-year postgraduate program and at least 60 days professional experience (Australian Institute for Teaching and School Leadership 2011).
Social Worker	In order to be eligible for membership of the Australian Association of Social Workers, an applicant must have completed at least 140 days of field education in at least two field placements with two contrasting client foci (Australian Association of Social Workers n.d.).
Architects	In order to use the title 'architect', an individual must: <ul style="list-style-type: none"> <input type="checkbox"/> Have a recognised academic qualification or received a pass in the National Program of Assessment; and <input type="checkbox"/> Undertake a minimum of two years professional experience followed by successful completion of the AACA Architectural Practice Examination; or <input type="checkbox"/> Complete the AACA National Program of Assessment, including seven years' experience (which must include 3 years of supervised practice and 3,000 logged hours of architectural experience) (Architects Accreditation Council of Australia).
Chartered Accountant	To become a Chartered Accountant, applicants must: <ul style="list-style-type: none"> <input type="checkbox"/> Have an accredited undergraduate/Master's degree; and <input type="checkbox"/> Complete the Graduate Diploma of Chartered Accounting as well as three years of professional experience under the guidance of a mentor (Chartered Accountants Australia and New Zealand n.d.).
Psychologist	In order to qualify for general registration, applicants must: <ul style="list-style-type: none"> <input type="checkbox"/> Have an accredited Master's degree (which includes practical experience); or <input type="checkbox"/> A five year accredited sequence of study followed by a one year approved internship; or <input type="checkbox"/> A four year accredited sequence of study followed by a two year approved internship; or <input type="checkbox"/> A qualification that, in the Psychology Board of Australia's opinion, is substantially equivalent to any of the above (Psychology Board of Australia 2010).

Professional experience requirements in teacher education

Initial teacher education in Australia combines theoretical coursework with professional experience. This includes subject-matter and pedagogical training undertaken at university, as well as practical placements in schools. Under the *Accreditation of Initial Teacher Education Programs in Australia: Standards and Procedures* (the Standards), set by the Australian Institute for Teaching and School Leadership (2015), teachers are required to have a four-year or longer full-time equivalent higher education qualification.² As a part of this, pre-service teachers are required to complete a practical placement, where they are placed in a school (or schools) under the supervision of a mentor teacher. Pre-service teachers completing four-year undergraduate programs are required to complete 80 days of professional experience; while those completing graduate entry two-year programs are required to complete 60 days (Standard 5.2).

Under the Standards, it is expected that higher education providers will work with schools to deliver their teacher education programs, particularly the professional experience component. The Standards state that, in order to be nationally accredited, providers must develop 'Formal partnerships, agreed in writing...to facilitate the delivery of programs, particularly professional experience for pre-service teachers' (Standard 5.1). These partnerships must 'clearly specify components of placements and planned experiences, identified roles and responsibilities for both parties and responsible contacts for day-to-day administration of the arrangement' (Standard 5.1) (Australian Institute for Teaching and School Leadership 2015).

Higher education providers are given flexibility as to how practical placements are organised and as a result, the structure, duration and timing of practical placements tends to vary. Some placements are in blocks, usually two–six weeks in length, while others are structured over a longer period, one or two days a week. Some placements commence in the first year of the teacher education course, while other pre-service teachers do not start their professional experience until later. Providers must ensure, however, that students receive professional experience that is as diverse as possible and commences as early as practicable in the program (Standard 5.4).

The effectiveness of initial teacher education in Australia

NSW has many high-quality teaching graduates but some suggest that there is room for improvement (Dinham 2013; Australian Council for Educational Research 2014). Australia's declining performance in international assessments, as well as evidence that many graduate teachers do not feel well prepared for key aspects of their roles, has focussed attention on the need to improve initial teacher education (Australian Council for Educational Research 2014; Productivity Commission 2012).

A report by the Australian Council for Educational Research (2014) comments:

There is now an urgent challenge to promote high quality teaching in every Australian classroom, to ensure that every teacher is doing what the best teachers already do, and to raise the status of teaching as an advanced, knowledge-based profession. Initial teacher education has a central and crucial role to play in addressing this challenge.

Results from the 2013 Staff in Australia's Schools survey (Australian Council for Educational Research 2014a) suggest that teachers' attitudes regarding the effectiveness of initial teacher education are mixed. As an example, 76 per cent of new primary school teachers and 74 per cent of new secondary school teachers felt that their initial teacher education was helpful or very helpful in preparing them to develop and teach a unit of work. However, only 23 per cent of new primary school teachers and 28 per cent of new secondary teachers felt that their initial teacher education was very helpful or helpful in preparing them for teaching Aboriginal and Torres Strait Islander students.

The Australian Education Union New Educators Survey (Australian Education Union 2008), which surveyed 1,545 early career teachers, had similar results. Almost half of the respondents felt that their education had prepared them well or very well, yet 36 per cent felt that it was satisfactory and 22 per cent felt it was poor or very poor. Eighty-six per cent did not think their training adequately prepared them for dealing with difficult parents and colleagues and 69 per cent did not think their training provided adequate grounding to teach particular groups of students, such as students with disability or students from non-English speaking backgrounds.

Existing literature points to a number of ways initial teacher education programs can be improved, and much of this focusses on the professional experience component. Common suggestions include: better integrating theory and practice, establishing genuine partnerships between schools and universities and providing more emphasis on practical skills, such as classroom management and communicating with parents (Australian Council for Educational Research 2014; Teacher Education Ministerial Advisory Group 2014; Department of Education and Early Childhood Development 2011; Allen & Peach 2007).

² This can be structured as either: a three-year undergraduate degree plus a two-year graduate entry professional qualification (e.g. an undergraduate Bachelor of Arts and then a Masters of Teaching), an integrated qualification of at least four years (e.g. a Bachelor of Education: Primary) or a combined degree (e.g. Bachelor of Education: Secondary and a Bachelor of Arts).

The benefits of professional experience in teacher education

There is currently little empirical research into the effectiveness of different aspects of teacher education programs, including the practical component. Of the research that does exist, most is qualitative and focusses on the perceptions of pre-service teachers rather than student outcomes. This is complicated by the fact that pre-service teachers' experience varies significantly across different courses and school contexts, making it difficult to isolate the effects of professional experience (Australian Council for Educational Research 2014; British Educational Research Association 2014). As Hattie concludes in his book *Visible Learning*, 'So much more is needed on this topic' (2009, p. 112).

