

Australian Education Review

Building quality in teaching and teacher education



Nan Bahr
with Suzanne Mellor

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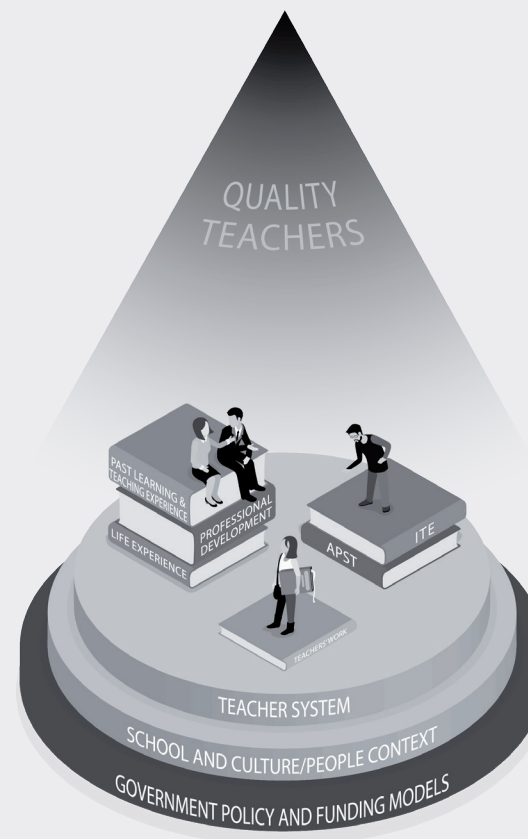
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Foreword



In the midst of rapidly-changing work environments that are driven by innovation, workers in Australia are expected to continually adapt and keep up with new information and practices. Workers within the teaching profession are no different. Teaching is a profession that is beset by changes due to a constant re-conceptualisation and restructuring of education, based oft times on political whim or positioning, placing demands on teachers and teacher educators to develop new knowledge and skills in being responsive to such expectations. Additionally, teachers' work today is multifaceted as they undertake matters associated with curriculum, students, parents, the school community, economic and societal crises as well as government initiatives. 'These are tough times to be a teacher' (Smylie, 1999, p59). The publication of this AER is timely as it contemplates and reviews this whole landscape, positions itself most firmly in relation to the issues, and indicates a need for more attention be paid to the ways that can lead to the making of quality teachers.

Clearly, the professions of teaching and teacher educators are coming under increasing critique from all sectors of the community. Not much of this critique is evidence based and yet the question about the quality of teachers in Australia continues to permeate the political landscape. Ministers of Education across Australia are continually raising anecdotal cases of students who fail as a result of seemingly poor or inappropriate teaching. Parents continuously demand more of schools to compensate for the inadequacies of families and social agencies in meeting the demands of children in crisis. The media is flooded with alarming stories of children who are 'out of control'. On reflection, teachers and teacher educators are called on more and more to enact new ways of engagement to 'save our society' from our children (Aspland, 2011). On examination it is easy to see that teaching has become a difficult profession, both nationally and internationally in western civilisations. As a consequence, the challenges for teacher educators are seriously complex.

Like other domains within industry, education is no longer sure and certain. Ways of understanding and being in the world of teaching and education are continually shifting, and teachers are learning to live with uncertainty and complexity. It is vastly different from when many teachers were prepared to enter the profession some thirty or forty years ago and yet, it could be argued that the education system has not really undergone serious structural change during the same period of time. It is true that many innovations have been implemented at the micro levels of schooling and teacher development. However, at the macro level of reform, education systems and teacher education institutions do not reflect the changing dynamics of other sectors such as business or industry. In fact in response to such uncertainty, governments in Australia have increased levels of regulation

in both schools and universities, ostensibly in the interests of enhancing teacher quality. The correlation between regulation of the profession and enhanced quality outcomes for students is highly contestable.

With fruitful economic reform in Australia, school graduates are well placed to engage in education that promises a successful career pathway and employment opportunities. However, the world ahead of them is fraught with diverse and differentiated career pathways, with many Australians undertaking up to five career changes in a lifetime. It is significant at this point to ask the question as to whether schools are facilitating learning pathways that compliment this diversity. Further, are teacher education programs preparing teachers for such a challenge? It is evident that the new work order is demanding a very different type of worker: one that is self-initiated and collaborative; responsive and reactive; is able to interface with technology and communicate and is capable of creating new social identities. Has the school curriculum undergone a process of differentiation in such a way as is necessary to develop these qualities in our school leavers? Has teacher education been responsive to such a shift in teacher preparation? It can be argued that instead of opening up the space for innovative thinking about the future roles of teachers, governments have done the reverse. With the introduction of national set professional standards for teachers, teachers' roles have been constrained into a set of competency-like behaviors that dictate the knowledge and capacities required to become a teacher. How this reductionist approach to dictating the quality of teachers is likely to enhance the education of young people is a debate that is currently underway in Australia. This review paper engages constructively with many aspects of this 'debate'.

Learning within the institutions of schools and universities can be problematic for both students and teachers, as they are challenged by far ranging agendas that intersect with curriculum content, pedagogy and assessment. While some students in classrooms may feel totally at ease with their teaching and learning interactions in traditional educational settings, many experience a bifurcated world while attending school. This bifurcation can be lived out in many ways. Some school students may comply and live out the expectations of their teachers and school administrators, despite them being incongruent with their own ideals in relation to learning. Other students, as we know, live out the incongruences through disruptions, non-compliance, disrespectful engagement and disconnection. It is clear to most practicing teachers and principals that the econo-scape, the edu-scape and the reality of schooling is fraught with tensions, uncertainty and incongruencies that are leaving many stakeholders – teachers, students and parents – feeling disengaged, demoralized and trivialized within education. The confluence of educational regulation, marketisation, newly-invigorated testing regimes, and declining investments in education clearly exacerbate the situation in the context of Australia.

In this context teachers and teacher educators are privy to multiple change agendas. These include the following:

- New forms of knowledge through an emerging national curriculum
- New forms of pedagogies that call on more active engagement of students in learning that is connected to the real world
- New forms of assessment that call for the centrality of learning and yet at the same time subject students to national testing
- New forms of learning engagement that demand the centrality of student interaction with technology and collaborative or networked learning
- New forms of quality assurance and the active monitoring of teacher quality; surveillance based on a lack of public confidence in the profession.

Concurrently, it could be argued that teachers and teacher educators are becoming more critically conscious of what is involved in the complex business of teaching and learning. Further, teachers are experiencing pedagogic identity crises themselves, where personal identities are confronted and challenged by the changing clientele and systemic demands.

Teacher educators may or may not be addressing all of these forces, as they too, are undergoing a professional crisis, as higher education institutions become more regulated on a number of fronts. Teacher educators are searching to find a balance, between compliance with regulatory matters of governance and the innovation required to cater for the changing nature of teachers' work, that is central to teacher preparation. The newly-formulated national program standards for the accreditation of initial teacher education, introduced in 2011, exacerbates the situation by reducing teacher preparation and the complexities of teachers' work to a set of competency-based behaviours more aligned the post-war era and the massification of education. The complexities inherent in teaching in today's complex world are ignored. Further, the lack of regard for the personal attributes of teachers as central to quality teaching is worrisome. To suggest that such a reductionist process will enhance the quality of teacher graduates in postmodern times is highly contestable to say the least.

In the contexts of new times, both university and school students expect, and many demand, that learning is no longer restricted by traditional educational structures of time, space and rules of engagement. In times like the present when innovation is called for, the conceptions of learning that are taken up in educational institutions must reflect a paradigm that values collaboration, collegiality, connectivity and the ongoing cycle of knowledge construction, deconstruction and reconstruction as central to higher level thinking. This of course implies new roles for teachers and teacher educators – a relocation of the facilitation of learning into more open spaces (both virtual and material); new ways of managing knowledge; and the establishment of learning communities, in which the traditional teacher is one of many diverse learners engaging in education.

It is both the nature of educational clients that are changing and also the manner in which teachers engage with these clients, the students, that is of significance. What teachers and teacher educators are experiencing in Australian educational communities is a differentiated clientele who require a differentiated curriculum and differentiated forms of learning engagement that are responsive to their specific needs. In a context of a highly regulated profession, both in schools and universities, this is nigh-on impossible to achieve. The responsibilities and desires of teacher educators to enhance the quality of teachers for the future are severely challenged in a highly regulated context. The business of meeting the requirements of accreditation has seemingly become the dominant discourse in teacher education, replacing innovation and rigour in designing teacher education curriculum that might guarantee quality graduates and strengthen the future of the teaching profession.

As government continues to overregulate the education profession, the challenge to be responsive to change and prepare teachers for the future seems impossible to achieve. However, if teachers and teacher educators do not differentiate the curriculum products and processes, they will continue to fail to engage new generation students in meaningful, lifelong learning. Teachers and teacher educators must differentiate the way they currently work in changing curriculum contexts to accommodate the diversifying clientele. Surely this is what quality teaching is! To think that such a process can be reduced to the development of a set of competency-based standards is what is problematic for this profession.

More specifically, the profession must move away from the regulator-imposed normative conceptions of teaching. Within the paradigm of normativity, the constructs of knowledge are envisaged as finite – bodies of knowledge that are fixed and pre-determined. The delivery of a bounded view of knowledge is transmissive, is highly unproblematic and largely mono-cultural in nature. Underpinning this view of knowledge is a belief that student learning is primarily about the acquisition of finite and factual material delivered by experts, mainly through didactic means and demonstration that leads to the understanding of pre-specified content. The purpose of schooling, and the place of teachers in this conception of education is reductionist in nature, designed to largely sustain the constructs, structures and functions of the existing society. In a context such as this, government regulation is easily facilitated, education remains bounded and normativity is sustained.

In contrast, if teachers and teacher educators wish to reshape education, so it is aligned to the needs of the next generation of learners, the profession must be reconceptualised as

knowledge managers who are called upon to facilitate learning through social networks of expert teams and new patterns of collaboration and multidisciplinary partners. They will be, indeed already are, called upon to replace the singular classroom and its inherent power relations, with new communities of learners who engage both locally and globally, through personal and technological forms of communication, interaction, debate and discussion in the place of didactic instruction. The monological classroom discourse is replaced by spirited debate. The purposes of this type of educational encounter are much more closely aligned to the needs of new generation learners, and they reflect a set of principles that enable the concepts of differentiation that are outlined above.

This re-conceptualisation of education for the new generation of learners calls upon academics, and the broader profession, to think differently about teacher preparation, to reshape educational institutions; to become learning organisations that offer a range of educational programs, led by professional teachers who are better able to respond to a diverse range of learners' needs, accessibility and capacities. Such professional, complex personal and intellectual thinking and engagement reflect the actions of quality teachers – actions that cannot be reduced to technical competencies.

What teacher educators must immediately do is to question whether the current role of teacher education, teachers and the constructs of the profession are in need of reinvention. While this seems like a simple request, in an environment of regulation and compliance, it is highly problematic for practitioners and stakeholders. To more clearly understand why the reconceptualization of teachers' work for the future is seemingly impossible, teacher educators need to become more cognisant of the compliance that currently surrounds them and of the debilitating and reductionist impacts it has on them and their practices. To not do so is irresponsible. This review is a strident call for teachers and teacher educators to reclaim their profession and build a future for this nation through the re-conceptualisation of schooling, teachers' work and teacher preparation. It is through action of this kind, not by regulation, that we will build and sustain excellent teacher preparation courses that enable quality teacher graduates who will guarantee that all students have access to meaningful learning experiences for now and in preparation for the future.

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Introduction to the review

This review paper addresses conceptions of quality for teachers, teaching and teacher education.

Quality teaching for every learner is an admirable goal, but it is not entirely clear what the key features of quality might be for teaching. First let's consider the concept of quality very broadly.

Pirsig's *Zen and the Art of Motorcycle Maintenance* (1974), and the later *Lila* (1991), are not often referred to by academics when they discuss the concept of quality, and certainly not when in any discourse on teacher education. However, Pirsig's insight into the problem of understanding 'quality', through an examination of the Sophists' legacy and his own insights, is instructive. Pirsig writes:

What I mean (and everybody else means) by the word 'quality' cannot be broken down into subjects and predicates. This is not because Quality is so mysterious but because Quality is so simple, immediate and direct ... That is why Quality cannot be defined. If we do define it we are defining something less than Quality itself.

(Pirsig, 1974, p. 252)

Pirsig is telling us that it is fruitless to try and create lists of competencies and capabilities in a quest to define 'quality'. He is telling us that 'quality', although immediately apparent, eludes all attempts at explanation and deconstruction. Pirsig's key idea is that the observer predetermines 'quality', because the tools available to describe the 'quality' must be found inside what is already known. This introspection then leads us back rather than forward, to a new perspective and understanding of 'quality'. He argues that it leads us to try and imitate 'quality' without trying to understand it, and through an attempt at imitation we kill it. That is:

It is the little, pathetic attempts at Quality that kill.

(Pirsig, 1974, p. 356).

So if we accept Pirsig's argument, and use it to inform our quest for 'quality' in teaching, and in teacher education, it would seem 'quality' is not served by attempts at deconstruction and atomised attention. Pirsig refers to Phaedrus in Plato's dialogue (370 BC), where Socrates appears to equate 'quality' with the soul. 'Quality' from the Sophist's perspective is a much deeper concept than 'effectiveness' which is normally discussed with regard to teaching. Maybe a more transactional notion of 'quality' is needed.

Business theorists ascribe to a more transactional view of 'quality'. Writers such as Philip Crosby (2005), a 'Foundation Father of Quality' in business studies, writes of Zero Defects.

Crosby defines ‘quality’ as being the result of conformity to a suite of stated requirements. This approach calls for the pursuit of Zero Defects and foregrounds the management of details and the avoidance of mistakes. Quality here is seen as the absence of overt quantifiable and measurable errors and oversights. If we took a Zero Defect view of teaching and teacher education we would miss the unquantifiable elements, such as the impact of relationships..

This review paper rejects the Zero Defects approach. The case will be made that quality teaching, teachers and, by extension, teacher education, should be considered from a very different perspective. The problem in this quest is that we are looking for something that is greater than the sum of its elements – something that doesn’t simply lack flaws, but has an essence that transcends a checklist of competencies. This review paper will also suggest that the Zero Defects perspective infuses much of the extant attitudes to teacher preparation and development.

Structure of this review

This review paper explores the notion of quality teachers, teaching and teacher education, by examining contemporary attitudes and perspectives. The authors will consider public commentary and review, policy directions, course design initiatives and research that have influenced Australian teacher education, starting from a position of what makes a quality teacher. The discussion begins with an examination of quality in all things, and then the ensuing sections will unpack the contextual issues, and the limits of the current paradigm for initial teacher education for assurance of quality.

Section 1 has introduced the key concept of ‘quality’ and has begun the discussion that will be revisited throughout the review paper. Section 2 reviews the context of education in Australia, with discussion of the organisation and management of the educational systems nationally and with particular attention to the different roles Federal and State/Territory governments play.

Section 3 considers teaching as a profession, by examining the nature of teacher’s work, working contexts and demands, and the variations or regularities that exist. The section reviews the basics for effective teaching, by outlining what a teacher should know and be able to do, but finishes with an acknowledgement that these need to be considered as minimum competencies, and that there are qualitative differences between a quality teacher and a simply effective one.

Section 4 discusses the role of teacher education in the development of quality teachers and teaching. The section outlines how the program accreditation process works, and argues that the orientation of this is toward the production of effective and competent teachers, rather than truly quality ones. A key piece of the teacher education puzzle, the teacher educators their characteristics and role, is described and discussed.

Section 5 examines what it takes to be a quality teacher, what the personal attributes might be and how these extend from the competency framework for effective teaching. The section examines the historical paradigms for initial teacher education in search of an orientation that would best serve initial teacher education, one that develops truly quality teachers. In this section we challenge the notion that these personal quality attributes are appropriately accounted for only through the application of rigorous selection regimes for entry to teacher education. Rather it is the role of initial teacher education to target and develop these quality attributes.

The question of teacher quality in Australia

Quality in teaching is always of public interest, and in Australia, as well as globally, it has been a hot national topic for a very long time – a focus of attention for politicians, policymakers, media and the community at large. Although it is always of intense interest to professional educators, the voice of the profession is surprisingly absent from the public commentary.

Teachers' reflective practice

Research tells us that teachers, good ones at least, continually consider the quality of their work (Gore, 2015). Indeed, the notion of being a reflective practitioner has a great deal of support as being a key characteristic of professional educators (Almazroa & Al-Shamrani, 2015; Copeland, Birmingham, de la Cruz, & Lewin, 1993; Gillies, 2016; Yeh & Santagata, 2015). That is, the habit of reconsidering and reflecting upon teaching episodes after the 'event' contributes to effective teaching. Since the 1990s, researchers have shown that reflective practitioners work systematically to identify areas of success, weakness, necessary focus areas for future content with a class or student, as well as approaches for pedagogy, behaviour management and specific student support. They then adjust their teaching plans and actions accordingly, and seek, design and engage in professional development in those shared areas they find most challenging. Basically, reflection upon action and impact of action underpins constant improvement of their teaching. Consequent to this widespread reflective practice, effective teachers tend to have excellent professional insight and knowledge into the drivers for quality teaching and learning.

Absence of teacher and teacher educator voices in public commentary

Teachers are repositories of deep professional expertise on how to improve teaching and learning. This renders it even more surprising that the public commentary on what constitutes quality in teaching and in teacher education, most noticeably, does not include the voices of teachers or teacher educators. It is important to note here that teacher educators typically come to their role from, and are recruited due to, their background of extensive successful experience as classroom teachers and school leaders. So we must ask the question: 'Why don't we hear these professional voices in debates about education?'