These evidence gaps have been acknowledged in a number of government inquiries and reports. In 2014, the Teacher Education Ministerial Advisory Group³ published their report *Action Now: Classroom Ready Teachers*. The report notes, 'Better evidence of the effectiveness of initial teacher education in the Australian context is needed to inform innovative program design and delivery, and the continued growth of teaching as a profession' (p. xiii). This is consistent with findings by the Productivity Commission (2012) and an inquiry by the House of Representatives Standing Committee on Education and Vocational Training (2007).

Despite these evidence gaps, there is significant support for the integration of professional experience into teacher education programs (Department of Education and Early Childhood Development 2011; Teacher Education Ministerial Advisory Group 2014; National Council for Accreditation of Teacher Education 2010). The *Top of the Class: Report on the inquiry into teacher education report* (House of Representatives Standing Committee on Education and Vocational Training 2007) notes that the practicum is 'critically important' to teacher education. Similarly, the *Action Now* report states 'Professional experience placements are crucial to the development of new teachers' (p. 15).

There is growing recognition that teaching is a 'clinical' practice, which requires teachers to be able to design strategies to help students learn (Grossman 2010, Dinham 2012). Dinham suggests that, like doctors, teachers need to be able to 'diagnose' individual student's learning needs and provide appropriate 'prescriptions' for improvement (Dinham 2012). It is thought that in order for pre-service teachers to develop these clinical skills, they require multiple opportunities to practise and gain feedback. While some of this can occur effectively in designed settings or simulations, it is widely acknowledged that pre-service teachers require significant opportunities to gain experience in authentic classroom settings (Grossman 2010). As Darling-Hammond (2010) comments 'learning to practice in practice, with expert guidance, is essential to becoming a great teacher of students with a wide range of needs' (p. 40).

One common finding across the literature is that professional experience can enhance graduate teachers' feelings of preparedness (Deakin University 2013; Australian Council for Educational Research 2014a). The 2013 Staff in Australia's Schools Survey (Australian Council for Educational Research 2014a) asked early career teachers about how helpful they felt their initial teacher education was in relation to: in-school experience; education studies; teaching methods; and subject studies. In-school experience was regarded more highly than the other three elements, with 88 per cent of primary and 92 per cent of secondary early career teachers saying it was very helpful/helpful. Similarly, in all three rounds of the Longitudinal Teacher Education and Workforce Study (Deakin University 2013), almost all graduate teachers strongly agreed or agreed that the skills they gained during the practicum were important. These findings were echoed in interviews undertaken as part of the study, with the practicum being described by one participant as 'the most valuable learning in the course' (p. 195).

Although these surveys indicate that teachers' generally feel professional experience improves their preparedness, they do not provide any insights into whether these positive feelings are enduring. Further, they do not examine how teachers' perceptions affect student outcomes. As Ronfeldt notes, 'though new teachers may experience shifts in how they view teaching and learning during student teaching, we don't know whether these changes translate into positive student outcomes' (2012, p. 2).

Some studies have attempted to examine the effect of teachers' professional experience on their teaching quality. However, to date, such research has focussed on the effectiveness of teachers in their first few years of teaching, without examining how different training may impact teachers' effectiveness long term. As an example, Boyd et al. (2009) conducted a study in the United States to examine the relationship between teachers' training and their students' test score performance in mathematics and English. They found that teachers who had the opportunity in their training to engage in the actual practices involved in teaching, such as planning lessons or listening to children read aloud for the purpose of assessment, showed greater student gains during their first year of teaching. However, the authors warn that these results were exploratory and that more research in this area is needed.

³ The Teacher Education Ministerial Advisory Group was established in 2014 by the then Commonwealth Minister for Education and Training, the Hon Christopher Pyne.

What makes an effective practicum?

Despite the evidence gaps highlighted above, there is an emerging consensus as to the essential features of high-quality professional experiences (Australian Council for Educational Research 2014). These features include: clear links between professional experience and coursework, genuine partnerships between schools and universities and effective mentor teachers (Darling-Hammond 2006). These elements are inextricably linked, and it appears that improving one element in isolation is unlikely to improve the quality of the professional experience overall (Australian Council for Educational Research 2014).

Darling-Hammond analysed the features of seven teacher preparation programs in the United States known for consistently preparing high-quality teachers (Darling-Hammond 2006). She found that these programs shared a number of features, including close and genuine collaboration between universities and schools, and carefully planned professional experiences that provide opportunities to connect coursework and practice. Similarly, a report by the Australian Council for Educational Research comments 'The research emphasises the importance of creating a balance between time devoted to university-based learning and on-the-job learning, with a meaningful integration of the two experiences central to improving outcomes for prospective teachers' (2014, p. 21).

It is also suggested that professional experiences need to be extended in length and begin early in the teacher education course (Teacher Education Ministerial Advisory Group 2014). However, the evidence regarding the importance of both the length and structure of practical placements is mixed and incomplete.

Genuine school-university partnerships

The importance of strong partnerships between schools and teacher education faculties is not a new idea. The *Quality Matters* report (NSW Department of Education and Training 2000) comments 'University training and professional education requires universities and the profession to develop partnerships to provide relevant and effective professional experience. To date in teaching this has not been achieved to the necessary extent' (p. 111). More recently, the *Action Now* report identified an 'integrated system', in which higher education providers, school systems and schools work collaboratively to prepare high quality teachers, as one of five key directions (2015, p. vii).

Such partnerships are an established part of teacher education programs in a number of high-achieving countries around the world. In Finland, for example, pre-service teachers undertake the majority of their practical training in training schools. These schools are governed by universities and have similar curricula and practices as normal Finnish government schools (Stanford Center for Opportunity Policy in Education 2010). McKinsey & Company (2007) suggest that the Finnish model 'helps to

ensure that the content of teacher training is tightly linked to the actual practice within schools' (p. 29). A similar model is used in the Netherlands, where professional experience is undertaken in special 'opleidingscholen', or training schools, which are linked to universities (British Educational Research Association 2014).

Professional Development Schools (PDS) in the United States are based on a similar model and serve as sites for both pre-service and in-service professional learning (British Educational Research Association 2014). PDSs are formed through partnerships between universities and P-12 schools (National Council for Accreditation of Teacher Education n.d.) and there are currently more than 1,000 PDS sites across the United States (PennState n.d.). These partnerships have a strong focus on preparing teachers for work in urban schools with students from diverse backgrounds (British Educational Research Association 2014). Darling-Hammond (2006) notes that while not all PDSs have been successful, there is growing evidence to support the model. She refers to studies which have found that PDS graduates are seen as more prepared, by both themselves and their colleagues, than other graduate teachers.