Even the most recently-constituted review, by the Teacher Education Ministerial Advisory Group (TEMAG) panel, which resulted in the report, *Action Now: Classroom ready teachers* (2015a), lacked adequate teacher representation, despite being tasked to give definitive advice on systemic actions required to improve teacher quality. It was established with an eight-member panel, none of whom were classroom teachers – one was a teacher educator, two were school administrators, and the remaining five, that is, over half of the panel, do not appear to have ever been classroom teachers or teacher educators. Their foundation expertise appears to include law, economics, linguistics, psychology, audiology, higher education institution (HEI) leadership, and corporate leadership, but their biographies do not profile them as having ever been classroom teachers or teacher educators (Australian Government, Department of Education and Training, 2015b). One can then only hypothesise that their view of teacher quality would be derived from their experience as a student themselves, or perhaps from the sidelines as parents of school students. These experiences would be either a long time in the misty past or second hand perspectives, and this murky view would have limited their attention during their review and recommendations for teaching quality.

To explain how such a strange situation could arise we need to understand how education is organised and managed in Australia. Recognising the many factors at play here will help explain why teacher quality has been a hot topic for national attention, what the debates and resolutions to this point have been, and why the voices of teachers and teacher educators have been absent. In all of this analysis it will become evident that consideration of the key point – that of the essence of quality teaching is continually missing from the substance of the ‘debate’.

Organisation and management of education in Australia

Education is organised and managed jurisdictionally. There are 16 jurisdictions in Australia, six states and 10 territories (population 24.056 million, as at April 2016). However, this discussion will focus on Australia’s six federated states (population: New South Wales 7.644 million; South Australia 1.701 million; Victoria 5.966 million; Queensland 4.792 million; Western Australia 2.598 million; Tasmania 517,200; which accounts for 23.218 million) and two mainland federal territories (Australian Capital Territory 385,600; Northern Territory 244,500; which accounts for 636,500). These states and territories account for 23.855 million, or 99.16 per cent of the population. The other territories include Antarctica, and some small island territories, such as Christmas Island which has a comparatively tiny population of 2702 (Australian Bureau of Statistics, 2016).

The distinction between a state and a territory is that territories, in part, are directly administered by the Australian Government, or Commonwealth of Australia. States, on the other hand, have their own executive, judiciary and legislative powers, notably with respect to education. The Northern Territory and ACT have some delegated self-governing authority, but their education funding is directed by and comes from the Commonwealth purse. By contrast, each state has its own education system, with funding flowing from its own state purse, but with a significant contribution from the federal budget. For example, in Queensland, the jurisdictional government decides on the allocation of funding for the state education system, with legislative authority relating to education provision, but it also relies on the support of the federal government for a significant subsidy, derived from national taxes and investment proceeds. This means that states feel somewhat constrained to respect and implement the recommendations of the federal government in their local decision-making for the organisation and management of education, lest their funding support be reduced. At the same time, the states strive to mark their independence and efficacy in decision-making in their efforts to keep voters happy. Education therefore becomes a topic for a real tussle between state and federal interests (Capano, 2015), especially if the elected state government is a different political party from the federal government.

As a political topic, education gains the fervent attention of the voting public. In Australia school is compulsory to the age of 15. Therefore, even though most Australians have a limited

first-hand understanding of the working life and professionalism of teachers, the fact that they have all been to school tends to create a panel of armchair experts, who judge and provide public commentary on the presumed effectiveness of education and teachers. As noted by Wheldall (2005), the personal school experience of the general public provides a great many with romantic memories of their school days, and notions of how effective teachers were back in the day. Wheldall states:

Everyone has been to school and so everyone fancies him or herself as somewhat of an expert on education ... politicians, parents, and the person in the street all feel fully qualified to venture an opinion.

(Wheldall, 2005, p. 582)

On a positive note, education is overwhelmingly seen as being extremely important, as a vehicle for individual and national aspiration. As recently as April 2016, journalist Tomazin identified education as a key political driver in Australia, with teacher quality once again at the centre of attention:

Regardless of when the federal election takes place ... [these] things are certain. First: education will be a key battleground, with the perennial tug-of-war over schools funding already reopening old wounds. Second: the debate will be as divisive as ever, with teaching quality and greater accountability among the central themes.

(Tomazin, 2016, Sydney Morning Herald, April 9)

This has been a constant theme for at least the last 30 years, and has been a key and consistent election platform for the last five federal elections. In 2011, Minister for Foreign Affairs, Kevin Rudd, who had just finished his first term as prime minister, declared that education was Australia's future. Rudd captured the ongoing public and political sentiment in his presentation at the launch of the Australian Awards Scholarships Scheme in Brisbane:

For an individual, education is an investment that helps them achieve their human potential. It exposes people to new bodies of knowledge. It exposes people to new ways of thinking. It opens new employment opportunities. It gives people the tools to negotiate the rapid changes of this new century – and to prosper. It also instils the capacity to lead. But for nations at large, it is much more than this ... It becomes the engine room of ideas, of innovation, of imagining a different national future. It provides structural benefits to nations across the board – in governance, productivity, health and gender-equality ... Education is the building block of economies ... the foundation stone of nations.

(Rudd, 2011)

In this broad context it is politically handy and rather easy to whip up the attention of the public by painting education as being in crisis. Successive federal and state governments have focused on a critique of the quality of teachers and teacher education, with the effect of provoking almost constant public anxiety. The current general commentary of government is that education is in crisis (Dinham, 2013), and it must be the fault of the teachers and the system or process that produces them; that is, teacher education. In an effort to show action and thereby win the favour of the voters, the past three decades have seen an almost continual series of formal reviews into education, at the jurisdictional level and federally.

Reviews into teacher education

Professor Bill Louden, whose longstanding career in teacher research is well recognised by his peers locally and internationally, provided a good overview of the history of intense interest in reviewing Australian teacher education in his 2008 paper, *101 Damnations: The persistence*

of criticism and the absence of evidence about teacher education in Australia. He identified that 100 formal national and state reviews into teacher education had been conducted in Australia between 1979 and 2006. Importantly, none had shown comprehensive evidence of the failure of teacher education or teachers, or of a slip in the effectiveness of teachers over time (Louden, 2008). In his paper he identified the constant flow of criticism of teachers and teacher education in Australian discourse.

Persistent criticism of teachers, teaching and teacher education

The continual review of education in Australia has not been due to a rather benign but positive orientation to constant improvement and development. The Standing Senate Committee made its recommendation to establish Teaching Australia, and later the Australian Institute for Teaching and School Leadership (AITSL), in response to a particularly negative climate, where teaching, teachers and teacher educators were (and are still) perceived by the public as underperforming, and worse, as declining in effectiveness. Indeed, the trail of reports and reviews into teaching and teacher education emerged from a deep sense of dissatisfaction with the education profession. Loudén's *101 Damnations* paper captured the image of relentless scrutiny and criticism (Louden, 2008). There is a pervasive premise that teaching quality is broken and that the cause can be traced to poor quality, highly theoretical, impractical and professionally disconnected teacher education programs. This assertion by Knott and Cook (*Sydney Morning Herald*, 13 February 2015) is illustrative of the negative climate.

Too many teaching degrees are mired in theory, lack practical training and are not equipping new teachers with the skills to teach students...

(Knott & Hook, 2015, online)

It is unclear how this pervasive view has taken hold. The idea is that our contemporary teaching workforce is underperforming and that this is the fault of teacher education programs that are not fit for purpose. This unsupported, negative view is cheerfully asserted without evidence to support either the contention that teaching degrees are poorly designed and ineffective, or that contemporary teachers are of poor quality. However, this view has underpinned the rationale behind the intense scrutiny of teachers and teacher education (Liston, Whitcomb & Borko, 2006).

There has been no clear evidence to date to suggest that teachers on the whole do a bad job, or that teacher education programs are in any way lacking in their development of teachers to graduation. But there has been plenty of rhetoric and public statement declaring that Australian teachers are under par. There was repeated calling for a 'lifting of standards' (of teachers) by Julia Gillard when Prime Minister (cited in Curtis, 2008). The proclaimed message is that teacher quality is appalling, that there is a crisis in our midst, and that teacher education has been identified as the root cause. The evidence-free claims and insinuations from politicians and some commentators such as Bitá, national correspondent for *The Australian*, are that universities lack the moral courage to turn away low achieving students as they are seen as cash cows for a financially struggling sector (Bitá, 2015); that universities have poor programs and staff who are not fit for purpose as initial teacher educators (Pyne, 2015a); students are not rigorously or appropriately assessed and flow through unchallenging programs of teacher preparation with low skill levels and a focus on theory to the detriment of professional practice (Pyne, 2015b), and so on. These views are packaged alongside proclamations that teachers are the crucial factor in student learning.

Top of the Class report, 2006

In 2008, when *101 Damnations* was published, the most recent review of teacher education up to then had been the federal government's Standing Committee for Quality in Teaching, which had published the 2007 report *Top of the Class: Report on the inquiry into teacher education*. This review was unique in that it directly focused on reviewing the quality of teaching through

an examination of teacher education. It presented 12 recommendations to Parliament, built on an extensive national review of the field, with 172 submissions, and interviews with 446 individuals, including student forums, peak bodies, employer groups and academics. In its very first pages, the report identified that there had been numerous reviews into teacher education, but noted rather comfortingly that the 'teacher education system is not in crisis' (House of Representatives Standing Committee on Education and Vocational Training of the Federal Australian Government, 2007). The report's 12 recommendations were as follows.

Top of the Class recommendations

Recommendations 1 and 2 called for research into teacher education. The first specifically called for a federally commissioned longitudinal study into the effectiveness of teacher education with a research design that would follow cohorts of students through their initial teacher education (ITE) and into their first five years in the profession. The second recommendation was to establish a funding source for research into teacher education. Neither the funding nor the longitudinal study was forthcoming.

Recommendation 3 called for a national system of accreditation through the cooperation of state and territory registration authorities. This was immediately enacted, with Teaching Australia established to lead the development and achieve agreement to a nationally consistent program accreditation system (Teacher Australia, 2007). This system is discussed in detail later in Section 2.

Recommendations 4 and 5 paid attention to funding and professional experience in teacher education. Recommendation 4 called for a 'Diversity Fund' to be established to encourage increased diversity in the teacher workforce through development of innovative programs and systems of support for under-represented population groups. No 'Diversity Fund' has been established. However, there has been a call for specific attention to strategies to improve diversification of targeted types. For example, Han and Singh (2007) published an impassioned argument for identification of general policy strategies to increase the workforce cultural diversity. And recently, Weldon, in his review of the teacher workforce (2015) identified a significant and persistent gender imbalance that needs redressing. The fifth recommendation called for alignment between student enrolments, availability of practicum places, and workforce planning.

Recommendation 6 called for the establishment of a National Teacher Education Partnership Fund to support collaboration between stakeholders for the practicum, induction and professional development of teachers, and this partnership program exists. There have been very successful collaborations between employers, universities and jurisdictional registration authorities for the provision of bespoke ITE and linked induction programs, which are further discussed in Section 4. However, the National Teacher Education Partnership program has not been funded recurrently, and some very effective enterprises and initiatives have only been conducted once and then abandoned.

Recommendation 7 focused on establishing effective conditions for professional induction and was linked to recommendation 6. It was a call for co-contributed funding from stakeholder groups to support structured induction for each new teacher, including reduced teaching load, a trained mentor, and structured and tailored professional development. In Queensland, for example, there has been significant investment in mentoring development and support and induction programs for new teachers, but these initiatives were not put in place until 2014, and they have predominantly relied upon jurisdictional employer funding, not direct funding from the Commonwealth Government.

Recommendations 8 and 9 focused on supporting career-long and ongoing professional learning for teachers. Integral to recommendation 8 was the requirement for continuing teacher registration and salary structures to be tied to ongoing requirements to participate in professional learning. Since 2007 there have been developments in each jurisdiction, and in collaboration with the AITSL, to ensure support for professional development of teachers across their careers with capability for career stages recognised.

Recommendation 9 sought to support professional learning through the establishment of a National Clearing House for education research. Envisaged as providing a repository for teacher research to inform professional development programs, the AITSL and Education Services Australia have developed and collated significant resources for the use of teachers in their personal professional development (Educational Services, 2006). This is not quite as intended, in that to date the emphasis of the repositories has been simply on providing resources, rather than the compilation of research evidence to inform practice.

The final three recommendations considered funding models for teacher education programs. Recommendation 10 called for greater accountability and transparency for expenditure of funds for ITE by universities. Recommendation 11 called for funding to be tied to the real costs of learning to teach in different disciplines, and to be aligned to workforce shortages. Recommendation 12 attended to developing accounting and acquittal requirements for funding to support practicum. There has been little movement on adjustment for the accounting and acquittal of funds for teacher education.

The first three recommendations from the *Top of the Class* report have prompted the most debate across the education sector with regard to ITE and teacher quality. In 2006, Joce Nuttall, then Director of the Teacher Education Research Concentration in the Learning Sciences Institute, Australia, contributed to the post *Top Class* report discussion about national consistency in teacher quality and certification, by calling for a rethink of the way research in teacher education was designed and conducted (Nuttall, Murray, Seddon & Mitchell, 2006). They argued that small-scale case studies do not provide the public or policymakers with enough evidence to mitigate against negative presumptions of the effectiveness of teachers, and suggested there was a need for teacher educators to be supported as researchers.

The first area for debate has been the design and impact of research in teacher education, but there has been little by way of research on these matters. This review paper will help remedy that situation.

The state of research into Australian teacher education

In developing its suite of recommendations, the TEMAG Standing Committee had found that there was little evidence available to inform its review of teacher education, that data was lacking, and that there was a lack of clarity regarding:

... what is meant by quality teacher education outcomes.

(Australian Parliament, 2015, p. 51)

This finding was alarming, but sadly true. It is alarming because, as Loudén had identified in 2008, across a period of some 30 years there had been huge investment in reviewing teaching, teacher education and quality teaching. One would have expected that all those previous reviews would have generated some insights into the nature of quality in teaching, or that the body of education research would have comprehensively addressed the concept of quality. While much research attention has focused on the relative influences on student learning outcomes of factors such as class size, socio-economic background, parental education and so forth, as highlighted by Ken Rowe (2003), the persistent finding is that:

... what matters most is quality teachers and teaching.

(Rowe, 2003, p. 15)

And yet, despite this persistent finding, the concept of quality is murky.

Loudén had argued that the negative view of teachers, teaching and teacher education is baseless, that evidence has not and cannot be provided to support the notion that teaching and teacher education are broken. He wisely observed that:

The cycle of despair continues ... because teacher educators have not been able to provide robust evidence about the differential impact of good and weak teacher education programmes.

(Louden, 2008, p. 365)

Louden, like Nuttall et.al. before him, called for more empirical research on the impact of teacher education to fill the space created by an oversupply of small case study research investigations that cannot provide generalisable understanding of the effectiveness of teachers and the link to their teacher education programs. That is, he identified that there is no powerful evidence from research to contest the assertions that teachers and teacher education are less than effective (Louden, 2008), and so the negative perspectives have an unchecked voice. The idea that teachers and teacher education are ineffective has simply gained prominence because there is no comprehensive evidence available to demonstrate the converse.

Almost a decade later, it appears TEMAG was correct in identifying the lack of large-scale research examining teaching, teachers and teacher education as an important weakness in education research and efficacy evidence. However, some solid small-scale research in the field was conducted in that decade.

Several exceptional large Australian research studies

In 2003 a substantial research project was led by Louden. This study was multi-faceted, using both qualitative and quantitative methodologies on national sample data collected from 2000 students and over 200 teachers. Research evidence was collected relating to the effectiveness of many contexts and pedagogies, resulting in the 2003 report *In Teachers' Hands* (Louden, Rohl, Barratt Pugh, Brown, Cairney, Elderfield, House, Meiers, Rivalland & Rowe). Its subtitle is *Effective literacy teaching practices in the early years of schooling* and its main focus was on the pedagogies.

A significant part of the study was the development of the Classroom Literacy Observation Scale (CLOS), which was released along with the report. The report demonstrated that CLOS was a useful classroom observation tool as it enabled observation of the effectiveness of teachers' pedagogical practices and therefore could potentially be used to evaluate the impact of teacher education. This foreshadowed the emergence of teacher accreditation rubrics for the attempt to evaluate teacher quality. However, this research by Louden did not imply or establish that such rubrics could ensure teacher quality, rather it indicated that such rubrics may help us understand what a teacher does.

Since the early 2000s various researchers have argued that such rubrics and checklist processes fall short of ensuring quality (Bahr & Pendergast, 2002). Goldhaber and Anthony (2007) also discussed this idea, basically arguing that observation checklists of teacher performance, and alignment with student achievement scores, did not go far enough to capture the essence of teacher quality. This research provides a good example, therefore, of how teacher activity can be researched without necessarily being connected to a concept of quality teaching.

Another large study, by Meiers and Ingvarson (2005), investigated the impact of teacher professional development on student learning. This was a large study involving 3250 teachers and reviewed the impact of their engagement in 80 professional development activities. The key finding was that professional development, that is, teacher education, was considered effective if changes were evident in the teachers' student achievement outcomes. The project produced useful insights on the relationships between professional learning, teacher action and student achievement, but not on the essence of how the teacher influenced learners.

Examining quality in teacher education and teacher effectiveness research

An understanding of quality in teaching was not directly addressed in any of these research projects. So, what is the essence of the quality relationship between teacher and student? How can we understand and develop the types of attributes that ensure greater influence of teachers on their students, not only for the knowledge and concepts to be learned, but also for their conceptions and beliefs of themselves as effective learners? These are the types of important questions that research into teaching, teachers and teacher education needs to address, to provide the evidence required to respond to calls for improvement in teacher quality. Teacher education impact research programs have typically not directly posed these types of questions.

Mayer's 'effectiveness of teacher education' research

However in 2010, a research team led by Professor Diane Mayer secured competitive national funding for a large longitudinal study titled *Studying the Effectiveness of Teacher Education* (SETE), to investigate the relationship between teacher education programs and perceptions of teacher effectiveness across the first years teaching of thousands of graduates (Mayer, Allard, Bates, Dixon, Doecke, Ho, Hodder, Kline, Kostogriz, Ludecke, Moss, Rowan, Walker-Gibbs & White, 2015). This is exactly the kind of work the *Top of the Class* report recommended, and it is exactly the type of large-scale empirical project needed to inform commentary and policy about the strengths of teacher education, and the areas that need improvement and funding.

The three key research questions for the project are:

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?*

(Mayer et al, 2016)

The project team has not yet completed its collection of data and analyses. However, it is clear that these questions will position the research to respond comprehensively to calls for evidence regarding the efficacy of teacher education, and the quality of teachers to meet the demands of contemporary students and schooling contexts.

Preliminary findings from the Mayer project

One significant finding already apparent is that principals consistently rate graduates as being more effective than the graduates rate themselves. Further work on analysing this finding will no doubt be undertaken in the study.

Another important issue that has emerged is the impact of the contractual nature of employment in schools, for graduate teachers. Early indications are that those graduates with a full-time teaching position are the most positive about their teacher education, especially so if they have permanency. This linkage of factors is supported by other research. The Queensland College of Teachers has produced the *Graduates Infographic* (2014), which pulls together a lot of information regarding the profile of employment for graduate teachers in Queensland (QCT, 2014), and illustrates this finding. Of the 80 per cent who actually find work teaching in a Queensland school in their first year after graduation, 52 per cent work on a supply or contract basis. This means that of roughly 3000 graduates, 2400 are working as teachers and 1248 of those are on a contract or day-to-day supply teaching. The data show that a significant proportion of graduate teachers do not get a firm start in their career, and 1230 are not able to get a start in the field of education at all and find work outside education. Add these graduates to those sitting on short-term contracts and supply roles, and it adds to some 2478 graduate teachers out of 3000 who do not have

permanency. This finding has prompted authorities to closely consider the employment profile of the workforce, as it appears this may have a bearing on the initial effectiveness of beginning teachers and their opportunity to seamlessly transition into the profession from their teacher education programs. These are critical work context issues for early teachers.

There has never been a systematic Australian investigation into the impacts of teacher education on teacher action, and consequently onto student development and learning. Until the Mayer project there been no comprehensive study of the relationship between Australian teacher education programs, their curriculum, pedagogy and general program design, on the capabilities, attributes and impact of the graduate teachers in their first years of teaching and across their professional careers. Evidently large-scale projects are rare in the field of teacher education research, which affects the profession's capacity to provide evidence to counter criticism. To help verify this claim, a digital profile of the published research in teacher education was conducted.

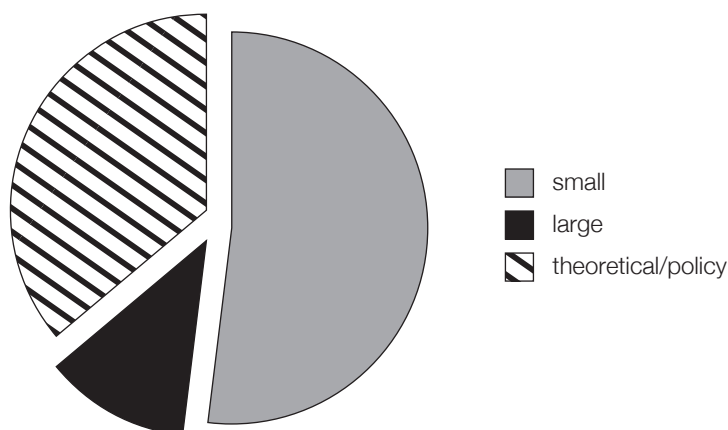
A digital audit of teacher education research

To get a grip on what research has been undertaken worldwide and to locate any patterns in the approaches adopted, a digital search was conducted. The results from a quick check of Google Scholar, using the search terms 'teacher quality' and 'teacher education', revealed there have been 52,900 relevant research articles published between 2014 and April 2016. So, it is evident that researchers in the field are productive, however the research is not the kind that provides the type of weighty data that convince government, policymakers, the media and therefore the public. This limitation is demonstrated by a quick desktop review of journal articles in the field of teacher education across the Asia-Pacific in the past decade.

The peak body for teacher education research in Australia, the Australian Teacher Education Association, hosts the *Asia-Pacific Journal of Teacher Education*, a top-ranked international journal in the area of teacher education research. This journal presents a microcosm of the research from across the Asia-Pacific region. A desktop audit of the papers published in this journal over the past 10 years (Volume 34, 2006, to Volume 3, 2016: 43 issues and 259 articles) clearly indicated a trend towards small boutique studies of single programs or case studies, with 135 of the papers (52 per cent) falling into this category. Some papers categorised as small studies had more than 100 participants, but they were studies of single cohorts of students in a single ITE program. The second largest category, comprising 94 papers (36 per cent), addressed policy, theoretical evaluations or literature syntheses.

The third group, large-scale empirical studies, was by far the smallest category of research papers, with only 30 papers (11 per cent). In categorising journal papers as reporting large-scale research projects, participant numbers engaged were considered a key indicator, and the 30 papers had between 404 and 2361 participants. Figure 2.1 depicts the relative share of papers that were classed as small or boutique studies, large empirical studies, and theoretical and/or policy papers.

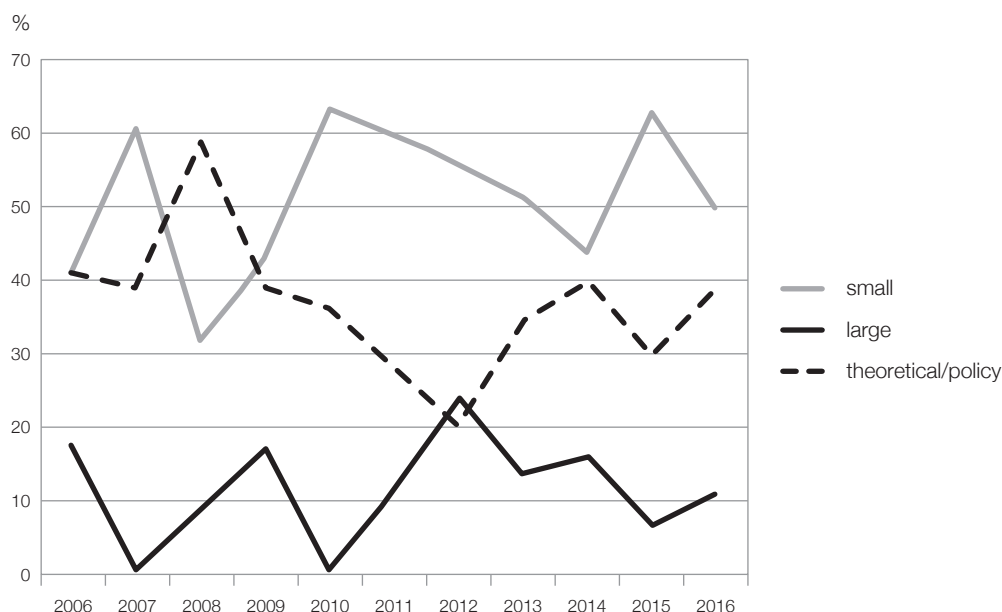
Figure 2.1: *Asia-Pacific Journal of Teacher Education* papers, by study type



(Bahr, data file)

Figure 2.2 shows the authors' analysis of the relative share of the research in each category, by percentage, in the *Asia-Pacific Journal of Teacher Education*, 2006–2016.

Figure 2.2. Research study categories types in digital audit, over time, by percentage



(Bahr, data file)

Figure 2.2 encapsulates the authors' analysis that, except for 2008 and 2012, where special issues were published, the trend is always for small projects to predominate, followed by theoretical and/or policy papers, and a very low incidence of research drawing on large data sets. A closer look at these papers shows that the majority of authors of the large studies report internationally-based research, not Australian data.

This audit further demonstrates the difficulties confronting those wishing to counter the arguments that teacher quality and teacher education quality are substandard. Indeed, the nature of the research conducted has highlighted the importance of contextual factors and qualitative impacts, characteristics which do not generate the kind of findings that emerge from more experimental and large-scale research programs. Lacking such research, it is not easy to demonstrate that teachers are making a powerful impact on student learning, or that there is a potent and positive relationship between teacher education and teacher effectiveness.

Other research data on teaching and teacher education

In the absence of this evidence from targeted large-scale empirical research, there are three other ways that data on teacher quality and teacher education have been sought. They are:

- satisfaction surveys and interviews with employers and graduate teachers
- course experience questionnaires
- comparative analysis of student scores on international and national testing.

Employers and graduate teachers' satisfaction surveys

A second avenue for review of teaching and teacher education quality has been consideration of graduate teacher and employer satisfaction with pre-service preparation programs. The satisfaction opinions of teachers and their supervisors shortly after a graduate teacher has entered the profession, can give insight into the degree of appropriate match between their preparation for their teaching role and the actual demands of the profession; that is, their effectiveness as a teacher.

Batten's 'recently-recruited teachers' research

Early research by Batten, Griffen & Ainley (1991) revealed that surveys of teacher satisfaction can provide useful insights. In their classic survey of 2939 recently-recruited teachers in 74 schools, Batten et al. revealed a degree of dissatisfaction by respondents with the preparation of pre-service education they had received for the stresses and performance demands of the first years of teaching. The authors argued the survey data called for greater connection between preparation and induction, and greater attention being given to support and mentoring during the early stages of a teacher's career. Sadly, there is little evidence that these insights were incorporated into policy implemented by governments at the time, or that funding changes were made to schools or teacher education institutions for their implementation.

Mayer's 'effectiveness of teacher education' survey research

The most exciting recent, indeed still current, research of the survey type is the previously-cited SETE project, led by Professor Diane Mayer, Dean of Education at Sydney University. For this study a large team of academics, from Sydney, Deakin, Australian Catholic, and Griffith universities, in partnership with the Victorian Department of Education and Early Childhood Development, the Queensland Government, the Victoria Institute of Teachers and the Queensland College of Teachers, is conducting a longitudinal survey-based study of teachers, who graduated in Victoria and Queensland between 2010 and 2011 (Mayer et al., 2015).

To date, the researchers have followed a cohort of almost 15,000 teachers for three to four years – their first years as teachers – in an investigation of the perception of the effectiveness of their teacher education in preparing graduates for their teaching career. The dimensions of consideration for their teaching performance have been framed by the AITSL professional standards, which will be reviewed later in this section. More than 4200 schools have been asked about the effectiveness of these teachers, and focused case studies have been conducted with 195 graduate teachers in 29 schools involving five site visits for each one. The SETE project will provide extraordinarily-comprehensive evidence to inform debate about the efficacy of teacher education and the effectiveness of teachers. The evaluation will be available in the next 12 months or so, and will provide much needed insight into the strengths and capabilities of teachers and how these can be enhanced by their teacher education.

National graduate experience research – the CEQ as an example

A third source of data on the effectiveness of teacher preparation has been provided by the national Course Experience Questionnaire (CEQ), conducted by Graduate Careers Australia (www.graduatecareers.com.au/), an independent organisation contracted to conduct national surveys for the higher education sector. Every graduate of every tertiary program in Australia is contacted by post or email in their first semester following graduation and asked to rate their course experience. This is surveying on a grand scale. The Australian Graduate Survey (AGS) includes a few sub-surveys, the Course Experience Questionnaire (CEQ), the Graduate Destination Survey (GDS), and the Postgraduate Research Experience Questionnaire (PREQ).

The CEQ comprises mostly 5-point Likert scale attitudinal statements about aspects of course experience, where responders are asked the extent to which they agree or disagree. There are 10 constructs, each with at least two items, and an Overall Satisfaction Indicator item. The items are not ordered so that the construct items occur consecutively. Each university can request two bespoke items to be included for their own graduates. The CEQ ends with two open-ended questions asking for the best aspects of their course experience, and areas for improvement. In 2014, 260,150 people were approached with the survey, and 142,647 surveys were completed. Of the total survey completions, education graduates comprised 12.8 per cent of the responses; that is 18,259.

The education student respondents were asked to consider a range of matters, including the quality of the teaching Good Teaching Scale (GTS) in the teacher education program, their development of generic skills, such as Graduate Attributes, which are common to all graduates from their level of university study Generic Skills Scale (GSS), and their overall satisfaction

Overall Satisfaction Item (OSI) with their teacher preparation program. Nationally, about 80 per cent of those graduating from ITE programs recorded an Agree or Strongly Agree response to the survey question: 'Overall I am satisfied with my Experience' (Graduate Careers Australia, 2015).

This data alone would not suggest there is a problem with the quality of teacher education programs, or with the perception that they are fit for purpose and that graduates are appropriately prepared for their roles. However, this is only part of the picture as there are no associated data available for correlation with their performance as teachers. This is the weakness of research in the field of teacher education identified in the *Top of the Class* report and by TEMAG, and which has led to the consequential inability of the profession to counter any criticism.

Analysing student scores on international and national tests

One approach to commentary on the effectiveness of Australia's teachers has been to consider the performance of students on international standardised tests, such as the Program for International Student Assessment (PISA), conducted by the Organisation for Economic Co-operation and Development (OECD, 2012). The PISA data threw a light onto the profile of achievement of Australian students in such a way that enabled direct comparison to other OECD nations. In countries such as Finland and Singapore, disappointing student achievement data drove the instigation of education system reform (Welch, 2014). However, in Australia the data have been used as a resource for those who wish to make claims about the health or otherwise of Australian education, and by wild extrapolation, the quality of the teachers.

Emeritus Professor Barry McGaw, as Chair of the Australian Curriculum, Assessment and Reporting Authority (ACARA), analysed the international data from the PISA test. PISA testing has now been conducted in 2000, 2003, 2006, 2009, 2012, and 2015. He showed the profile of performance for Australian children, in which he revealed that Australian student performance has a peak with very high attainment by some, but a long tail of students who seriously underperform in literacy and numeracy for their age (McGaw, 2010). He reported that:

... around 14 per cent of Australian 15-year-olds had literacy levels that were not adequate to support serious further academic learning.

(McGaw, 2010)

McGaw's analysis of Australian performance in PISA over time, has also been useful for understanding the value of supporting learners at the top and bottom end of the performance profile. He used the mean performances of countries from the PISA to show Australia's literacy and reading results comparatively, and observed that Australia was not unlike other high-performing countries. However, this comparative approach was not intended to provide a report card on the effectiveness and quality of Australia's teachers.

His trend analyses drew attention to an evident decline in the performance of our most able students in literacy and numeracy, and an overall drop in the performance of Australian students compared to those of other nations. He also noted the apparent skew of performance profiles for Australian students with a long tail of low-achieving students. Student self-efficacy with respect to science was also comparatively lower than that of other nations. The trend analysis showed that the high-performing students were achieving on a par or better than most other countries, but their strengths were gradually declining with successive testing over time. Also, there was a disconcerting number of students who were continuing to perform well below desired levels. McGaw noted that important targeted improvements in our approach to education could be made to influence the profile of achievement for Australian students. These data and analyses should have informed our national actions aimed at improving the outcomes for all students.

But in Australia, the international comparison has driven a wave of criticism of our educational quality. Riddle, Lingard and Sellar (2013) write of the 'media shock' at the 'slump' in Australian student achievement, and the public 'lamenting' of quality education and teachers. These emotive terms effectively capture the rapture with which the PISA data and international comparisons have been appropriated by those seeking to create sensation and, by extrapolation,

make claims about a ‘crisis’ in quality teaching in Australia. The PISA data have been used as a triennial report card for Australian teachers, rather than being used much more appropriately, to inform educative actions and funding designed to break the cycle of disadvantage evident in the national performance profile.

National Assessment Program for Literacy and Numeracy (NAPLAN)

McGaw’s analysis provided further influence for the Australia-wide rollout of the National Assessment Program for Literacy and Numeracy (NAPLAN), which has assessed the literacy and numeracy skill of students in Years 3, 5, 7 and 9 each year since 2008. Like PISA, NAPLAN provides useful point-in-time and trend insights to the academic performance of students. It is not designed as a report card for quality in teaching.

The data for NAPLAN is provided publically on the *MySchool* website. This visibility has caused some unhelpful (and unreasonable) data comparisons to be made, and some damaging, unfounded commentary has ensued, linking the data to teacher performance. Some schools have been so spooked by this unintended use of NAPLAN data that they have attempted to present themselves in a good light by suggesting poorer performing students abstain from the testing, and even using NAPLAN achievement to select students for entry to their school (Jacks & Cook, 2015). This, of course, undermines the usefulness of the tests for understanding the shifting profile of student achievement, and especially the attainments of those at the most disadvantaged end of the performance range.

Some schools have misunderstood the NAPLAN and considered the tests as high stakes. The result has been that preparation for the tests has been a distraction from the regular curriculum-based teaching programs of schools, with many associated teachers, parents and administrators complaints about teaching to the test. Professional development programs have been conducted for teachers, specifically targeting preparation of students for NAPLAN, and in evaluating the data sets that are produced annually. NAPLAN has almost become a curriculum for some, and performance on NAPLAN was suggested to be a Key Performance Indicator (KPI) for teachers (Thompson & Lasic, 2011). The media had a big hand in considering NAPLAN data as indices of teaching quality, and the profession has not been responsive enough in counteracting the damage of these assertions. The *Sydney Morning Herald* ran a piece by Preiss on the issue of performance pay for teachers, using the easy data to hand, the latest NAPLAN data, suggesting pay rises should be commensurate with the NAPLAN scores of their students.