In Australia, there has been both growing interest and progress in establishing partnerships between teacher education faculties and schools (Lynch & Smith 2012). Over the past few years, a number of Australian universities have been exploring ways to develop more extensive, integrated placements for pre-service teachers. The Australian Council for Educational Research (2014) report cites examples of programs with strong school-university partnerships, including the MTeach program at the University of Melbourne, Queensland University of Technology's Exceptional Teachers for Disadvantaged Schools Program and the Bachelor of Learning Management at Central Queensland University. Despite this, conceptual and practical difficulties remain in establishing, developing and implementing successful partnerships (Lynch & Smith 2012).

What are the benefits of school-university partnerships?

The relationship between universities and schools is seen as integral to facilitating high quality practical placements (Teacher Education Ministerial Advisory Group 2014). Strong university-school partnerships are thought to benefit not only the pre-service teacher but also university staff, principals, teachers, students and even the broader community (Parliament of Victoria 2005). These benefits may be evident during all stages of the initial teacher education program; from finding a placement to facilitating feedback during and after the placement.

Effective school-university partnerships bridge the gap between theory and practice, which is a commonly cited issue with current teacher education programs in Australia (House of Representatives Standing Committee on Education

and Vocational Training 2007; Teacher Education Ministerial Advisory Group 2014; Australian Council for Educational Research 2014). The *Action Now* report (Teacher Education Ministerial Advisory Group 2014) identified six ways initial teacher education can be improved, including the 'integration of theory and practice through better partnerships between providers and schools' (p. 51). Similarly, a review of university-school partnerships commissioned by Teaching Australia argued that while not all of the failings of pre-service training are related to the practicum, those that are 'can be seen as being solved by enhanced partnership relations between university teacher education faculties and schools' (Teaching Australia 2009, p. 45).

The problems with models that separate classroom experience from teacher education programs have been well highlighted. McKinsey & Company (2007) conducted research to better understand why the world's best performing school systems perform so well. They found that all of the 'better' school systems they studied had integrated professional experience into their teacher education programs. Based on research conducted in the United States, the authors comment that the ineffectiveness of teacher education programs is often because 'the connection between what the trainee teachers do during their training, and what they are expected to be able to do once they arrive in the classroom, is not strong enough' (p. 28).

In the Longitudinal Teacher Education and Workforce Study (Deakin University 2013), many graduate teachers highlighted the need for more collaboration and communication between universities and schools. Participants commented that partnerships should be established so 'teacher training was also part of the ongoing life of a school... not just part of a disconnected university' and 'to enable more regular observation and other opportunities to participate in the broad range of school life' (p. 200). Of the 45 teacher education providers who were interviewed, all highlighted the importance of partnerships with schools.

In Australia, Melbourne University's MTeach program is cited as an example of a program that integrates theory and practice through effective partnerships (Dinham 2012). Pre-service teachers in the program spend two days per week in schools or early childhood education centres from early in their studies. Throughout their placements, pre-service teachers are supported by a school-based 'teaching fellow' and a university based 'clinical specialist'. This approach has been likened to the clinical training of doctors in teaching hospitals (Department of Education and Early Childhood Development 2011) and is thought to enable pre-service teachers to effectively link the theoretical and practical components of their teacher education (University of Melbourne 2012). As part of the course, pre-service teachers are also required to undertake the Clinical Praxis Examination.

This requires pre-service teachers to identify a student, assess the student's current capabilities and then design and implement appropriate teaching and learning strategies. Pre-service teachers then present a 20-minute oral report to a panel of university and school staff (Australian Institute for Teaching and School Leadership 2015c).

In an external evaluation of the MTeach program conducted by the Australian Council for Educational Research, 90 per cent of participants felt that they were 'well' or 'very well' prepared when they began teaching (Scott et al. 2010, cited by Dinham 2012). Principals and other school leaders also reported that MTeach graduates were more mature, confident and capable than those from other universities. The evaluation found the program created effective relationships between theory and practice through collaboration between the university and schools and early childhood settings. It stated 'the extended placement in schools offered by the program allowed students to move more seamlessly between the theory learned at university and opportunities to implement this in practice during their school experience' (Scott et al. 2010, p. 5, cited by Dinham 2012).

What are the characteristics of effective school-university partnerships?

Across the literature, there is agreement that in order to function effectively, school-university partnerships need to have the support of all stakeholders (Teaching Australia 2009). That is, faculty and administration staff at the university, leadership and teachers at the school as well as pre-service teachers themselves. To develop and maintain such partnerships, all parties must invest significant time and commitment (Australian Institute for Teaching and School Leadership 2015a).

A paper by the Australian Institute for Teaching and School Leadership (2015a) identifies a number of characteristics of high-quality school-university partnerships. These include: commitment from schools to deliver quality placements; the engagement of, and clear communication between, university and school staff; and shared support for innovative professional experience practices. The report also notes that partnerships that rely solely on individual connections between faculties and schools are neither sustainable nor equitable. Instead, the paper suggests, sustaining high quality partnerships requires a 'whole of systems' response (p. 16).

A report conducted by Victoria University, and commissioned by Teaching Australia (Teaching Australia 2009), identified and analysed examples of effective and sustainable university-school partnerships across Australia. They found effective partnerships rely on three factors: trust, mutuality and reciprocity. The authors suggest that for a partnership to work, each stakeholder must contribute personal and

professional resources in the form of passion, commitment and professional expertise. Importantly, however, they conclude that successful partnerships are not uniform, and there is no 'singular prescription for the nature of the effective and sustainable university-school partnership' (p. 93).

Allen, Ambrosetti and Turner (2013) used data from studies conducted in two Australian universities to examine how school and university staff perceive the professional experience component of initial teacher education. The two universities differ in a number of ways, including their geographical location and the way that they deliver the initial teacher education programs. Despite these differences, key stakeholders from both universities had similar views about professional experience. Participants suggested that effective school-university partnerships can only be sustained where there is open, regular and meaningful communication between stakeholders. Participants also emphasised the need for the roles and responsibilities to be clearly defined, articulated and enacted.

The UNSW Matraville Education Partnership is an initiative between the University of New South Wales (UNSW) School of Education and Matraville High School. The partnership involves academics and pre-service teachers from UNSW working closely with teachers and students at the school. Pre-service teachers spend extended periods at the school throughout each semester and lead in-school and after-school programs such as music, science and gifted education (The University of New South Wales 2015).