Last year 99.8 per cent of teachers received a salary progression, however only 70 per cent of our students are achieving good learning growth each year ... We need to raise the performance bar for our teachers as well as our students. ... The 70 per cent student achievement figure is drawn from NAPLAN-relative growth reports and teacher judgments on student learning. Last year 24,000 teachers were eligible to progress and only 28 failed to gain a promotion.

(Preiss, 2013)

When the call for improved quality in teaching was at its peak there was great interest in finding objective measures that could provide evidence of a teacher’s effectiveness and impact, indicating teacher quality. NAPLAN achievements became interesting to governments and the public as a potentially convenient measure – thus conflating effectiveness and impact on achievement with quality. The response from the profession countering this view has been weak. Moreover, some education researchers have engaged in debating the merits of NAPLAN as an indicator of teacher effectiveness, and in so doing have turned their proper attention away from researching and developing conceptions of the attributes of quality in teaching.

Of course, this focus on NAPLAN reflects the competitive aspirations of the Australian Government for our community and our economy. It is deemed to be simply unacceptable for the Australian standardised test results to be lagging behind other nations (Pyne, 2015a). The Australian value system prioritises a range of skills beyond literacy and numeracy, to include values such as creativity (Lassig, 2009). However the quality of teaching graduates in the areas

of literacy and numeracy has been seriously questioned (Hosking, 2015) and data analyses from PISA results have been used to call the quality of teachers into account. As a result, the government is demanding urgent improvements in the quality of teachers and teacher education. It is asserted that teacher graduates lack skills in teaching literacy and numeracy, and that this underscores the test performances (Hosking, 2015). This last claim is actually relatively easy to doubt if not totally rebut, given that the age profile of the teaching profession in most jurisdictions is skewed towards people who are 50 years (Queensland College of Teachers, 2014), and therefore it is unlikely that recently graduated cohorts have had much influence on achievements nationally. But again, the professional voice has been largely silent.

The next issue to be reviewed, seen as a solution to the teacher problem, is the establishment of a national teacher accreditation.

Establishing nationally consistent teacher accreditation

Recommendation 3 of the *Top of the Class* report (2008) called for a nationally consistent system of teacher accreditation to be established in Australia, asserting that ‘teacher quality is on the agenda across the world’ (p. 19), and would be delivered by the implementation of such a system. A rigorous and comprehensive, nationally consistent (or at least largely so) accreditation system and process has been achieved. The development process was riddled with many tensions, especially those associated with the inherently-competing interests and education responsibilities of the state jurisdictional and federal governments.

First, in 2007, a national leadership group Teaching Australia, was formed by the federal government, as an independent entity with the brief to provide leadership for the development of a nationally consistent accreditation framework for teacher education.

As a second step, *Teaching Australia* worked to convince state education jurisdictional authorities that there were benefits to be gained from aligning practices for the national accreditation of teacher education programs. State regulatory authorities engaged with Teaching Australia in an effort to bring together the disparate approaches to teacher education program accreditation. Higher education representatives, school-based educators and administrators, teacher employer groups and unions, and discipline leaders in the field of education worked together to design a nationally consistent policy for program structure and accreditation, teacher registration and performance monitoring. All of this action was aimed at ‘corralling’ the profession and forming a shared foundation upon which necessary improvement could be driven. That is, it was aimed at fixing education through the enactment of a process of rigorous credentialing of teachers.

In 2009, Teaching Australia became the Australian Institute for Teaching and School Leadership (AITSL), with an expanded brief to lead reform for ITE, through the oversight of a national system for program accreditation and to ensure alignment with agreed program standards and detailed Professional Standards for Teachers. As with Teaching Australia, AITSL is not a part of government, but rather is a public company funded by the Australian Government. AITSL and Teaching Australia established a framework that can achieve consistency in the evaluation of teachers against the detailed standards. They have developed and disseminated comprehensive resources and supports to assist in the development and demonstration of these standards. They have established a system for accountability and processes for accreditation, and they have effectively aligned much of the regulatory authority work of each of the national jurisdictions for education in the area of teacher education accreditation and quality assurance.

Analysing the AITSL framework and other structures

There are two paired components to the accreditation system. The first are the Program Standards (APS), which provide guidance and requirements for the design and structure of teacher education programs and professional experience, and include direction for pre-service teacher selection, as well as English language proficiency, personal literacy and numeracy,

matriculation studies and prerequisites for particular teachers. The second component of the accreditation system are the Australian Professional Standards for Teachers (APST). At the heart of the nationally consistent requirements for accreditation is a framework for professional standards for teachers at various points across their career. Figure 2.3 provides the detail of the professional standards descriptors for the Graduate level of attainment.

There are 37 standards grouped in seven categories, each further divided into three broad areas of action: Professional Knowledge, Professional Practice and Professional Engagement. This structure is consistent across the four career stages for teachers: Graduate, Proficient, Highly Accomplished, and Lead. An analysis of the three broad areas of action follows.

Professional knowledge

Professional knowledge (APST 1.1–2.6) contains elements such as a requirement to have knowledge of the physical, social and intellectual development of students (APST 1.1). It is possible to have knowledge of these things and yet not be able to take account of them in teaching, or to positively influence the development of students in each of the domains. This slippage of understanding about teaching, especially quality teaching, is evident in all the APSTs in the area of professional knowledge. There is a flawed notion here: that knowing about something is sufficient to ensure that you can exercise a positive influence on learners through your teaching practice. The standard does not require teachers to demonstrate they know how, or that they are actually able, to promote learning or development in students in a teaching situation, or how to work positively with mismatched physical, social and intellectual development. The APST does not require teachers to make meaningful links between this knowledge and their planning for student learning (professional practice dimension). In fact, there is no requirement for inter-linkage between any of the standards in the professional knowledge set, with any in the professional practice set. The stance adopted by this review paper is that these are serious omissions to a practitioner professional standard.

Professional practice

It might be anticipated that the weakness of the knowledge dimension is attended to in the second area: that of professional practice (APST 3.1–5.5). But it is not so. The APST in the professional practice dimension also depends on verbs such as ‘use’, ‘select’ and ‘manage’. The tenor of the APST in this area is about being effective and efficient. Linkage to professional knowledge is not drawn, and the statements do not paint a picture of value. That is, the value proposition of the teaching activity is not made clear. Yet this is where the essence of quality should naturally lie. For example, to meet the requirements for APST Focus Area 3.3, ‘Plan for and implement effective teaching and learning’, the detailed descriptor at the graduate level requires the teacher to demonstrate capability to ‘use teaching strategies’. However, capability is a lesser measure than, for example, ‘to show flair’. Yet we know that teachers need to be innovative, exciting, engaging, motivating and that planning needs to be personalised to meet the learning needs of students. That is, they need to show flair. They need to do more than simply use teaching strategies. It could be argued that these elements of flair should be reserved for those who are a step beyond raw beginner. However, as discussed in Section 3, in teaching a raw beginner holds as much responsibility as an experienced professional when it comes to leading the activities of their own classes.

Professional engagement

The third area, professional engagement (APST 6.1–7.4), consists of statements that call for informed introspection and engagement beyond the actual learning moments of a teacher engaging directly with their students. These are important elements of competency for a teacher. However, this review’s stance is that they are too removed from the actual engagement with students that teachers should have to effect learning and development. They are characteristics that we should expect of teachers, but they do not directly map to the job of teaching.

Figure 2.3: AITSL professional standards – Graduate level

PROFESSIONAL KNOWLEDGE	1 Know students and how they learn	1.1	Physical, social and intellectual development and characteristics of students
		1.2	Understand how students learn
		1.3	Students with diverse linguistic, cultural, religious and socioeconomic backgrounds
		1.4	Strategies for teaching Aboriginal and Torres Strait Islander students
		1.5	Differentiate teaching to meet the specific learning needs of students across the full range of abilities
		1.6	Strategies to support full participation of students with disability
	2 Know the content and how to teach it	2.1	Content and teaching strategies of the teaching area
		2.2	Content selection and organisation
		2.3	Curriculum, assessment and reporting
		2.4	Understand and respect Aboriginal and Torres Strait Islander people to promote reconciliation between Indigenous and non-Indigenous Australians
		2.5	Literacy and numeracy strategies
		2.6	Information and Communication Technology (ICT)
PROFESSIONAL PRACTICE	3 Plan for and implement effective teaching and learning	3.1	Establish challenging learning goals
		3.2	Plan, structure and sequence learning programs
		3.3	Use teaching strategies
		3.4	Select and use resources
		3.5	Use effective classroom communication
		3.6	Evaluate and improve teaching process
		3.7	Engage parents/carers in the educative process
	4 Create and maintain supportive and safe learning	4.1	Support student participation
		4.2	Manage classroom activities
		4.3	Manage challenging behaviour
		4.4	Maintain student safety
		4.5	Use ICT safely, responsibly and ethically
	5 Assess, provide feedback and report on student learning	5.1	Assess student learning
		5.2	Provide feedback to students on their learning
		5.3	Make consistent and comparable judgements
		5.4	Interpret student data
		5.5	Report on student achievement
PROFESSIONAL ENGAGEMENT	6 Engage in professional learning	6.1	Identify and plan professional learning needs
		6.2	Engage in professional learning and improve practice
		6.3	Engage with colleagues and improve practice
		6.4	Apply professional learning and improve student learning
	7 Engage professionally with colleagues, parents/carers	7.1	Meet professional ethics and responsibilities
		7.2	Comply with legislative, administrative and organisational requirements
		7.3	Engage with the parents/carers
		7.4	Engage with professional teaching networks and broader communities

(AITSL, 2016)

How teachers utilise the AITSL standards

The APST have become the reference point for examination and evaluation of teacher education programs, learning and development assessments for the profession. They emerged from extensive consultation across the sector and have been the subject of expert review and development, even within their first five years of employment to evaluate graduate teachers. The extent of the collaboration was laudable; however, the base premise was that quality assurance could be appropriately achieved through competence assessment across a range of dimensions. This is a limited view. Further, the notion of quality was not well defined prior to the exercise. So the provision of metrics to rate the achievement of quality was compromised from the start. The standards have become what we understand to be the bases for a measurement or prediction of likely teaching effectiveness and a reference point for considering the efficacy of teacher education programs.

Applicants for teaching positions must describe themselves in terms of the standards and provide collections of annotated artefacts in portfolios to demonstrate their achievements for each standard. A range of high quality resources have been developed by AITSL to assist people to understand themselves as teachers in terms of these standards.

The APST describe what teachers need to know, and what a teacher must be able to do. They focus attention on key capabilities for a competent graduate teacher. In their wording they support objective observation and feedback by informed professionals, and development of performance improvement plans. The APST can be clearly demonstrated and assessed at a point in time; that is, they do not focus on the long-term effect of the work of a teacher on their students. It is possible to scaffold and support the learning of the skills, and there are rather incontestable and straightforward ways that teachers can provide evidence to demonstrate their achievement of each standard. But one of the weaknesses of the APST is that the requirements of the role within the classroom, for a beginning teacher, are indistinguishable from those for teachers at later career stages.

The list of competencies is comprehensive and teachers need to demonstrate capability for each and every one of the standards, as listed for their level. The way the standards are organised has supported the development of a range of comprehensive resources available to teachers, teacher supervisors and teacher educators, that assist in ensuring consistency of interpretation as to the intent of the standard, and the appropriate evidence that could be provided to demonstrate achievement of the standards.

How teacher education institutions use the AITSL standards

The standards have also provided the framework for nationally consistent accreditation of teacher education programs. Programs being considered for accreditation are able to describe their design, pedagogy and assessment practices as they align to the requirements to develop pre-service teachers, against each of the standards. So, there is much to be positive about when considering the place of standards in effective teacher education. Section 4 details the process of accreditation to be undertaken by higher education institutions.

Discussion of the APST as competencies

Each and every APST can be considered a competency. Each one is observable, underpins effectiveness and therefore is necessary. There is no APST that could be eliminated from the list without damage to the overall profile of the teacher's effectiveness.

If the Graduate level does not account for the desirable attributes and personal characteristics that mark the quality teacher, is this also true of the Proficient level of achievement? The key active verbs for the Proficient level are 'use', 'apply', 'provide' and 'organise'. The proficient level takes the Graduate from knowing and demonstrating to a more advanced level of application, but the tenor is still one of competency, not of quality or personal attributes. At the Highly Accomplished level of achievement, the attention turns to influencing and working with peers and colleagues. At the Lead level of achievement, the focus is on leading colleagues and evaluating programs.

So it is clear, the APST do not address personal attributes of teachers, and therefore do not fully consider or provide the contexts for assuring the provision of a quality teacher for every classroom. This review paper's stance is that accreditation, as it is currently constructed, only considers the demonstration of competencies, capabilities and the consequent impact on learner conceptual understandings. It does not go far enough to give insight into the key attributes that form the quality in teaching. This review paper's position is that standards are important, even necessary, but, while standards can assure competency, and maybe even effectiveness, this is a much lower bar for achievement than one set to ensure quality. And quality is what any profession should aim to achieve.

There is merit in the listed capabilities, and there are clear benefits with a standards-based teacher evaluation system. However, where is the requirement to motivate, to lead learning, to build confidence, to inspire aspirations? Where is the requirement to show care and compassion, to develop mutual respect? Why don't we ask for passion, enjoyment or humour as an important teacher competency? (The retail trade, for example, requires such qualities.) Where is the sense of teacher identity and responsibility for student development, self-confidence or self-efficacy? These qualities are not so easy to measure and tick off a list, but they can be demonstrated. They depend upon the many and varied relationships a teacher establishes with individual students, and with groups of students.

So something essential is missing from the APST. It appears the installation of an accreditation process does not, in and of itself, assure the development of quality teachers. The accreditation processes and requirements for graduates to demonstrate achievement of professional standards, are necessary, but not sufficient to ensure that those seeking accreditation are indeed quality teachers.

The argument for standards and AITSL's effectiveness in meeting them

The fundamental goal of the authorities in establishing the APST was to assure standards in teacher education and thereby in teacher quality; with teacher quality being considered, in terms of effectiveness, the link between action and student learning outcomes. Manifestly there is a strong jurisdictional belief that the APSTs have provided assurance of quality. Two public statements make this clear:

The Australian Professional Standards for Teachers define the knowledge, practice and professional engagement needed for high quality, effective teaching that improves student learning outcomes.

(The Board of Studies, Teaching and Educational Standards, NSW, 2015)

The Australian Professional Standards for Teachers is a public statement of what constitutes teacher quality. The Standards define the work of teachers and make explicit the elements of high-quality, effective teaching in 21st-century schools. The Standards provide a framework that makes clear the knowledge, practice and professional engagement required across teachers' careers.

(Teachers Registration Board of Tasmania, 2015)

These statements, made formally by jurisdictional authorities that are directly responsible for registering teachers and having oversight to ensure the quality of education for their respective state governments, are affirmative, and were made following the implementation of the AITSL. Despite the tone it is worth noting that they read like a list, lacking any sense of the inter-relationship between their elements.

However, the political rhetoric of teacher failure still seems to work for some. Christopher Pyne, former federal minister for education, in his 2015 Hedley Beare Memorial Lecture, stated:

The current accreditation of teacher education courses is letting us down by not providing quality assurance.

(Pyne, 2015a)

National alignment, across the jurisdictions, is potentially a good thing and rigour in evaluation of programs with accountability is also important. The establishment of a framework and suite of rigorous processes to better ensure the effectiveness of teacher education has largely been a positive move. But all is not solved.

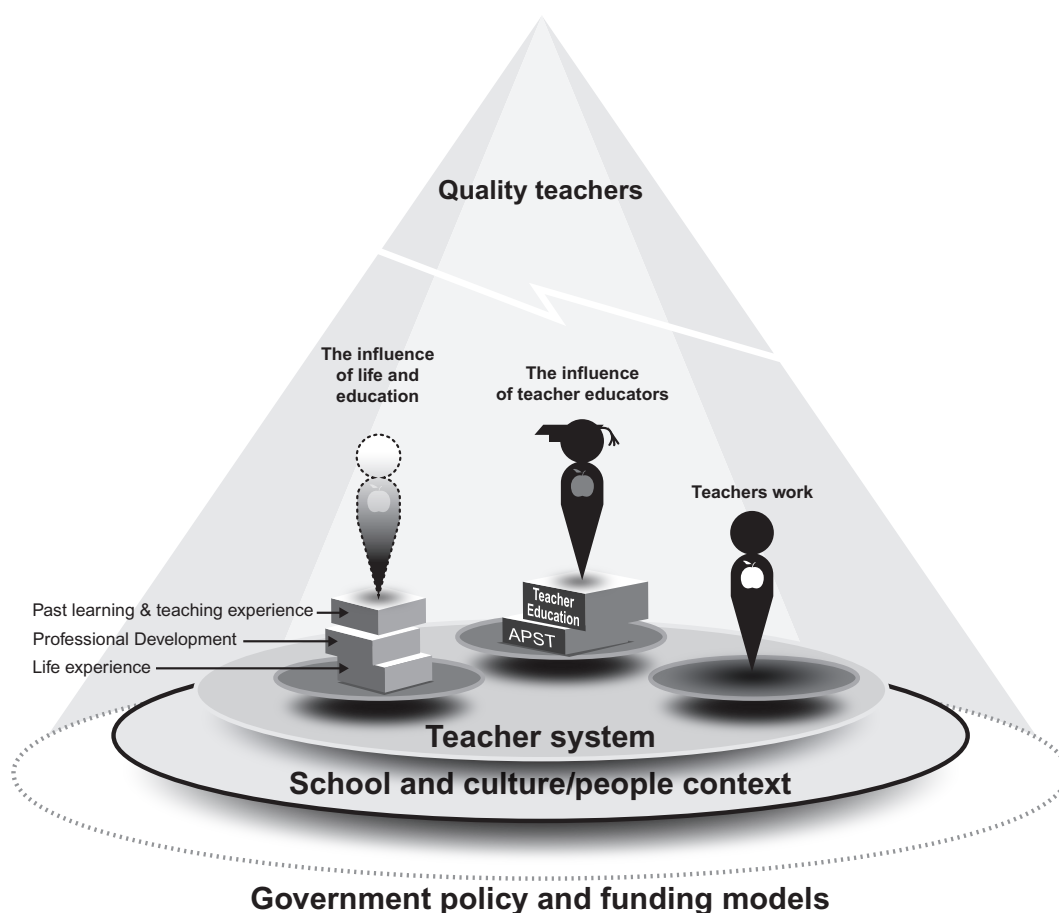
The complaint of the Standing Committee that set this enterprise in train – that there is a lack of clarity about the essence of quality – remains under-researched and undocumented. By these standards the establishing of AITSL has not been a successful exercise. Finally, the fact that the criticism of the quality of Australian teaching continues also suggests that AITSL has been less than successful. They assist us to be confident in the basic competence of the teacher workforce, but this is not enough. There needs to be a more complete model for quality teaching.