Having only begun in 2015, the partnership aims to enhance initial teacher education by providing pre-service teachers with extended and varied professional experience. It is hoped the diverse nature of the school will allow pre-service teachers to build their professional capacity in areas such as Indigenous education, English as an Additional Language (EAL) and gifted education.

There is not yet any evidence on the partnership's effect on the quality of pre-service teacher education or student learning outcomes. However, the school's principal has said the partnership is already delivering results, including increased enrolments (Offner 2015).

Mentorship and supervision

What are the benefits of effective supervision?

The quality of the professional experience placement is also thought to be largely dependent on the kind of mentoring and support pre-service teachers receive (Hudson & Hudson 2010; Grossman 2010; Australian Institute for Teaching and School Leadership 2015a). Supervising teachers⁴ are appointed to guide and assess pre-service teachers and they can play a critical role in shaping their teaching practices (Hudson & Hudson 2010), as well as reducing the stress associated with transitioning to the school environment (Australian Council for Educational Research 2014).

Effective supervisors are highly valued by pre-service teachers. In a survey of final year teacher education students, conducted on behalf of the then Australian Department of Education, Science and Training (2006), 97 per cent rated having 'experienced and enthusiastic supervising teachers and mentors who have been well-informed on their roles and responsibilities' as important or very important. Similarly, in interviews undertaken as part of the Longitudinal Teacher Education and Workforce Study (Deakin University 2013), graduate teachers highlighted preferences for strong mentoring structures from both the university and teachers in schools.

The supervising process can also serve as a professional development opportunity for the supervisor themselves (Starkey & Rawlins 2011). Ambrosetti (2014) suggests that supervising a pre-service teacher can offer supervisors a range of benefits, including: an opportunity to reflect on, and improve, their own practices; renewed enthusiasm for their job; a chance to make a difference to another's professional and/or personal life; and self-improved work ethic. Supervising a pre-service teacher is also thought to provide the mentor with opportunities for professional learning and development (Hudson 2013).

In a small mixed-method study, Hudson & Hudson (2010) examined the views of 14 supervising teachers. They found that while they were often motivated by the desire to improve the quality of pre-service education, many also saw it as a professional development opportunity. Participants indicated that they would have appreciated further guidance as a way to benefit pre-service teachers but also advance their own skills.

⁴ Terminology including supervising teacher, mentor teacher, associate teacher, co-operating teacher and school based teacher educator are all used to describe the role of teachers who supervise pre-service teachers during their professional experience. In line with the terminology used by the Australian Institute for Teaching and School Leadership, the terms supervising teacher or supervisor will be used in this paper.

What makes an effective supervising teacher?

To be an effective supervising teacher, individuals need specific skills and attributes (Australian Council for Educational Research 2014). The National Council on Teacher Quality report in the United States (2011) suggests that supervising teachers should be experienced and effective teachers and have the insight and ability to be a mentor. Others suggest that supervisors must have strong organisational and interpersonal skills, as well as excellent pedagogical knowledge (Orland-Barak & Hasin 2010 cited by Australian Institute for Teaching and School Leadership 2012). In addition, teachers who meet these criteria must also be willing to take on this role, often where there are few incentives to take on these additional responsibilities.

A paper by the Australian Institute for Teaching and School Leadership (2015a) states that, in order to provide high-quality learning experiences, supervising teachers are required to support pre-service teachers' professional learning while also assessing their classroom teaching performance. The paper identifies a number of key characteristics of high-quality supervising teachers. These include: sharing their expertise and local knowledge, including their own teaching practices; building pre-service teachers' abilities to interpret and use student data; and supporting pre-service teachers to plan and implement appropriate learning programs for students.

A crucial part of a supervisor's role is their ability to provide constructive feedback (Australian Institute for Teaching and School Leadership 2015a; Darling-Hammond & Baratz-Snowden 2005 cited by Dinham 2013). To do this, supervisors need to be able to critique both their own teaching practices as well as those of the pre-service teacher they are supervising (Hudson & Hudson 2010; The South Australian Education Taskforce 2012). The way supervisors deliver this feedback and the amount of time they allocate to meeting with their pre-service teacher is also seen as important (Pridham, Deed & Cox 2013).

Based on a review of the existing literature, the Australian Institute for Teaching and School Leadership (2012) recommends supervisors and pre-service teachers debrief immediately after a lesson so they can discuss moments and events during the class. However, they note that this should be handled carefully and be treated as a two-way dialogue rather than simply an opportunity for the supervisor to provide 'feedback.' The Australian Institute for Teaching and School Leadership cites Chalie et al. (2004), who propose a number of ways to optimise professional dialogues between preservice teachers and their supervisors. These include sharing expectations and concerns prior to starting a conversation and creating a friendly environment in which both parties feel that can openly express their views.

While it is widely recognised that supervisors need to be experienced teachers, experience or qualifications alone are not enough to make someone an effective supervisor (Hudson & Hudson, 2010; Ambrosetti 2014; Keogh et al. 2006). Many have suggested that prospective supervisors should undertake professional development and training in effective mentorship. Although supervisors undertake formal training in some states⁵, this is not consistent across Australia (Australian Council for Educational Research 2014; Keogh et al 2006; Hudson & Hudson 2010).

The placement school

There is also significant debate over the kind of schools pre-service teachers should be placed in. Some argue strongly, for example, that learning in high-achieving schools can provide a more supportive, better functioning environment for pre-service teachers to develop their skills. Others suggest more difficult-to-staff, often low SES, schools can provide opportunities for pre-service teachers to learn how to cater to different students' needs (Ronfeldt 2012; Grossman 2010). However, there is mixed evidence regarding how the characteristics of a placement school impact on pre-service teachers' experiences and, ultimately, preparation to teach.

In a review of peer-reviewed literature published from 1980 -2010, Anderson and Stillman (2013) found that most of the literature provides limited detail about placement settings or uses general terms (i.e. urban or diverse). They note that this lack of detail limits what can be discerned about the role contextual variation plays in pre-service teachers' learning. The authors found the majority of research regarding pre-service teachers' attitudes suggests placements in urban and/or high-needs schools enhance feelings of efficacy and preparedness. Yet they also found some research which suggested placements in these types of schools have mixed, neutral or even negative effects. They conclude that there is a need for 'more longitudinal analyses that address the situated and mediated nature of preservice teachers' learning in the field' (p. 3).