A model for quality teaching

The notion that quality teaching reliably emerges from demonstrating achievement against a checklist of competencies, framed as standards, misses the very essence of the quality factor/s. There are dependent and intersecting elements that support and shape quality teaching and they function in a kind of ecosystem, impacting upon each other. Figure 2.4 illustrates the relationships between the various elements of the ecosystem underpinning the emergence of the quality teacher, and depicts them as a conceptual framework for an ecosystem of influences.

Looking at Figure 2.4, the first circle of activity identified in the system is that of government policy and funding models. The Australian intersecting system of jurisdictional and federal oversight and management of education and funding models, frames the nature of schooling and teacher development. The next circle of activity is the school, people and cultural context that frame the teacher's work. The teacher is an active contributor, responder and developer of these contexts with strong positive relationships established for the benefit of the learners. The third circle of activity is the teacher system. This is the realm where the teacher brings together their identity as a professional educator. Past experience, initial teacher education, professional and life experience are connected with their self-conceptions as a teacher. These influences come together with notions of the nature of teachers' work, personal models and conceptions of teaching and the role of teachers. Sections 3 and 5 will further discuss these aspects of teaching.

Figure 2.4 Ecosystem of influences underpinning teachers of quality.



(Bahr, data file)

The next stage (represented by the blocks in the dishes) is the active creation of understandings borne of personal learning relationships, with teacher educators, developed through programmed learning, initial teacher education courses, signature experiences and authentic assessment, and the supported development to demonstration of the APST. The first and second figures relate to influences in the active creation of understandings and the third figure represents the contextual elements that line up with the daily/weekly and other less regular tasks that form the day to day activities of the job of teaching. At this point, the teacher is considered competent according to the registration and employment requirements for Australian jurisdictional authorities.

The crack beneath the head of the cone shows the point of departure between the basically competent teacher and the quality teacher. The crack shows the break between what we currently do in preparing and accrediting teachers and what we need to be doing, in terms of quality teaching. The peak of the cone in the diagram is where we need to turn our attention. What are the catalysts for bringing the quality teacher to the fore? The picture is certainly complex. Professional standards, and by extension, accreditation processes, do not and cannot capture the entire picture. As depicted, if any element of the conceptual framework ecosystem becomes dysfunctional then all other layers become unstable.

A professional standards accreditation system that focuses on competency statements and demonstrations, is silent on the personal attributes that a quality teacher requires. The McKinsey Report (2007), *How the World's Best Performing School Systems Come out on Top*, captures a common sentiment that guides policy for the improvement of teacher quality internationally, in their statement that:

an effective teacher ... need[s] to possess a certain set of characteristics that can be identified before they enter teaching

(McKinsey, 2007, p. 17)

To fill this gap in a standards framework for teacher education, international approaches have focused on selection processes to get the right people into teaching. Singapore and Finland are examples of high performing systems that have concentrated significant attention to selecting candidates for ITE programs. This is addressed through evaluation of candidates' motivation for teaching following rigorous testing of their personal literacy and numeracy. There has been *no* attention internationally to the capacity for appropriate teacher education to address and develop these attributes. As a result, there has been *no* attention to considering professional standards for teacher education that attend to these personal attributes.

Concluding comments

This section has discussed the key contextual factors impacting upon teachers, teaching and teacher education, with an overview of the prominent and stakeholder conceptions and commentary regarding quality. It has reviewed the reputational negativity that has grown for the profession and argued that teacher silence on this critique, based on a paucity of research to rebut it, has contributed to it. The Australian Professional Standards Framework was examined with attention to the way it guides teacher evaluation and program accreditation, and it was argued that it is insufficient to ensure quality teachers. A model was proposed of an ecosystem to support quality teaching.

The authors of this review argue that the personal attributes that transform an effective teacher to one of quality is not addressed through a competency-based standards system; something extra is needed. The review considered the approaches for evaluating and considering personal attributes of teachers in high-performing international systems, where the concentration on candidate selection rather than teacher education predominates. However, we might ask: what are the distinctive characteristics, attributes and ways of being a teacher that would set quality apart from simple competence? This question will be explored subsequently in this review paper. Section 3 will consider the nature of teachers' work, as this, the job of teaching, is the environment where quality will exist.

Teachers' professional work

The literature on teachers' work argues for conceptualisation of teaching as complex work and recognises that this work goes far beyond the direct interaction with students. There has been significant research into its nature. An understanding of the parameters of this provides a further perspective for examining quality teaching. Most of the current extensive discourse on teachers' work builds from the foundation set described by Connell in 1985. Connell explored Australian teachers' work through extensive interviews with the professionals and communities connected to elite private and ordinary public schools. Connell's pioneering analysis of teaching as a job exposed this complex stuff of teaching.

Teaching as a profession

This view of complexity sits better when teaching is properly considered as a profession, rather than a para-profession, or simply a job. Unfortunately, teaching is not always considered on a par with other professions such as medicine, law or engineering (Cobbold, 2015). Teaching has a history of being regarded as 'women's work' (McDowell, 2015, p.273), like many of the professions that have an element of nurturing as part of their role. As such, it has suffered from being held in less esteem than other fields. Even in the current enlightened year of 2016, teaching is still portrayed in the literature as being a feminised field, and hence something less than fully professional.

School teaching has long been associated with women. There has been an ideological link between women's domestic role and their career as school teacher. Taking care of younger children in school is traditionally seen as an 'extension of motherhood'.

(Ullah, 2016, p.122)

No one would argue against medicine being included in the list of occupations that qualify as a profession. However, Cruess, Johnston and Cruess (2004) clearly felt that their role as medical educators, an amalgam of medical practice and teaching, was enough to sideline them from claiming the mantle of 'profession'. They published the following definition in an effort to clarify the point in the argument arising from the discussion within their discipline.

Profession: An occupation whose core element is work based upon the mastery of a complex body of knowledge and skills. It is a vocation in which knowledge of some department of science or learning or the practice of an art founded upon it is used in the service of others. Its members are governed by codes of ethics and profess a commitment to competence, integrity and morality, altruism, and the promotion of public good within their domain. The commitments form the basis of a social contract between a profession and society ... Professions and their members are accountable to those served and to society.

(Crues, Johnston & Crues, 2004, p.75)

The publication of this definition served to provide a common view of the nature of 'professions' to align these medical educators with the rest of the health fraternity. Teaching meets all of these requirements, and, hence should join the professions. It is a role that entails responsibility and accountability and serves society for the greater public good. When teaching is not given its due regard as a profession it tends to be viewed simply as a compilation of visible tasks. Conversely, when thinking of teaching as a full profession, it is clearly inadequate to focus on a task list or a suite of competencies.

Teaching as a lived experience

There is a particular attraction to the concept of 'teachers' lives'. The term conjures up a rich depiction of the teaching role as being not just a job, not just a collection of tasks to be managed, and it goes just a little further to explaining why issues of quality constantly erupt while teachers work. To be a teacher, an individual is required to build their life and identity around the role. Professional educators 'are' teachers, they don't just 'do' teaching. This identity view is also true of many other professions, and begins to capture the complexity that enfolds teaching. Analysis of such a concept may help explain wherein quality teaching lies.

Context for teachers' work

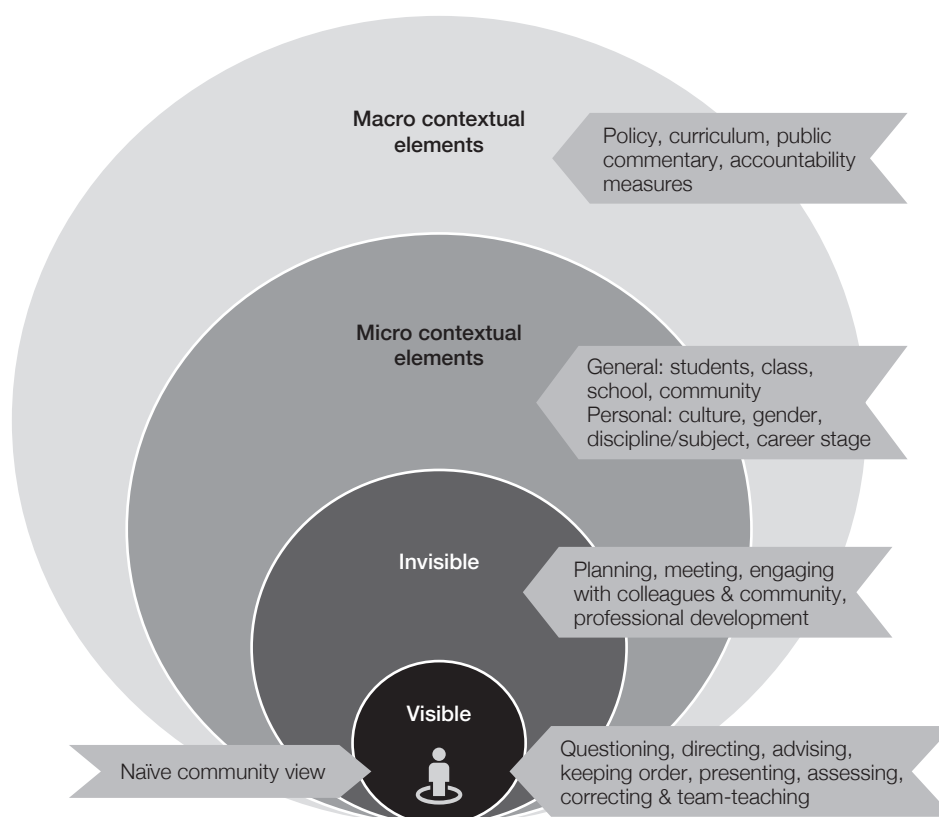
Visible work tasks for teaching are identified most often because reviewers consider teaching from their vantage points as consumers, as learners themselves, as children in classrooms, as it were. As described by Hargreaves, 'teachers are judged through children's eyes' (1994, p.14). This singular perspective, even if it is established by seeking out the views of students, which of course it rarely is in the public debate on teachers' work, is narrow and incomplete.

Much of what a teacher does is the invisible stuff of teaching – the work that goes on behind the scenes to support and frame the teaching, and which goes unnoticed by those outside the immediate environment and therefore is unacknowledged and unremembered. Invisible, to all but their colleagues, are the necessary preparations for classroom teaching, including the pedagogic thinking and resourcing they must do for students, the meetings with colleagues and school administrators they attend, community engagement, and the personal professional development aspects of teachers' work.

In essence, the popular naïve perceptions of teaching practice as something that wells up from no particular creative source, result in teachers' work often being seen as much simpler and less demanding than it is in reality (Hargreaves, 1994). But even if we pay due attention to the extensive task list, both visible and invisible, the very essence of a teacher's identity and quality will remain unremarked.

Consideration of teaching and the teacher by role, rather than by task, is critical to opening up a view of teaching that more closely relates to the reality. This approach requires an examination of the role as it functions within a set of contextual influences. Figure 3.1 depicts the contextual influences as layered components of teachers' work, ranging from the macro, societal, to the micro, teaching team and classroom interaction, levels.

Figure 3.1. The ecology of influences and contexts for teachers' work



(Bahr, data file)

Figure 3.1 proposes that, much like the ecosystem that frames and supports the emergence of quality teachers depicted in Figure 2.4, the work of the teacher is framed within an ecology of influences. In Figure 3.1 the individual teacher stands at the base with the visible aspects of their work depicted as the first circle directly surrounding them. This is the circle of classroom activity that is the reference point for the typically naïve community view of teachers' work.

Surrounding and compounding these important aspects of teachers' work are those additional invisible sustaining and nourishing aspects of a teacher's work, represented by the second circle, which expand from sources close to the teacher and extend to their community, their professional development pursuits and to their colleagues. Colleagues may work together at the visible level in the classroom when team-teaching. Teachers also work together with colleagues behind the scenes, at the invisible level, when aligning their content, assessment practices and resources, especially when working across a cohort of students.

The micro contextual layer, represented by the third circle, comprises factors that are close to the teacher with respect to their role, personal influence and interaction. This involves the unique culture of the local professional school community where the teacher's work is conducted.

It is at the macro contextual layer, the fourth circle, that there is broad, significant, societal influence on teachers' work. This macro level is where external drivers impact on the nature of schooling writ large, in such a way that the elements in the micro layer must adjust. The type of macro influences that could have such an effect include the emergence of new knowledge economies, changing societal values and technological innovations. The effects of these macro level elements could be: changes in the curriculum, mandated changes to teaching contexts, and changed expectations for learning outcomes for teaching.

This is a dynamic eco-system where each of these layers and elements work together to influence the way a teacher will work, and the nature of that work. All these kinds of changes create pressure for those working in the eco-system, and dissonance within the eco-system is, of course, likely.

This review paper argues that all of the complexity at both the macro and most of the micro levels would fall into an invisible box for most observers of teachers' work. That is, these are the unseen aspects of teachers' work. Despite this, they go a long way to framing what a teacher would need to do in the act of, and before the act of, actually teaching.

Variations in teachers' work

It must be remembered, however, that teaching operates across many contexts. There are many variations of teachers' work, and the nature of teachers' work in every context also varies. Researchers have examined some of the variable influences on the experience of work as a teacher. The most common variations and some influences operating in them are worthy of consideration here.

Variations between and within schools

In their research into the impact of schools on former students, Jennings, Deming, Jencks, Lopuch and Schueler (2015) discuss the observation that no school or class is the same. They found that when students from different schools attended university their school background accounted for more of the data variance in their achievement outcomes than their entrance test scores. That is, the school variable persisted in influencing differential outcomes for students for up to four years after they had completed their secondary schooling. If schools are so different, then it stands to reason that work within them must also be different. The school is, and belongs to, a community that is unique and those attached to the school have a particular shared history. The history sets the community expectations for significant events of the school, consistent achievements and protocols for communication. These parameters impact upon the expectations for and of a teacher, and the way they will go about their work in the short and/or longer term. Further, no one class of students is the same as another. Students interact with each other differently in different classes, bringing particular and unique perspectives of the world and their learning to their engagement in class.

Variations in the nature of work according to teacher experience and career stage

Various prominent writers and researchers have examined how the experience level of a teacher influences the way in which they interact with other teachers and their students, and how this alters the way they will engage in their working day. Huberman (1995) investigated the impact of the teaching received, on the teaching given. The effective teacher is a reflective practitioner (Zeichner & Liston, 2013). This reflective process influences future actions. Long standing research has shown that if they have been taught to practise reflectiveness in their teacher education courses, teachers will have developed a suite of personalised skills which they use to consider and interrogate the impact and effectiveness of their teaching (Hatton & Smith 1995; Ryan & Bourke, 2013). In this way, the underlying assumption is that once teaching, experience will naturally alter the way a person will subsequently teach. Practitioners will identify efficiencies, they will rely on different resources, and plan and conduct their teaching anew. By extension then, the length of time that a person has been teaching has been shown to have a positive influence on their conceptions of the teaching goals and of the tasks required to complete in order to reach those goals (Huberman, 1995; Steffy & Wolfe, 2001). Steffy and Wolfe argue that teachers will continue to grow and develop, if they are reflective practitioners creating a positive work environment.

Variations by learning levels in schools – primary, middle and secondary learners

Research has been conducted into the differences that emerge for teachers as they teach students at different schooling levels. Bahr and Pendergast's (2012) review of middle schooling literature in Australia found that teaching in the middle school level, for example, typically involved teaching teams and collaborative planning. By contrast, teaching at the secondary school level was more focused on discipline-based teaching than the other two schooling levels, and this often meant that teachers would work in specialised teaching spaces aligned with the

needs of their discipline. Schooling level therefore altered the ways in which teachers would organise students for learning (Bahr & Pendergast, 2012).

Variations by disciplinary conventions and ways of knowing

Research by Bahr, Freebody, Wright, Allender, Barton, Neilsen and Van Bergen (2010), investigated the different ways teachers planned for teaching, conducted activities for learning and developed discussions with students, and found that these depended on their subject discipline. The research followed eight teachers and their teaching of senior school Music, Physics, History and Biology at eight metropolitan comprehensive secondary schools in Queensland. The researchers used intensive observation rubrics and follow-up interviews to code and compare the disciplinary differences. Teachers included in this study were identified as highly accomplished by their school administrators. Two teachers for each discipline area were followed as they taught a complete unit of work according to their syllabus. Units were typically four to six weeks' duration. A researcher met and interviewed each teacher prior to the unit being taught, observed four classes, including the first and last class for the unit, and two other classes selected by the teacher as pivotal for the desired learning. The researcher interviewed the teacher before and after each observation session, to capture the teacher's intent and reflections on the pedagogy employed, and expectations and reflections on student engagement and achievement.