Ronfeldt (2012) completed a study of almost 3,000 New York City teachers to examine the kinds of schools that make for the best practical placements. Ronfeldt separated schools that were 'difficult-to-staff' based on student characteristics, such as ethnic background and the percentage that received free lunch, as well as staff retention rates. The study found that learning to teach in easier-to-staff schools has positive effects on teacher retention and student achievement gains, even for teachers who end up working in difficult-to-staff schools. However, Ronfeldt notes that the study's findings are not definitive and do not offer any explanation as to what it is about easier-to-staff schools that make them positive sites for teacher learning.

⁵ For instance, all mentor teachers in Victorian government schools receive training through the Teacher Mentor Support Program.

In a similar, more recent study, Ronfeldt (2015) examined whether certain kinds of field placement schools predict later teacher performance. The analysis focused on 752 teachers who undertook their professional experience placements across 259 different schools and were subsequently employed in 308 different schools. The study found that teachers who learned to teach in placements with stronger teacher collaboration, achievement gains and, to a lesser extent, teacher retention, were subsequently more effective at raising student achievement. Results suggest that better functioning school organisations with positive work environments make more desirable settings for teacher learning.

Research regarding Professional Development Schools in the United States has found that, in general, placement in one of these schools has benefits for prospective teachers (Grossman 2010; Ronfeldt 2015). Teachers prepared in such settings generally report feeling better prepared and more efficacious for their first year of teaching (Clift & Brady 2005, cited by Grossman 2010). There is also some evidence to suggest that teachers prepared in such settings are more likely to stay in teaching (Latham & Vogt 2007, cited by Grossman 2010). Yet Grossman (2010) comments that, despite the generally positive findings regarding PDSs, it is hard to distinguish what features of such schools best support teachers' development. PDSs are often integrated in teacher education programs that are strong in other ways as well, making it difficult to isolate the effect of the placement in the PDS itself. Nonetheless, Grossman concludes that existing evidence suggests 'prospective teachers benefit from placement in settings that are specifically designed to support their learning' (p. 4).

Most of the articles reviewed by Anderson and Stillman (2013) indicated that professional experience supported pre-service teachers to develop greater awareness of cultural diversity in classrooms and more sophisticated competencies in working with diverse students. Yet they also refer to some research which suggests that placing pre-service teachers in urban schools doesn't necessarily change their stereotypical beliefs about students, schools or communities, and in some instances can reinforce preconceived judgments. They also cite evidence that pre-service teachers felt less confident about teaching diverse learners in urban and/or high-needs schools after undertaking professional experience in similar settings.

In Australia, participants in the Longitudinal Teacher Education and Workforce Study (Deakin University 2013) highlighted the value of completing a variety of practical placements in diverse settings. The authors of the report comment that there is a clear need to prepare graduate teachers to learn in a range of settings that typify those in which teachers work. They note 'responses indicate the need for practical application of skills and knowledge in a range

of settings, schools and communities, where they can draw on frames of reference or a developing repertoire of ideas to handle a range of issues'. This sentiment is echoed in a paper by the Australian Institute for Teaching and School Leadership (2015a), which comments 'It is important that PSTs [pre-service teachers] experience a range of educational settings that are different from their own and are diverse with respect to gender, culture, social, location, economic and educational resources' (p. 8).

The need for teachers to gain a range of experience has been highlighted by the results of a number of surveys, which have shown that many teachers do not feel prepared to cater for diverse student needs. In 2013, the Staff in Australia's Schools Survey (Australian Council for Educational Research 2014a) only 23 per cent of new primary school teachers and 28 per cent of new secondary teachers felt that their initial teacher education was very helpful or helpful in preparing them for teaching Aboriginal and Torres Strait Islander students. Similarly, in the Australian Education Union New Educators Survey 2008, almost 70 per cent of participants did not think their training provided adequate grounding to teach particular groups of students, such as students with disability or students from non-English speaking backgrounds.

The structure and duration of professional experience

Evidence regarding the importance of the structure, duration and timing of professional experience is mixed. The minimum number of days that teacher education programs must allocate to pre-service teachers' professional experience is mandated by the *Accreditation of Initial Teacher Education Programs in Australia: Standards and Procedures*. The Standards, set by the Australian Institute for Teaching and School Leadership (2015), also provide some guidance as to how the professional experience component must be structured and supported. However, the total time allocated to professional experience, as well as when it occurs and how it is structured, varies widely across tertiary institutions.

Extended professional experience is a feature of education programs that prepare high-quality teachers (Australian Council for Education Research 2014). Internationally, there has been a move towards extended practical placements in schools (Australian Council for Education Research 2014; Teacher Education Ministerial Advisory Group 2014). The recent trend in the United States and England, for example, has been towards longer and earlier professional experience (Grossman 2010; Teacher Education Ministerial Advisory Group 2014).

While spending more time in schools creates more potential opportunities for learning, there is currently little research regarding the impact of the length of experience (Grossman 2010). Moreover, there is some evidence that the length of

the placement has little or no effect. In a study based on survey data of over 1000 prospective teachers, Ronfeldt and Reiningger (2012) found that lengthening practical placements had little effect on teachers' perceptions of their preparedness and efficacy. Similarly, in a Victorian study, the authors found no significant relationship between the number of days pre-service teachers spent in schools and their perceptions of their preparedness to teach (Australian Council for Educational Research 2004).

Simply increasing the amount of time pre-service teachers spend in schools is unlikely to result in better preparation without consideration of other essential features of professional experience (Grossman 2010; Australian Council for Educational Research 2014; British Educational Research Association 2014). That is, simply increasing the quantity, without considering the quality, is unlikely to make a difference to the overall value of the experience. The Australian Council for Educational Research (2014) comments 'Extended time in schools is necessary, but must occur in conjunction with strong connections between theory and professional experiences, and where schools and universities share an understanding of the purpose of professional experience for students' (p. 20). Similarly, Grossman (2010) notes 'More time in a problematic setting is not necessarily better than less time in a high-functioning classroom with strong mentor' (2010, p. 3).

Across the literature there appears to be a consensus that professional experience should commence early in the teacher education course. The *Action Now* report (Teacher Education Ministerial Advisory Group 2014) concludes that early and regular professional placements are ideal. The report refers to a number of international studies that have found high-performing and improving education systems have moved practical components to the beginning of ITE courses. In response to the Teacher Education Ministerial Advisory Group's recommendations, the Commonwealth Government stated that professional experience 'should be provided to students as early in their initial teacher education training as possible.' It is thought that commencing professional experience early in teacher education programs allows pre-service teachers to 'test' whether teaching is an appropriate career for them. It also provides an opportunity to assess their ability and apply their theoretical knowledge (NSW Government 2013; Teacher Education Ministerial Advisory Group 2014; Australian Institute for Teaching and School Leadership 2015a).

The way professional experience is structured varies across courses and higher education providers. Pre-service teachers may undertake their professional experience one to two days per week on a continuing basis, in blocks and/or as longer internships.⁶ There is no clear evidence as to the optimal way to structure professional experience, and findings to date have been mixed. Most of the discussion in this area has focused on practical benefits or issues, rather than whether different structures impact on the quality of pre-service teacher education, and ultimately, the quality of graduate teachers.

The *Top of the Class* report (House of Representatives Standing Committee on Education and Vocational Training 2007) suggests both concurrent placements, undertaken one to two days a week on a continuing basis, and block placements⁷ can have benefits. Block placements are often favoured because they provide pre-service teachers with continuity and can allow them to engage more fully with the school environment, yet these placements can present difficulties for teaching students who are also working while undertaking their studies. Placing students in schools one day a week on a continuing basis can also be valuable, as undertaking professional experience while attending university can help students integrate theory and practice.

Pridham, Deed and Cox (2013) examined findings from a case study involving 20 pre-service teachers at La Trobe University's Graduate Diploma of Education (Secondary) in 2011. The participants were all part of an immersive practicum experience trialed by the university, in which they undertook practical experience two days a week. They found that being in schools for only two days per week resulted in communication problems and impacted pre-service teachers' ability to access mentors and attend meetings.

In the Longitudinal Teacher Education and Workforce Study (Deakin University 2013), both participating graduate teachers and principals expressed a preference for a combination of shorter placements and block placements of 5 weeks in duration. Participants also felt internships in the final part of the program were valuable. Principals, in particular, valued extended placements in schools, such as internships, to provide an opportunity to assess graduates' suitability for employment and as way to help interns into employment upon completion of their course.

6 The definition of the term internship in this context varies, but it is generally used to refer to a more 'independent' placement undertaken towards the end of a teacher education program. Internships are often undertaken in block of six to 10 weeks, during which time the intern takes full responsibility for planning, developing, teaching, assessing and reporting for a class or classes.

7 Block placements can vary in length, but the term is used to refer to a placement ranging from 2-6 weeks in length, during which time pre-service teachers undertake professional experience at a school fulltime.

Practical considerations

Resources and funding for schools

A lack of funding and resources, at both a school and university level, is often cited as a barrier to facilitating effective partnerships and, as a result, quality practical placements. Findings from the Practicum Partnerships Project (Australian Learning & Teaching Council 2009) identified a need for more careful consideration of the costs of, and resources needed for, the practical component of teacher education. The study found that schools absorb a significant portion of the workload for the coordination and supervision of practical placements and the costs associated with this are not formally considered in school budgets.

In a study by Hudson & Hudson (2010), discussed above, supervisors identified time as a significant issue, particularly as they were expected to take on the supervisor role on top of their full-time role as a teacher. This included finding time to meet and build a relationship prior to the placement and scheduling catch ups throughout the placement to provide feedback. Similar issues were raised in a discussion paper by the Association of Heads of Independent Schools of Australia, prepared for the Australian Institute for Teaching and School Leadership. The paper notes that schools and/or teachers can be reluctant to take on too many pre-service teachers due to the additional workload this involves (Association of Heads of Independent Schools of Australia 2015).

In their report, the Australian Council for Educational Research (2014) also acknowledges that providing quality professional experience is resource-intensive. However, they comment 'there are significant consequences of poor preparation of teachers...which should focus attention on the need to meet these challenges' (p. 26).

Conclusion

Professional experience forms an integral part of many professional education programs both in Australia and internationally. While there is general agreement that professional experience is an important part of initial teacher education, there is currently little empirical research regarding the links between professional experience and long-term teacher quality. Surveys suggest that graduate teachers highly value the practical component of teacher education, yet evidence regarding how this actually impacts on their long-term effectiveness as teachers is limited. This makes it difficult to draw conclusions about the impact of professional experience on student learning outcomes. As a report by the Australian Institute for Teaching and Social Leadership (2015b) comments 'The ultimate worth of any initial teacher

Availability of places

Another ongoing issue is the shortage of practical placements, particularly in rural and remote communities. Data on professional experience placements is not currently collected in a consistent manner for all pre-service teachers in NSW. However, in 2012, 9,371 students commenced education programs and there were a total of 25,395 enrolments in initial teacher education programs across the state (Centre for Education Statistics and Evaluation 2014). Although universities are required to incorporate professional experience into their courses, there is no obligation on schools to offer places (House Standing Committee on Education and Vocational Training 2007). As noted, there have been some suggestions that schools are reluctant to offer placements due to the resources this requires and the lack of financial incentives or rewards.

The Teacher Education Ministerial Advisory Group (2014) found schools, school systems and higher education providers face challenges in ensuring a sufficient number of professional experience placements are available for all pre-service teachers. The Advisory Group heard of instances where individual pre-service teachers were required to personally source and arrange their professional experience placements. Similar concerns have been raised in other inquiries (for example, see: House Standing Committee on Education and Vocational Training, 2007).

A paper by the Australian Institute for Teaching and School Leadership (2013) suggests that the lack of placements means universities are not necessarily able to seek out high-quality placements for their students. The report notes: 'In practice, teacher educators report that the pressure to secure sufficient placements for their students means that they do not have the luxury of securing quality mentors and coaches but must accept any placements that are offered' (p. 13).

education program must be judged on the basis of the collective impact of its graduates on student learning' (p. 18).

Across the literature there are a number of common suggestions regarding what constitutes a high-quality professional placement. Common suggestions include: commencing professional experience early in initial teacher education programs, establishing clear links between university coursework and practice, genuine school-university partnerships and effective supervisors within schools. Although these suggestions are promising, more research is needed to establish the impact of these on the overall effectiveness of teacher education, and ultimately, teacher quality.