An essential finding of the study was that each discipline specialisation has signature ways of knowing and of problem-solving, and that this influenced the way teachers planned for learning, the ways they questioned for understanding, and the way they modelled engagement with materials and concepts of the discipline (Bahr et al., 2010).

Variations in interactions with students and colleagues according to teachers' gender

Bullough researched the differences and similarities between male and female teachers in early years' classrooms (Bullough, 2015). The research found that while there were significant similarities, there were also differences that could be attributed to gender, particularly in relation to the way interactions were made and maintained. Interaction style is a determining component for how we as individuals go about and understand our work. The participants in Bullough's study demonstrated that gender may influence aspects of the way a teacher might work.

Variations between different school types within education systems

Differing schools exist within education systems and jurisdictions, ranging from public or state, faith-based private, elite private, boutique and otherwise unique. Dimmock explored the managerial structures and general organisation of schools in different educational systems. The basic finding was that different systemic practices, protocols and policies differentially influenced the way people considered and enacted their teaching (Dimmock, 2013). The variations revealed by these research studies show that there are many and varied influences between and within schools, all of which change the way teachers work. The ones described here fall within the micro level of activity, as depicted in Figure 3.1.

Consistencies and regularities in teachers' work

Hargreaves considered this diversity of influences, but also identified some 'persistent and fundamental regularities' of teachers' work. These are that teaching typically occurs with age-segregated classes, teachers mainly teach alone, they ask questions to which they already know the answers, and they assess and care for students (Hargreaves, 1994, p. xiii). These regularities fall within the visible spectrum of teachers' work, and are shown in the visible layer of Figure 3.1. They account for a mere trifle when compared with the vast array of influences and expectations that fall within the invisible spectrum. However, because they are seen and the more variable influences are not as visible, an onlooker could assume that teaching mostly comprises regularities and routine. It is this review paper's view that the onlooker would be wrong, but unless the evidence is put before them, the assumption persists.

The assumption that teaching is rather routine, and therefore a de-skilled activity, is widespread. It is disrespectful and inappropriate to ignore the invisible elements of teaching when trying to capture the essence of quality in teaching. Teachers are fully aware of these hidden dimensions, but the range of dimensions is not acknowledged when the public, authorities, policymakers and media consider and comment on the quality of teaching. Hargreaves noted:

In much of the writing on teaching and teachers' work, teachers' voices have been curiously absent.

(Hargreaves, 1994, p.13)

Disrespect for the complexity of teaching has given rise to an environment where teachers are regarded as 'naughty children' (Hargreaves 1994, p. xiiv). The sense is that these naughty teachers need a firm hand, guidelines, rules, clear expectations and evaluative 'shocks' to keep them on track. Hargreaves wrote about this 22 years ago, but the situation has not much changed, at least not in Australia.

Pressure to adopt certain pedagogical approaches

The recent focus on the need to raise the quality of teachers in Australia has included compliance-type guidelines for pedagogical approaches to ensure effectiveness. Teachers are being told to work in particular ways. If the pressure to introduce pedagogical guidelines is successful, then teachers' visible work would become one characterised by compliance, which would no doubt require public accountability. Pedagogical guidance would result in considerable professional conflict for teachers, and disconnect them from the supporting professional layers of context, community and so forth depicted in the invisible and macro layers of Figure 3.1. It would be a professional disaster.

There have been many armchair experts weighing into the argument for compliance and alignment in teachers' work. For example, politicians have given their endorsement and have voiced an expectation for the use of specific pedagogical approaches (that is, the visible layer) with no regard to the variability of teaching, no understanding of the limits and appropriateness of the approaches (the invisible considerations), and without consulting the teachers who tailor the learning experiences for their unique environments and learners (the macro contextual factors). Teachers' work is being destabilised and their effectiveness as professionals is being undermined.

Example of 'pedagogical guidance': Direct Instruction

The specific pedagogical approach recommended by the current federal government for system-wide implementation, and announced with wholehearted enthusiasm is Direct Instruction (Walker, 2014). Direct Instruction (DI) is a model of teaching that relies on transmission approaches, such as lectures or demonstrations of the material, as opposed to exploratory approaches, which are the basis of models of inquiry-based learning. When he was federal minister for education, Christopher Pyne recommended DI for adoption as the fundamental pedagogical approach to be used across the nation.

So what is DI? Professor Alan Luke describes DI as having emerged in the 1960s through the work of US and Canadian behavioural psychologists. Not teachers. DI is a structured package for teachers that features pre-packaged scripts, strict programming and operant conditioning. Luke asserts that DI:

... has not been adopted for system-wide implementation in any US state or Canadian province.

(Luke, 2014)

Further, Luke asserts there is no research evidence that would convincingly support implementation on a large scale (2014), a position supported by the authors of this review. On the other hand, Explicit Instruction (EI), is somewhat different from DI, although the terms DI and EI are sometimes confused and used interchangeably.

While EI is also a teacher-centred approach, dependent on explicit behavioural goals and outcomes, it is not pre-packaged programming for teachers. Additionally, EI usually operates as part of the suite of approaches that teachers may select from to meet the needs of their students. The DI model of teaching, underpinned as it is by pedagogical uniformity, is in the opinion of the authors, by its very nature, problematic. The whole system of supports for professional teachers' work, represented in Figure 3.1, is undermined by any interference with the visible layer of action. By mandating DI, and perhaps meaning both DI and EI, the policy ignores the many facets of the teaching kaleidoscope and teachers' work system depicted in Figure 3.1. Such a government policy would effectively render teachers professionally impotent. To separate pedagogic purpose from a teacher's capacity to respond intuitively to individual students' responses and needs is disastrous, as it is this purpose that drives the essence of quality teaching beyond mere competence.

Teachers' work

By adopting a supplementary perspective to that provided by the ecology model to understanding teachers' work, we can identify what a teacher needs to know to do their job. Teacher knowledge and capability have been an area of active research, professional debate and commentary (although of varying quality, as previously mentioned). This knowledge and these skills can be seen to populate the different zones in Figure 3.1.

What do teachers need to know and be able to do?

Clearly teachers need to know their stuff, and be confident in the ideas they want their students to learn about or engage with. Also they need to have knowledge and skills which they will employ in facilitating their students' learning. Teachers need specific propositional, performative and declarative knowledge to enable them to approach the teaching role with expertise. The quality teacher no doubt is created by expertise, but all teachers of quality will need to know and be able to master a range of elements. The seven elements that emerge from the competencies of the APST are presented here, along with an extra element that moves a teacher towards becoming a teacher of true quality.

Knowledge and understanding of learning and development theory

The first necessary element of teachers' work is that they require a deep knowledge of learning, one that is based on principled understandings of how people come to learn particular things. Section 2 outlined how the APST addressed these understandings (APST 1.1–1.6). This knowledge should be combined with and informed by knowledge of developmental theory and its relevance to education. Teachers and the profession at large are hungry for theoretical validation to inform practice. The expert teacher needs to have detailed knowledge and understanding of contemporary learning and developmental theory so that they can be informed and critical practitioners. But the scale of this task is daunting, and additionally, theoreticians do not always agree with each other on the finer details.

There is a tendency on the part of some practitioners, and certainly by policymakers and politicians, to hunt for the magic silver bullet. Theories are advocated that often have simplistic and apparently-direct connections with things teachers should do to improve learning outcomes. The appetite for magic bullets has resulted in regular tidal changes within schools and systems, with teachers being required to rapidly develop knowledge of new theories and respond with substantial change to their practice.

Learning styles as an example of a learning theory as magic bullet

In order to demonstrate the importance of teachers being informed consumers of primary research, let us consider a learning theory that has wooed the teaching profession for decades; the notion of learning styles (Coffield, Moseley, Hall & Ecclestone, 2004). A simple search for the term 'learning styles theory' on Google Scholar turns up some 2,180,000 results. Multitudes of authors have written about the implications of learning styles across an incredible array of teaching challenges: for different disciplines (Jones, Reichard & Mokhtari, 2003), for gender (Riding & Grimley, 1999), for student giftedness (Dunn & Price, 1980), and for even-handedness (Casey, Pezaris & Nuttall, 1992).

The basic idea of learning styles is that people learn most effectively if the teaching approach matches the students' personal learning styles (Grasha, 1996). This assumes learners have one learning style, which they so prefer they are reluctant to shift away from it. Under this rubric, the teacher's role is to identify a student's preferred style and then design their pedagogy for the student, tailored in a way that would best suit them. This has been called the 'meshing hypothesis' (Pashler, McDaniel, Rohrer & Bjork, 2008). A large number of models, modalities and categories of learning styles have been explored in the literature, and there exists a huge array of advocated approaches teachers can use to determine the learning styles of their students.

The primary research regarding learning styles hails from the fields of neuroscience, neuropsychology and learning sciences. The latest view, informed by contemporary research in the neuro and learning sciences, has seen the concept of learning styles described as 'nonsense' (Greenfield interviewed by J. Henry, 2007), 'one of the 50 great myths of popular psychology' (Lilienfeld, Lynn, Ruscio, & Beyerstein, 2010), and 'highly questionable' (Coffield et al., 2004). Most literature on learning styles, where the research questions relate to how learning styles might be considered for teaching, use secondary research, preferring to focus on the validity of the learning styles theory. By avoiding the findings from the primary research, that is, those who should be listened to by teachers and teacher educators, the message that the concept of learning styles is unsupported by evidence, is neatly lost.

This example of a theoretical debate illustrates why teachers need to be informed consumers of primary research. We require teachers to know and understand contemporary learning and developmental theory, and to devise ways in which they can use these contemporary theories of learning and development to inform their practice. This kind of knowledge and ability to critique contemporary primary theory is expected of teachers, and, further, we expect them to have such a deep understanding that they are able to translate theoretical knowledge into effective practice. We expect all teachers to keep up to date with this constantly developing and reorienting body of knowledge, and to respond with deep understanding. To be ready to do this kind of theoretical work, a graduate teacher would need to have been explicitly taught such theoretical analysis and application research techniques by teacher educators.

Being fully equipped with knowledge of the current learning theories and implementation packages, and having expertise in applying this knowledge to planning and pedagogy, is necessary but still insufficient to merit being described as a quality teacher. Such a teacher might be considered competent on the relevant APST, but students or colleagues would be unlikely to consider teachers who only have such knowledge as quality teachers. Something personal needs to be accessed to translate this into teaching practice; the quality teacher brings more to their teaching than competence and effectiveness.

Discipline knowledge

The second necessary element of teachers' work, a public given, is that all teachers should know their disciplines (Goulding, Rowland & Barber, 2002; Metzler & Woessmann, 2012), and this is detailed in the (APST 2.1–2.6 in Figure 2.3). We expect secondary teachers to possess specialised knowledge that is equal to professionals operating in the same discipline. For example, a music teacher needs to be a musician; a mathematics teacher needs to have met the graduate outcomes for at least a Bachelor degree with a major in mathematics. The AITSL program standards (the companion standards to the APST and which provide guidelines for

ITE program design and conduct), stipulate this requirement for Secondary teachers to have reached final year standard in their discipline content. Primary teachers need comprehensive knowledge across the curriculum of the disciplines they teach, and so forth.

The disciplinarity project

Previously cited research indicated that greater disciplinary knowledge and expertise of the teacher can lead to deeper student learning (Bahr et al. 2010; Van Bergen & Bahr, 2009). These studies investigated differential teacher impact on senior secondary learning achievement of students being taught by teachers in the fields of Biology, Physics, History and Music.

The first aspect of the research explored the different approaches undertaken in teaching by two groups of teachers and the differential learning impacts. One group of teachers was highly accomplished, with higher degrees in their discipline and experience in their professional disciplinary field. The second group comprised highly experienced and well-regarded teachers who had generalist education degrees that equated to undergraduate expertise in their discipline, but were not experienced in that discipline field.

Researchers noted that the approach to teaching undertaken by the two groups of teachers differed markedly. The highly accomplished teachers problematised the learning, while the experienced teachers tended to present problems as though there was a correct answer to be found. This was true even in the experiments and practical work for Physics and Biology. The highly accomplished teachers – those with higher degrees and professional disciplinary experience – helped the students to consider what they were seeing as if they were physicists or biologists. The experienced teachers – those without the higher degree or professional disciplinary experience – worked with their students within the paradigm of the idea that for any given problem there is usually one correct way of solving it, leading to one correct answer.

In characterising the pedagogical styles, the highly accomplished teachers could be considered discipline artists, while the other teachers were considered to be technicians. The highly accomplished teachers exhibited a disciplinary way of knowing that was not evident in their counterparts and which contributed to their teaching flair. They focused on the ways one might think through a problem, using conventions of the discipline, bringing learners to a solution through sophisticated problematising. These research findings illustrate the important relationship between the level of teacher discipline knowledge and the nature of achieving learning outcomes for students.

A second aspect of the research study led to the finding that although the taught curriculum for each discipline was broader than the specialist knowledge and experience of the highly accomplished teachers, the difference in student learning outcomes was marked. Both groups of students were equally able to demonstrate declarative knowledge of the topics. However, their knowledge was qualitatively different. The students of the highly accomplished teachers were better able to explain the knowledge they had acquired; they approached the learning problems from perspectives of field expertise and used the ways of knowing that operated in the field. They were able to pose problems and critique information to an extent well beyond the regurgitation of facts. This improved learning effect between the two groups was apparent across all disciplines. The highly accomplished teachers who had worked in the discipline field were able to question and develop understanding in their students, based on their ways of knowing and discipline conventions, that gave a stronger foundation to their learning.

Teachers draw on their deep and principled discipline knowledge to inform their planning, communication and engagement with learners. Teachers do the job of teaching based on their sense of the ways of knowing that are appropriate for their discipline. The high quality teacher is one who can build students' understandings appropriate to a subject field or discipline, using the ways of knowing and orientations to learning that are also relevant to the subject at hand. Ideally, they will induct their students into the subject field as a co-knower, as a co-builder, with a sense of the whole field. Students will become critical participants in the knowledge domain. But even a teacher who has deep knowledge of their field, alongside their foundation knowledge of learning and development theory and application to classroom practice, will still

need other capabilities to influence student self-belief and energy for learning (Fairbanks, Duffy, Faircloth, He, Levin & Rohr, 2010).

Pedagogical and technological pedagogical content knowledge

The third necessary element of teachers' work is that a teacher needs pedagogical content knowledge (APST 3.1–3.7 in Figure 2.3). In some ways, the detail of the pedagogical content knowledge was the difference between the highly accomplished teachers and the experienced teachers reported in the disciplinarity project.

The term Pedagogical Content Knowledge (PCK) was first coined by Shulman (1986) and described a teacher's knowledge of

... the ways of representing and formulating the subject that makes it comprehensible to others.

(Shulman, 1986, p. 9)

Shulman argued that PCK involves knowledge of a suite of relevant and powerful analogies, illustrations, examples, explanations, demonstrations and strategies to reorganise and understand, to erase misconceptions. PCK involves:

Understanding of what makes the learning of specific topics easy or difficult: the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons.

(Shulman, 1986, p. 10)

PCK is the connection between teacher knowledge and teacher action; it is the difference between a native Italian speaker and a teacher of Italian language, to non-speakers. It is the essence of teaching. It is informed action, the 'how' that the teacher embeds in their teaching. It is what this teacher chooses to do in their pedagogy, based on their knowledge of the subject and the learners, to effect learning. Since Shulman, PCK has attracted the interests of many theorists.

Most recently the concept has been expanded to include Technological PCK (TPCK), that is, knowledge of the effective uses of technology in pedagogy to support learning (Mishra & Koehler, 2006). Just as for disciplinary knowledge, there are two aspects here, knowing about PCK and TPCK and being able to appropriately apply and implement T/PCK for learners. The quality teachers will bring themselves to the pedagogy, and in so doing, transform simple sequencing of activities and questioning scripts into a learning experience that is both memorable and personal to the students. In combining all these elements – learning and developmental theory, discipline knowledge and understanding their students – with PCK and TPCK, we are beginning to see the comprehensiveness of teachers' work, and the complexity of the craft.

Behaviour management knowledge

The fourth necessary element of teachers' work to be considered, involves skills for behaviour management and classroom control (APST 4.1–4.5 in Figure 2.3). Ideally, students will be enthralled by the learning experience provided by their teachers. They will be so engaged, with their curiosity activated and their motivation to learn attuned to wherever it is that the teacher is leading them, that they will not interrupt with off-track comments, they will not interfere with other students, ramble on incessantly about other topics, use inappropriate language, make rude and disrespectful comments about other students, teachers, or the world at large. However, it is not likely that all students are so engaged all the time, and there are circumstances where students may waft away on a daydream or be distracted by a fellow student's random entertainment, which detracts from the learning. It is then that teachers need to be able to manage student behaviour.

There needs to be a sense of safety and order in the classroom and in the learning activities, in order that learning can occur. Students should be managed until they understand the importance of self-management, to help them through the times when their attention wanes. Teachers

exercise important skills in managing these many activities and attitude confluents. The mark of a quality teacher is that they will effect their behaviour management with flair and, to the learner, almost invisibly.

There is an important place for whole-school climate in achieving effective behaviour management, and also for synergy between school and class organisation and philosophy. The recollections contained in Figure 3.2 describe an individual's account of behaviour change from a level of unruliness to productive learning as a result of a substantive shift in pedagogical approach in a school.

Figure 3.2: Recollections of positive behaviour management

The teachers in Year 9 thought that to keep me contained required what Rogers calls 'vigilant management' and 'assertive discipline'. It was a large comprehensive public metropolitan high school. But in Year 10 I was given an opportunity. I was selected for the 'autonomous class'.

My autonomous classmates and I were given access to a form teacher, a few specialist teachers for particular disciplines, and a library of boxes full of tasks and assignments for us to sift through, select and complete. There were few scheduled classes, excepting a few introductory ones at the beginning of a teaching term to help us understand the parameters of the smorgasbord of available tasks. We had no daily timetable, no school bells, and no uniform. We would band together around tasks and arrange meetings with teachers to support us for practical work in the school lab and so forth. Every couple of months there would be a management meeting between each of us, our parents and the form teacher to discuss our progress, and to decide if we could continue as autonomous. We were a self-directed community of learners. At least we thought we were, but clearly the teachers had put an immense effort into planning and developing the resources and approach for the experiment. We were all about 14 years old. This was a huge turning point for me, and I did really well. I actually worked really hard.

So, using Rogers' terms, I had responded to 'non-vigilance', the removal of active behaviour management action on the part of the teacher. I now realise I was the recipient of the deep behaviour management knowledge and understanding of my teachers (and the whole school). In setting up this program they had explored their knowledge and understanding of behaviour, at the point where educational philosophy, pedagogy, and psychology collide, and provided a positive and appropriate learning environment to suit the learners.

The result was an elimination of behaviour management issues for us. At a time when fewer than 35 per cent of my age peers stayed on from Year 10 to Year 12 (Department of Employment, Education and Training. Economic and Policy Analysis Division, 1991), every one of my autonomous classmates completed schooling to Year 12, went on to university and through to higher degrees.

(Bahr, data file)

The final paragraph of this recollection can be taken as evidence that the pedagogy and school climate in this instance did have a profound and positive impact on the learning of this individual and her peer students.

Many schools have seen marked improvement in the behaviour of learners from approaches to school reform that connect their school philosophy, enacted policy and pedagogy with the learner needs at the heart. Researchers Mitchell and Bradshaw (2013) conducted a large-scale empirical study of the changes in behaviour and school climate resulting from the implementation of either positive behaviour support or reinforcing exclusionary discipline strategies, to manage behaviour. Their research involved 1902 students in 93 classrooms, at 37 elementary schools in Baltimore, United States of America. They found that positive behaviour support approaches,

such as rewarding or simply recognising good behaviour, resulted in improvement of school order, discipline, behavioural fairness and student–teacher relationships. The exclusionary discipline strategy, where misbehaviour results in removal from the classroom or from school, showed worsening of behaviour problems, discipline and relationships.

However, as argued by Rogers (2015), individual teachers need a personal resource kit, acute observational skills, and a repertoire of actions to guide their interactions with students as individuals, in small groups and in large masses.

Effective behaviour management emerges from the application of an embodied suite of skills. That is, competent teachers, as demonstrated by attainment of APST 4.3 (Figure 2.3) know how to behave to better achieve student compliance and engagement. The effectiveness of their behaviour management also relies on personal skills of organisation, and on their ability to draw from a range of communication styles and approaches that are contextually relevant and timely. It also relies on situational awareness: the skill of a teacher to forecast where student behaviour will track and to facilitate positive engagement in learning.

There have been many lengthy treatises written on behaviour management. It is often seen as a most difficult aspect of teaching, with particular attention given to setting the environment and dealing with challenging behaviours. Experienced teachers know that there is no pro forma for behaviour management, as each child, class and context demands something different of the teacher. Unfortunately, it can sometimes be extremely difficult to establish harmonious working and learning environments. If a teacher does not have a handle on their classroom management, they will simply not be an effective teacher. Experienced teachers are usually reluctant to acknowledge that behaviour management remains challenging for them. No amount of enthusiasm, discipline knowledge or sense of vocation will save the learning if a class is out of control, and situations can easily spiral. However, experience is an incredible advantage, as is consolidation of knowledge and skill in any field, so teachers can improve their behaviour management.

Since behaviour and classroom management is so necessary for learning to occur, and because it can challenge even the most experienced teacher, it holds a firm and uncontested place in the suite of things a teacher must know about and be able to do. As a result, a huge amount of commercial publishing enterprise is shown to fulfil the demand for advice. There are literally thousands of kits, tools, ideas and tips available to teachers.

The quality teacher is an expert at behaviour management, and their classroom management is artistry, and, in the view of the author of this review paper, not simply the application of craft. Their skill is demonstrated in their quick evaluation of situations and ability to select appropriate approaches to classroom management. Their quality is seen in their ability to bring the learners to the task of learning without overt calls for attention or demands. They have an air of positive and high self-regulatory expectation that students respond positively to, and quickly. Experience plays a part, but once again there is something extra described in the management capacity of true quality teaching.

Assessment and data analysis knowledge

The fifth necessary element of teachers' work is that effective contemporary teachers must know how to design and implement assessment that is valid and reliable (APST 5.1–5.5, in Figure 2.3). The quality teacher is able to innovate and excite students through an approach that supports learning from and through assessment. The teacher needs to know and understand the connections between curriculum, pedagogy and assessment, and have a deep and principled knowledge regarding the evaluation of various forms of student data to understand progress and to inform teacher planning and action. AER57 *Reforming Educational Assessment* was devoted to this very topic, and to how teachers should seek to teach and assess with a growth mindset, rather than only referencing student achievement to external standards (Masters, 2013).

There are many formative and summative assessment approaches a teacher might employ, and there are disciplinary conventions for the demonstration of learning that impact across the curriculum. That is, the appropriate forms of assessment for scientific knowledge and

understanding can be quite different in many respects to the Humanities disciplines, or the Arts. The quality teacher will understand the material and the learner to such an extent that they can employ the very best forms of feedback and reporting to better support improvement of performance, motivation and future engagement. They will be expert at communicating the balance between expectation and achievement to parents and students, and they need to be able to package up the data in ways that explain progress to regional offices and for a range of accountability interests.

Expertise in assessment and data analysis is a requirement in the new age of teaching that has dawned over the last two decades. Traditionally, teachers would set exam papers, essay assignments, projects and reports as assessment platforms for students. In Queensland there was a period where teachers were encouraged and supported to employ Rich Tasks for learning and assessment through the Productive Pedagogies initiative of Education Queensland (Grauf, 2001; Lingard, Hayes & Mills, 2003). These Rich Tasks were authentic and linked to real-world problems. They were interdisciplinary and involved students in investigative activity. A criticism of the Rich Task framework was that the self-directed and exploratory nature of the Rich Tasks, as well as the inter-disciplinarity of the content addressed in the student work, precluded clear direction and evaluation of the depth of understanding and competencies of the learners. Currently in Queensland there has been great interest in more centralised assessment frameworks that are more directly aligned to disciplines.

A key development exercise is the transition from a complex school-based, moderated assessment system for senior schooling facilitating ranking of matriculation results, a legacy of the system established by Nancy Viviani in 1990 (Clarke, 1990). Into the mix has been thrown a national fascination with standardised testing (Lingard, 2009). All teachers need to be able to ride the tides of popularity in the area of assessment, and rely upon their own insights and understandings to use a variety of measures to evaluate student learning and learning needs. However, great teachers bind the assessment approach within an appropriately sequenced learning venture in such a way that motivates students, provides them with meaningful mastery goals, while maintaining an authentic connection with the conventions of the discipline and the contemporary problems of the real world. Once again, quality in teaching is a dimension beyond the basic competence of designing and implementing valid and reliable assessment.

Personal and professional literacy and numeracy

The sixth necessary element of teachers' work is that effective teachers need a high standard of personal literacy and numeracy. This has been recognised by the inclusion of a requirement in the AITSL program standards for pre-service teachers to demonstrate personal literacy and numeracy to a level that would place them in the top 30 per cent of the population prior to graduation (AITSL, 2015). One important aspect of a teacher's work is to demonstrate, lead and teach literacy and numeracy. Research into the role of teachers in the teaching and learning of literacy, both generally and with reference to particular disciplinary literacies, is a huge field. For many, the teaching and learning of literacy is the number one responsibility of all educators (Whitney, 2016). The capacity of a teacher to lead in this way is of equal importance to demonstrating the discipline knowledge previously discussed. It would not be possible for a teacher to be considered effective if their personal literacy and numeracy were not demonstrably excellent.

Professional relationships' dimension of teaching

The seventh necessary element of teachers' work to be considered in any analysis of its nature and elements, is the dimension of professional relationships (APST 6.1–7.4 in Figure 2.3). Quality teachers will be able to interact with people in ways that establish, support and sustain effective climates for learning. They work well in teams, and teams form around them. They are inclined to take the initiative for change and to inspire others to work with them to achieve the set goals. Parents, students and colleagues regard them as knowledgeable, focused, loyal and dedicated to the shared goals. The authors believe that the professional relationships established

by the quality teacher extend from their deep-seated identity and vocation as educators. There is a mutual dependency between the other facets and elements of a teacher's work and the ability of a teacher to become established professionally within their school community. For the quality teacher, there is an air of completeness in their teaching persona that facilitates their acceptance as accomplished professionals.

Quality teaching practices

Education Queensland (EQ), the systemic employer for state education in Queensland, has demonstrated its agreement that the APST are minimum competency requirements and that more is required. This jurisdiction has attempted to detail the hallmarks of quality teaching practice in the Queensland state education system (Figure 3.3). The EQ quality teacher practices are explicit statements that unpack the integrator elements of Figure 3.3. This approach to detailing what might be important for the assurance of quality teaching has not been taken up by other jurisdictions.

Figure 3.3 Education Queensland descriptors of quality teaching practices (2016)

<p>Quality teaching practices include:</p> <ul style="list-style-type: none"> • arranging multiple opportunities for students to take in the core information or concepts • using a variety of ways to make sense of ideas (presenting in different formats or styles) • using a range of opportunities to demonstrate what has been learned • providing quality learning experiences for all students regardless of their starting points • using the P-12 Curriculum Framework documents to plan learning experiences • preparing for the future • adapting for different skill levels • adjusting the amount of 'output' required • using peer and team work • linking learning to real-world purposes • directing teaching of routines and organisational strategies • accessing technology • engaging in teamwork – using technicians, teacher aides, year or subject area teaching teams in all stages of the curriculum cycles.
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(adapted from Education Queensland, 2016)

Unsurprisingly there are alignments between the quality teaching practices outlined by EQ in Figure 3.3 and the APST, however each of the EQ descriptors goes beyond the requirements of the basic APST. Taking as an example the first EQ quality teaching practice dot point, 'arranging multiple opportunities for students to take in the core information or concepts', is not explicitly listed in the APST, but is addressed in part by the standard 'to plan, structure and sequence lessons' (APST 3.2 in Figure 2.3), or the standard 'to use teaching strategies' (APST 3.3 in Figure 2.3). By being explicit, EQ has set a higher bar than the APST, and their standards are relevant and applicable to all teachers in their sector; beginners who will aspire to reach them and experienced teachers who may well be able to demonstrate them. This extension of the requirements, beyond the APST, is evident in each dot point of the EQ quality teaching framework. The fact that EQ has felt the need to construct this list of attributes for quality teaching is *prima facie* evidence that the APST are not sufficient.

Concluding comments

In this section one of the central arguments has been that teaching must be conceived as complex and professional work. However, the discussion drew attention to substantive differences between teaching and other professions in one important respect. That is, the observation that the beginning teacher is no different from the experienced teacher in the requirement to lead the learning of their charges. In exactly the same way as the experienced teacher, the beginning teacher acts independently and does not work with direct supervision when teaching their classes. Discussion in this section has highlighted that this is a unique circumstance among professions. Take, for example, beginner engineers, doctors, pilots or lawyers. In these professions there is a stratified and formal system of supervision and control over the performance of the beginner, which effectively amounts to the provision of training wheels and careful direct monitoring of actions, with a requirement for sign-off by a supervisor for any key decision-making.

This is not the case for the teaching profession, where assurance of quality, to this point, has relied solely on the face evidence in the professional standards statements and the accreditation processes embedded in them. These assumptions about the APST ensuring quality were rejected by the authors of this review paper. The stance taken is that competencies are necessary but insufficient for the assurance of quality teaching.

The Section 3 discussion further analysed how for effective teacher education there is a need to recognise that quality teaching demands more than a competency framework, even though to be competent across all the dimensions identified by the APST requires a comprehensive suite of capabilities. Section 3 argued that an effective teacher must know their content and also how to teach it, and they must take control of their own professional learning, while making substantive positive, principled and ethical contributions to their teaching context. A quality teacher is described as a fully competent teacher who also possesses attributes that serve to encourage, excite, and engage learners. But, this discussion further posited, a quality teacher will be committed to, and capable of developing positive working relationships with their students. Quality teachers form relationships with learners that imbue them with self-belief. The students achieve well, but more than just achieve, they have a sense of positivity about themselves as learners.

The discussion continued and made the case that a competency framework necessarily fails to recognise the vital capacity that quality teachers have to win hearts and minds, and to establish positive relationships with students. This attribute alone sits as a capability that is beyond basic competence. An overview of several key attributes for quality was provided, with a view to informing discussion of targeted teacher education.

In Section 4, we will consider how teacher education can and should play a part in the development of quality teachers.

Achieving quality teacher education

There are many different pathways into teaching in Australia. As of January 2016 there were 408 different programs listed by AITSL as either fully accredited or pending accreditation for qualifying as teaching. These programs are offered by 48 different Australian higher education institutions (AITSL, 2016). The jurisdictional registration authorities for each state and territory also consider international qualifications of candidates for teaching on a case-by-case basis. This means that the possibilities and background stories for teachers' preparatory pathways into teaching, in Australia, are vast.

In December 2010 the state and territory ministers for education and the Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA) agreed to adopt and abide by the AITSL framework for national program accreditation and design consistency for ITE. However, this was only for minimum standards, which then developed into the APST through extensive consultation (AITSL, 2011).

Assuring quality

The first consideration in assuring quality in teaching is to evaluate the nature of the pathway into the profession and how well it is designed for quality. In Australia, the range of pathways to teaching is diverse, despite the national consistency framework. Clear regulatory requirements have been established, albeit complex and difficult. While there are differences in the pathways, length, program design and so forth, there is absolute consistency in requirements for the demonstration of each of the 37 APSTs (Graduate level in Figure 2.3). When accrediting a course AITSL, as well as the jurisdictional regulatory authorities, must consider demonstration of the APST. Teacher education students report their achievement against the professional standards. The idea here is that this accreditation process will assure quality, an argument rejected by the authors of this review paper.

The program standards, which address the requirements for ITE program design and conduct, are set by AITSL and were adopted across the nation in an effort to achieve national consistency for program accreditation and for establishing a common standards framework for graduate teachers. They set the parameters for allowable pathways into teaching and they detail the volume of learning, the curriculum content balance, the requirements for professional experience and so forth. Institutions report against the program standards. There is agreement between all stakeholders to work with the guidelines for implementation of a process for national review of program submissions, while involving and respecting the regulative authority of the jurisdictional

regulators. These program standards have been devised and set by AITSL in consultation with the Australian Council of Deans of Education, Australasian Teacher Regulatory Authorities, state regulatory authorities, and focus groups with principals and teachers.

Accreditation processes for ITE programs

The exercise of gaining national accreditation for Australian ITE programs involves submission of detailed program design materials by higher education institutions for close consideration by a national panel. A different accreditation panel is convened for every submitted program. These accreditation panels, convened by AITSL and managed by the relevant jurisdictional regulatory authority, are composed of teachers, parents, principals, union representatives, higher education representatives and teacher educators. The panellists have all been trained in the required detail of the AITSL program standards and the demonstration of APST. Programs that meet the program standards and which demonstrably introduce, develop and require achievement of the APST, gain accreditation. This is actually a huge step forward from earlier times, despite the often-awkward administration at a personal level.

The AITSL program standards themselves are separated into primary and secondary levels, where teachers are considered as being one of two types: primary or secondary. Based on this, their pathway into teaching will be either via enrolment in an undergraduate or graduate entry course: undergraduate for those aspirants who do not have a first degree, and graduate entry for those who do have a first degree. These ITE programs are required to be four-year equivalent for undergraduate, and two-year equivalent for graduate entry (for those with a first degree in an area other than education). The higher education program standards detail minimum entry standards for candidates generally, and also specifically for the fields of primary and secondary teaching, and outline the balance of content in the respective teacher education program. Unfortunately, nothing more complex than this primary/secondary dichotomy has been developed in the APST, which is a problem, as the design does not match the reality in the field. For example, it causes complications for applications from higher education institutions wanting to provide courses for P–12 contexts, as is allowed jurisdictionally for specialist teaching areas like Music, Physical Education, Special Needs and Languages other than English. There are also difficulties in managing applications for programs that aim to develop middle school teachers. The strategy adopted to address the diversification of the initial education programing has been to have additional requirements for certain specialist variations. This can also be messy in process.

What makes up an accredited teacher education program?

To qualify as an accredited initial teacher education program, a course must include elements of curriculum, professional studies, a practicum, assessment items and possibly electives.

Curriculum studies need to address all the learning areas of the Australian Curriculum. The sample design includes English (× 3), Maths (× 3), Science (× 2), Humanities/Social Science (× 2), Arts (× 2), Health and Physical Education (× 1), ICT (× 1), and Languages (including Indigenous Languages). These curriculum courses address discipline content and pedagogical content knowledge, technological pedagogical content knowledge, discipline specific assessment and the parameters of the relevant Australian Curriculum syllabus. There are also courses on learning to read and write, and to be numerate. Students will be well versed in planning and finding appropriate resources through study in these courses.

Professional studies include courses on Indigenous Knowledges, Special Needs, Learning and Development, Assessment and Data Analyses and Behaviour Management. These courses provide the broad professional knowledge for the evaluation of performance and design for learning. Figure 4.1 is a sample four-year teacher education program.