References

- Allen, J, Ambrosetti, A & Turner, D 2013, 'How School and University Supervising Staff Perceive the Pre-Service Teacher Education Practicum: A Comparative Study', *Australian Journal of Teacher Education*, vol. 38, no. 4.
- Allen, J & Peach, D 2007, 'Exploring connections between the in-field and on-campus components of preservice teacher education program: a student perspective', *Asia-Pacific Journal of Cooperative Education*, vol. 8, no. 1, p. 23-26.
- Ambrosetti, A 2014, 'Are You Ready to be a Mentor? Preparing Teachers for Mentoring Pre-Service Teachers', *Australian Journal of Teacher Education*, vol. 39, no. 6.
- Anderson, L & Stillman, J 2013, 'Student Teaching's Contribution to Preservice Teacher Development: A Review of Research Focused on the Preparation of Teachers for Urban and High-Needs Contexts', *Review of Educational Research*, vol. 83, no. 1, p. 3-69.
- Architects Accreditation Council of Australia, *Registration as an Architect*, viewed at 16 October 2015 <http://www.aaca.org.au/registration-as-an-architect>
- Association of Heads of Independent Schools of Australia 2015, *Initial Teacher Education: School-based Practical Experience*, Discussion Paper.
- Australian Association of Social Workers, *Australian Social Work Education and Accreditation Standards*, viewed 1 October 2015 <https://www.aasw.asn.au/document/item/100>
- Australian Council for Educational Research 2004, *Teacher Education Courses in Victoria: Perceptions of Their Effectiveness And Factors Affecting Their Impact*, report prepared by L Ingvarson, A Beavis and E Kleinhenz.
- Australian Council for Educational Research 2014, *Best Practice Teacher Education Programs and Australia's Own Programs*, prepared by L Ingvarson, K Reid, S Buckley, E Kleinhenz & G Masters.
- Australian Council for Educational Research 2014a, *Staff in Australia's schools 2013: Main report on the survey*, Prepared by P McKenzie, P Weldson, G Rowley, M Murphy & J McMillan.
- Australian Education Union 2008, *New Educators Survey 2008*, Results and Report.
- Australian Health Ministers' Advisory Council 2015, *Review of Medical Intern Training*, Discussion Paper.
- Australian Institute for Teaching and Social Leadership 2012, *Literature review and environmental scan: Supervising professional experience students*, report prepared by P Renshaw.
- Australian Institute for Teaching and School Leadership 2013, *Early Teacher Development – Trends in Initial Teacher Education*, report prepared by G Hall.
- Australian Institute for Teaching and School Leadership 2015, *Accreditation of initial teacher education programs in Australia*.
- Australian Institute for Teaching and School Leadership 2015a, *Key components of effective professional experience in initial teacher education in Australia*, report prepared by R Le Cornu.
- Australian Institute for Teaching and School Leadership 2015b, *Issues and perspectives relevant to the development of an approach to the accreditation of initial teacher education in Australia based on evidence of impact*, report prepared by S Dinham.
- Australian Institute for Teaching and School Leadership 2015c, *Standardised Assessment of Initial Teacher Education: Environmental Scan and Case Studies*, report prepared by W Loudon.
- Australian Learning & Teaching Council 2009, *Practicum Partnerships: Exploring Models of Practicum Organisation in Teacher Education for a Standards-Based Profession*, report prepared by C Ure.
- Australian Medical Association n.d., *How to become a doctor*, viewed 1 October 2015 <https://ama.com.au/careers/becoming-a-doctor>
- Australian Nursing & Midwifery Accreditation Council 2012, *Registered Nurse Accreditation Standards 2012*.
- Billett, S 2009, *Realising the educational worth of integrating work experiences in higher education*, *Studies in Higher Education*, vol. 34, no. 7, pp. 827-843.
- Boyd, D, Grossman, P, Lankford, H, Loeb, S & Wyckoff, J 2009, 'Teacher Preparation and student achievement', *Education Evaluation and Policy Analysis*, vol. 31, no. 4, pp. 416-440.
- British Educational Research Association 2014, *The Role of Research in Teacher Education: Reviewing the Evidence*, Interim Report.
- Centre for Education Statistics and Evaluation 2014, *Workforce profile of the NSW teaching profession 2014*.
- Chartered Accountants Australia and New Zealand n.d., *Chartered Accountants Program*, viewed 19 Oct 2015 <http://www.charteredaccountants.com.au/Candidates/The-Chartered-Accountants-Program>
- Chartered Accountants Australia and New Zealand n.d., *Demonstrating Competency*, viewed 19 Oct 2015 <http://www.charteredaccountants.com.au/Candidates/The-Chartered-Accountants-Program/Practical-experience/Demonstrating-competency>
- Deakin University, *Clinical Schools*, viewed 16 October 2015 <http://www.deakin.edu.au/medicine/clinical-schools>
- Darling-Hammond, L 2006, 'Constructing 21st-century teacher education', *Journal of Teacher Education*, vol. 57, no. 3, pp. 300-314.
- Darling-Hammond, L 2010, 'Teacher Education and the American Future', *Journal of Teacher Education*, vol. 61, no. 1-2, p. 35-47.
- Darling-Hammond L, Chung, R & Frelow, F 2002, 'Variation in Teacher Preparation: How Well Do Different Pathways Prepared Teachers to Teach?', *Journal of Teacher Education*, vol. 22, no. 286, pp. 286-302.
- Deakin University 2013, *Longitudinal Teacher Education and Workforce Study*, main report, report prepared by D Mayer, B Doecke, P Ho, J Kline, A Kosogriz, J Moss, S North, B Walker-Gibbs & P Hodder.
- Deakin University 2013, *Longitudinal Teacher Education and Workforce Study (LTEWS)*, Final Report.
- Department of Education and Training 2015, *Australian Government Response*.
- Department of Education, Science and Training 2006, *Survey of Final Year Teacher Education Students, Surveys & Workforce Analysis Section*.
- Department of Education and Early Childhood Development 2011, *School Centres for Teaching Excellence*, discussion paper.

- Dinham, S 2012, 'Walking the walk: The need for school leaders to embrace teaching as a clinical practice profession', *School Improvement: What does research tell us about effective strategies?*, Australian Council for Educational Research, Sydney Convention and Exhibition Centre, Sydney, pp. 34-43.
- Dinham, S 2013, 'Connecting clinical teaching practice with instructional leadership', *Australian Journal of Education*, vol. 57, vol. 3.
- Evans, M 2013, The Practicum & Initial Teacher Education, *Australian Institute for Teaching and School Leadership*, viewed at 1 October 2015 <http://www.newsroom.aitsl.edu.au/blog/practicum-initial-teacher-education>
- Engineers Australia 2008, *Accreditation Criteria Guidelines*.
- Grossman P, Compton C, Igra D, Ronfeldt M, Shahan E & Williamson P 2009, 'Teaching Practice: A Cross-Professional Perspective', *Teacher College Record*, vol. 11, no.9, pp. 2055-2100.
- Grossman, P 2010, *Learning to practice: The design of clinical experience in teacher preparation*, policy brief, report prepared for American Association of Colleges for Teacher Education & National Education Association.
- Hattie, J 2009, *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*, Routledge, London.
- Health Workforce Australia 2014, *Clinical Training Profile: Nursing*.
- House of Representatives Standing Committee on Education and Vocational Training 2007, *Top of the Class Report on the inquiry into teacher education*, The Parliament of the Commonwealth of Australia.
- Hudson, P & Hudson, S 2010, 'Mentor educators' understandings of mentoring preservice primary teachers', *The International Journal of Learning*, vol. 17, no. 2, pp. 157-170.
- Hudson, P 2013, 'Mentoring as professional development: 'Growth for both' mentor and mentee', *Professional Development in Education*, vol. 39, no. 5, pp. 771-783.
- Institute of Chartered Accounts Australia & New Zealand Institute of Chartered Accountants 2012, *Candidate Practical Experience Guidelines*.
- Latham, N & Vogt, W 2007, 'Do Professional Development Schools Reduce Teacher Attrition?', *Journal of Teacher Education*, vol. 58 no. 2, pp. 153-167.
- Levine, A 2006, *Educating School Teachers*, The Education Schools Project, Washington DC.
- Lynch, D & Smith, R 2012, 'Teacher Education Partnerships: An Australian Research-Based Perspective', *Australian Journal of Teacher Education*, vol. 37, no. 11.
- Kennedy, M, Billet, S, Gheradi, S & Grealish, L 2015, 'Practice-Based Learning in Higher Education: Jostling Cultures', in M Kennedy, S Billett, S Gheradi & L Grealish (eds), *Practice-based Learning in Higher Education*, Springer, Netherlands, pp. 1-13.
- Keogh, J, Dole, S & Hudson, E 2006, *Supervisor or mentor? Questioning the quality of pre-service teacher practicum experiences*, Paper presented at Australian Association for Research in Education [AARE] 2006 International Education Research Conference, Adelaide, 27-30 November.
- McKinsey & Company 2007, *How the world's best-performing school systems come out on top*, report prepared by M Barber and M Mourshed.
- Medical Board of Australia n.d., *Interns*, Medical Board of Australia, viewed at 19 October 2015 <http://www.medicalboard.gov.au/Registration/Interns.aspx>
- National Council for Accreditation of Teacher Education 2010, *Transforming Teacher Education Through Clinical Practice: A National Strategy To Prepare Effective Teachers*, report prepared by the NCATE Blue Ribbon Panel.
- National Council for Accreditation of Teacher Education, *Professional Development Schools*, viewed 1 September 2015 <http://www.ncate.org/ProfessionalDevelopmentSchools/tabid/497/Default.aspx>
- National Council on Teacher Quality 2011, *Student Teaching in the United States*, report prepared by J Greenberg, L Pomerance & K Walsh.
- NSW Department of Education and Training 2000, *Quality Matters, Revitalising Teacher Education: Critical times, critical choices*, Report of the Review of Teacher Education.
- NSW Government 2013, *Great Teaching, Inspired Learning, Analysis of responses to the discussion paper*.
- NSW Government 2012, *Great Teaching, Inspired Learning, discussion paper*.
- Offner, S 2015, *The sky's the limit as UNSW teams up with Matraville Sports High School*, University of New South Wales, viewed at 9 December 2015, <http://newsroom.unsw.edu.au/news/social-affairs/sky%E2%80%99s-limit-unsw-teams-matraville-sports-high-school>
- Organisation for Economic Co-operation and Development 2012, *Preparing Teachers and Developing School Leaders for the 21st Century: Lessons from around the World*, report prepared by A Schleicher.
- Parliament of Victoria Education and Training Committee 2005, *Step Up, Step In, Step Out: Report on the Inquiry into the Suitability of Pre-service Teacher Training in Victoria*, Final Report.
- Partnership for Teacher Quality 2010, *Learning to practice: The design of clinical experience in teacher preparation*, report prepared by P Grossman.
- PennState n.d., *What is a Professional Development School?*, viewed 14 October 2015 <https://www.ed.psu.edu/pds/elementary/general-information/what-is-a-professional-development-school>
- Pridham, B, Deed, C & Cox, P 2013, 'Workplace-Based Practicum: Enabling Expansive Practices', *Australian Journal of Teacher Education*, vol. 38, no. 4, p. 50-64.
- Productivity Commission 2012, *Schools Workforce*, research report.
- Psychology Board of Australia 2010, *General registration standard*.
- Ronfeldt, M 2012, *Where Should Student Teachers Learn to Teach?*, Stanford University.
- Ronfeldt, M & Reiningger, M 2012, 'More of better student teaching?', *Teaching and Teacher Education*, vol. 28, no. 8, p. 1091-1106.
- Ronfeldt, M 2015, 'Field Placement Schools and Instructional Effectiveness', *Journal of Teacher Education*, vol. 66, no. 4, p. 304-320.

Stanford Center for Opportunity Policy in Education 2010, *The Secret to Finland's Success: Education Teachers*, research brief, report prepared by P Sahlberg.

Starkey, L & Rawlins, P 2011, *Teaching Practicum in 21st Century New Zealand*, Ako Aotearoa, National Centre for Tertiary Teaching Excellence.

Teacher Education Ministerial Advisory Group 2014, *Action Now: Classroom Ready Teachers*, report prepared by G Craven, K Beswick, J Fleming, T Fletcher, M Green, B Jensen, E Leionen & F Rickards.

Teaching Australia 2009, *Effective and Sustainable University-School Partnerships*, report prepared by T Kruger, A Davies, B Eckersley, F Newell and B Cherednichenko.

The South Australian Teacher Education Taskforce 2012, *Improving Professional Experience for Pre-service Teachers*.

The University of Melbourne 2012, *Great Teaching, Inspired Learning: MGSE response*, report prepared by F Rickards, J Hattie and S Dinham.

The University of New South Wales n.d., *UNSW Matraville Education Partnership*, viewed at 9 December 2015 <https://education.arts.unsw.edu.au/about-us/community-engagement/matraville-education-partnership/>

The University of Sydney n.d., *MD Course Structure*, viewed 16 October 2015 <https://sydney.edu.au/medicine/study/md/course-structure.php#study>

Centre for Education Statistics and Evaluation
GPO Box 33
Sydney NSW 2001
Australia

 02 9561 1211

 cese@det.nsw.edu.au

 www.cese.nsw.gov.au

NSW Department of Education