Figure 4.1: Sample ITE program

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
SEM 1	SEM 2	SEM 1	SEM 2	SEM 1	SEM 2	SEM 1	SEM 2
English, Literacies and Language	Primary English Curriculum Studies 1	Science in Primary Education	Humanities and Social Sciences Curriculum Studies 1: History and Civics	Humanities Curriculum Studies 2: Geography and Civics	Elective	Primary Arts Curriculum Studies: Performing Arts	Elective
Arts Curriculum Studies: Visual and Media Arts	Maths in Primary Education	Primary Maths Curriculum Studies 1	Primary Maths Curriculum Studies 2	Primary English Curriculum Studies 2	Indigenous Education (EAL/Dialect)	Inclusive Education: Service Learning	Assessment 2: Using Data to Inform Teaching
ICT in Primary Education	Education and Society 1	Teaching Primary HPE	Primary Science Curriculum Studies	Teaching Technologies	Primary Assessment 1: Summative and Diagnostic Assessment (20)	Languages and Integrated Curriculum	Elective
Child and Adolescent Development & Learning	Teaching Strategies and Planning (10)	Behaviour Management: (10)	Indigenous Education (10)	Education & Society 2 (10)	Inclusive Education	Elective	Internship (20)
	School Visits	School Visits	School Visits	School Visits	School Visits	School Visits	
	Field Experience (2week prac) (10 days)	Field Experience (2week prac) (10 days)	Field Experience (2week prac) (10 days)	Field Experience (2week prac) (10 days)	Field Experience (4week prac) (20 days)		Field Experience (4week prac) (20 days)
							Internship (4 week) (20 days)

(Bahr, data file)

The sample program in Figure 4.1 has space for electives. This is important because this will be where students take courses to build specialisations in Maths, Science, Technology or Special Needs in accordance with very new national requirements.

The sample ITE program has practicum components, including the required minimum of 80 days practicum under supervision. This program also has 20 extra days for internship, which is a bespoke design commonly adopted for teacher education programs.

Each course in the program would typically have three assessment items designed to assist pre-service teachers develop and be able to demonstrate achievement of the APST. A capstone requirement of the program is typically a portfolio of evidence set against the APST criteria.

Figure 4.1 presents a bare bones program structure, with basic requirements, plus the internship. The submission for accreditation to accompany this plan would have an extensive commentary on the content of the courses, the linking experiences, the management of field experience, and the mapping of APST against assessment items. The actual requirements for shepherding this through the processes are quite onerous, and most universities will second an academic to the task for a year or more to develop the course and the supporting rationale and explanatory materials, and see it through the accreditation process.

Additional accreditation requirements for some ITE programs

Accreditation pathways for some areas of ITE require additional accreditation be undertaken by training institutions, by AITSL and by other regulatory bodies.

For early childhood programs there are additional requirements for gaining recognition with the Australian Children's Education and Care Quality Authority (ACECQA), which is the program accreditation regulatory body for the early childhood sector. ACECQA has its own set of content and competency requirements for accreditation. There is overlap between the sectors of early childhood and schooling, given that the field of Early Childhood is considered to be the years from birth to 8 years, and schooling generally starts for children at around 5 years. So the early childhood teacher must be prepared for the before-school sector as well as for the first years of primary school. The ITE programs that address early childhood teaching preparation are required to be doubly regulated, by AITSL and ACECQA.

Such an overlap in accrediting also exists for Middle Years teachers; however, there is no additional regulatory body for middle years, only AITSL. However, if an ITE program is to target middle schooling, which is a common stage of schooling, particularly in P–12 schools, then it must meet the AITSL program standard requirements for both primary and secondary. Any survey of the accreditation journey for some teachers (and their schools) and for the teacher education programs requires that further considerations and regulatory processes be undertaken.

To further add to the complexities of accreditation pathways, some jurisdictions have added their own additional requirements for particular cohorts of teacher programs and those who take them. In Queensland, for example, the Queensland College of Teachers (QCT) has a set of additional program requirements resulting from the state government's priorities and jurisdictional excellence initiatives and policies (QCT, 2015). This situation has been possible because education is the responsibility of the states and territories. The federal government has a minister for education but no actual control of the education sector, aside from contributing some financial support, while AITSL has no regulatory authority for the states and territories.

The states and territories also manage their jurisdictional public education system. A key part of this is ensuring they have sufficient teachers to meet demand. It is the states and territories that recruit, register, hire, manage and fire teachers. In Queensland, this has meant that the state minister for education has permitted graduate entry programs to continue to be only one year's duration for secondary teachers, a significant departure from the national consistency framework, although this decision, which was in response to workforce demand, is currently under review.

To give an example of the accreditation complexities, let us say University A is a private Queensland institution that is not able to self-accredit the degrees they offer, regardless of field. Several universities have been given the authority to self-accredit by Tertiary Education Quality Standards Agency (TEQSA), the national quality assurance agency for university programs), but they are accrediting the standard of the degree, not that the degree meets the separate accreditation requirements to enable teacher registration. That is, TEQSA ensures that a Bachelor degree, for example, from any institution in Australia has a consistent level of rigour. A different aspect of this fictitious case study is analysed in the next subsection.

This analysis of accreditation processes has indicated that a teacher in Australia may be a graduate from a one-year or two-year program, following a first degree, or a four-year equivalent program. They may enter directly from school having met the requirements for matriculation, or they may enter as a graduate, with a degree from the same or different higher education institution.

Further program variations with particular intentions

Most ITE programs have a general structure similar to that shown in Figure 4.1: discipline foundation years (unless this has already been demonstrated by the holding of a degree), followed by professional placements for classroom experience, through the practicum, coupled with theoretical and administrative learning at the institution. However, there is also a range of

other specifically focused and funded ITE programs that are available to those who successfully apply for them.

In some states teacher education program students may pursue the Teach for Australia program, a version of the two-year graduate entry model, but with classroom responsibility beginning after six weeks. Although this is a federally funded model, not all states have agreed to enable the preparation of teachers using this model (for example, Queensland). The evaluation of the Teach for Australia has shown that the program is rather expensive, compared to other teacher education approaches, and there is no clear indication that the program produces more effective teachers. Furthermore, attrition from the profession of teachers recruited via Teach for Australia appears to be high (Weldon, McKenzie, Kleinhenz, & Reid, 2013).

Some approaches have significant school-based mentoring built into the program, and some do not, although all programs are required to have a minimum number of days of professional placement (80 days for an undergraduate program and 60 for a graduate entry program). Intriguingly, the number of days required for professional experience for graduate entry programs and undergraduate programs is different. The argument for this has been the lack of time available in the shortened program of the graduate entry pathway. Some programs have internships for the pre-service teachers, sometimes paid, often not, and other programs do not have internships.

In Australia we have moved from a fairly unrestricted accreditation climate in the 1980s to a comprehensive accreditation process and suite of standards – all in the pursuit of quality. Yet, it is not clear that the target of quality can actually be assured through the type of attention paid to the process and standards that have been established. The motivation for such a climate existing may well be the sense of distrust in the education profession and a general lack of understanding of the role of teacher education. Margaret Lloyd was commissioned, as a National Office of Learning and Teaching Fellow in 2013, to outline a roadmap to accreditation of programs. She provided a comprehensive review of the intersecting and often competing requirements for accreditation, for ITE programs in Australia. Lloyd's work has mapped all the initial education accreditation requirements across the national Australian regulatory landscape (Lloyd, 2013).

Sample case study illustrating the process of seeking course accreditation

Using Lloyd's mapping, and illustrating how tediously the process can work, let us examine how the regulation interests might work for a fictitious private university in Queensland as it pursues permission from AITSL and their local jurisdictional regulatory authority to offer an accredited Bachelor of Education in Early Childhood. For this university to bring the program to offer they must satisfy the requirements through separate complete comprehensive submissions or additional templates to each of the listed bodies. (The submission to its own academic board regarding the policies, structures and institutional graduate capabilities met by the program, would probably be a three step process, each with differing levels of complexity.) The stages are as follows:

- Faculty approval (e.g. workload management)
- Curriculum/program committee approval (e.g. consistency with assessment policy)
- University board approval (e.g. market analysis)
- TEQSA, regarding the elements of risk (e.g. international student considerations, Australian Qualifications Framework compliance), quality of teaching and resourcing for the program
- AITSL, regarding how program standards are met and how APST are demonstrated
- ACECQA, regarding how specialist content for the Early Years Learning Framework (ACECQA, 2014) is met
- QCT, regarding how the additional requirements for the jurisdiction are met, especially Queensland Government priorities.

These steps constitute seven separate processes for consideration of this Bachelor of Education in Early Childhood, and this is for Stage 1 accreditation, which means the program can accept students and that the first cohort through will be registered without query. However, when the first cohort of students has completed the program, the process for Stage 2 of the program accreditation commences. Exemplar student work, representing each level of APST achievement, is compared with APST statements; focus group interviews are conducted with industry stakeholders, field experience supervisors and students from the graduating cohort. AITSL, QCT and ACECQA require annual reporting and/or end of first graduating cohort review. For this sample case study degree, the minimum requirements are for a four-year equivalent program of study. As for the program design described earlier in this section, the design must address the following criteria:

- Demonstration of opportunities for each level of the APST
- The ACECQA content
- The practicum requirement for a primary program through to Year 6 (since Early Childhood is not a category for the national AITSL program standards)
- The practicum requirement for before school contexts.

As it is a Queensland program, there will also need to be two equivalent courses on each of Behaviour Management, Assessment, Indigenous Education, and Special Needs. Further, an internship is deemed to be desirable. In addition, the program will need to prepare teachers for the Australian Curriculum learning areas, and the suite of cross-curriculum priorities and required general capabilities through to Year 6 (ACARA, 2016), while also addressing the Queensland Curriculum (Queensland Curriculum and Assessment Authority, 2016) requirements. The result is that this program is bound with an intensification of content, and there will be little or no room to structure it in novel ways. So, although AITSL maintains that it does not require programs to all look the same, the amount of stipulated content really forces programs into a particular shape that will inevitably make it comparable to any other accredited program.

The accreditation process outlined here is administratively time-consuming for teacher educators and their departments; time that should be devoted to teaching programs. The daunting nature of the process results in ossification of programs, as institutions are unlikely to embark on much change if they know the following year there will have to be a wholesale review of the program, with possible revisions. The process and the rigidity of allowed structure discourage creative thought in program development. The authors of this review paper argue that the complexity and rigour of accreditation processes have ironically prevented creative revisions from being fully developed in programs, but at the same time have assumed the defacto mantle of being a proxy for assurance of quality. Rather than promoting serious evaluation of the theoretical base or the general effectiveness of ITE programs, this accreditation process is likely to discourage the quest for and achievement of quality teacher education.

The impact of TEMAG

As introduced in Section 2, in 2014 the federal government established TEMAG to lead yet another national investigation into the quality of teacher education. In response to the calls for close examination of the quality of teacher education its brief was to focus on quality assurance of teacher education programs, rigorous selection for entry to teacher education, practical experience structure, research and workforce planning, and the assessment of graduates to ensure classroom readiness. In some respects the brief was an evaluation of the effectiveness of the implementation of the AITSL standards. Its report to government followed consideration of 170 public submissions from the public. A quick scan of the submission shows that the majority are from educational organisations, higher education institutions, educational associations and individuals who were mostly members of the general public or anonymous. TEMAG also considered international comparisons of teacher education approaches and conducted a review

of teacher education research. The report (TEMAG, 2015a) made 38 recommendations to the federal government. The Executive Summary offers that:

The evidence is clear: enhancing the capability of teachers is vital to raising the overall quality of Australia's school system and lifting student outcomes ... It is clear that there is significant public concern over the quality of initial teacher education in Australia.

(TEMAG, 2015, p. viii)

TEMAG argued that despite the complexity and rigour of the accreditation processes in place, teacher education needs an overhaul and that accreditation processes need to be tightened even further. It is not clear what empirical evidence they found to support this view. Given the paucity of available research into the links between teacher education program conduct and design and teacher effectiveness, it must be assumed that the TEMAG conclusions were based simply on the tenor of the comments submitted to them.

TEMAG report findings

The report's main findings (TEMAG, 2014, viii) can be summarised as follows:

- National standards are weakly applied, in that the accreditation process moves too slowly.
- There is a need to lift public confidence in initial teacher education; Australians are not confident that graduates are fit to teach.
- There is evidence of poor practice in a number of programs.
- There is insufficient integration of teacher education providers with schools and systems; the stakeholders have not been working together well.
- There is inadequate application of standards; pre-service programs have not been rigorously assessing students against the standards.
- There is insufficient professional support for beginning teachers, in that not all graduate teachers are well supported and inducted when they start as beginning teachers.
- There are gaps in crucial information, including workforce data; useful information on the effectiveness of teacher education is lacking.

The TEMAG report focused on classroom readiness, which is a new direction for the federal government, but it is a welcome one; identifying and assessing classroom readiness is a laudable goal. Certainly there is a pressing need to raise public confidence in ITE, and there can only be widespread benefit from improving research and workforce data to inform future developments of effective programs. It is reasonable for programs to be obliged to provide clear rationale for their design and approaches to assessment, and requirements for demonstration of the APST. The APST have an important place in the picture of high standard ITE. But until actual research is undertaken into understanding and assuring quality, the APST remain raw competency standards. Additionally, greater efficiency in the accreditation process would help to reduce the rigidity of course structure. Other TEMAG findings will be discussed in this and subsequent sections of the review paper.

It is disappointing that the TEMAG report did not unveil the inadequacy of simply rigorously applying a set of competency standards for the assurance of great and quality teachers and teaching, because to improve education outcomes we must embrace the quest for teacher quality, beyond the assurance of competency.

External motivations for improving teacher quality

TEMAG and the federal government wish for Australia to be at the top of the leader's board for the international standardised tests such as PISA. But performance on an academic achievement test does not necessarily deeply attend to the importance of developing the whole person or the

positive values that underscore a cohesive and productive society. This is a key criticism of the TEMAG report, as it is holistic education that is most likely to support high-quality learning outcomes, including performance on standardised tests. Other countries have adopted different reactions to student achievement results on PISA and similar international testing regimes.

The American story

Many Australian initiatives in education have been adopted from or have been carried out in synchrony with American initiatives. For example, there has been a worldwide trend for the introduction of national high stakes testing through the standards-based education reform ‘No child left behind’, introduced in 2002–03 (United States of America, 2002), and Australia joined in this trend by introducing NAPLAN in 2008. The *Teach for Australia* program (Australian Government, 2015) introduced in 2008 to fast-track high-achieving graduates into teaching, closely resembles *Teach for America* founded in 1989 (Kopp, 1989).

It is not clear why we look to American policies to inform Australian reform in education. Even if we deign to consider the international leagues tables for performance on standardised tests, Australia consistently outperforms American achievements. However, we can certainly learn from American researchers such as Linda Darling-Hammond (2006, 2010). Darling-Hammond is an important education researcher, adviser to the President on matters of educational reform, and a commentator on the state of teacher education in the USA. She has long argued for the importance of teacher education, and firmly asserts that effective teachers are not born, they are made (2006, p. ix). This view has been vital to her in her work context, because there is no universal or even nationally consistent system of requirements for teacher qualification, teacher registration or accreditation of programs in the USA. She has demonstrated, through extensive reports on research by luminaries such as Bransford, Cochran-Smith and Shulman (Darling-Hammond, 2006), that teacher education is a vital ingredient for effective teaching. Her research work following recent graduates, details what a teacher should know and be able to do. The main mission of her body of work has been to advocate for ‘strong universal teacher education’. She argues that this is at its best when it includes mandatory certification (2006, p. 5).

Happily, the Australian teacher education scene has already achieved this. Unlike the USA we have a nationally consistent framework, and long-standing requirements for teacher education and certification of graduates before entering the profession. It’s not perfect, but it is a step in the right direction, except that the process is too intricate and the administration of the submission is quite protracted, and annoyingly does not ensure the quality of graduate teachers.

Darling-Hammond’s work is also informative because it details the role of teacher education specialists and institutions in the development of effective teachers (Darling Hammond, 2006; 2010). This aspect of work in teacher education in Australia is still unfinished business. As in America, in Australia there is persistent debate on the best approach for teacher education, the best balance between engagement in higher education programs on campus and school-based programs, and Darling-Hammond’s body of work has made an important contribution to our understanding of the key role of teacher educators in the development of effective teachers.

The Finland story

Finland’s achievements in education are internationally envied, and not simply for its PISA results. Non-Finnish teachers are often openly jealous of the high esteem in which teachers are held in the Finnish communities (Hammerness & Klette, 2015). Teachers in Finland are competitively selected and are highly educated, with a minimum of a master degree in education and a well-developed understanding of themselves as research-led practitioners. The capstone assessment for a pre-service primary teacher is a research thesis regarding pedagogy or curriculum. Some of these requirements were standards introduced following poor achievement by Finnish students in early PISA testing. Research-based teacher action is a key feature of the educational system, which has rewarded Finland with PISA results of a position near or atop

the PISA rankings since 2001, although Finnish educators are quick to say that the scores are not the central goal. In Finland, teachers, as highly-respected teacher researchers, are trusted for planning and assessment. The teacher educators are also highly regarded and required to be teacher educator academics, with a doctorate in the field. A key feature of the Finnish system is the autonomy of teachers.

In Finland, teachers are largely free from external requirements such as inspection, standardised testing and government control... Teachers in Finland are autonomous professionals, respected for making a difference to young people's lives.

(Pasi Sahlberg in an interview by Crouch, 2015, online)

Clearly Finland's teacher education approach functions in a significantly different way from the directions being taken in America, and to a large extent, in Australia. Finland's system was noted as being a standard bearer by the 2015 TEMAG report on teacher education. Finland educators focus on general positive life outcomes for students. We believe that the essence of the difference for Finland's teachers is in the expectation of quality beyond the meeting of minimum standards. Lanas and Kelchtermans (2015) reflect on their experience of Finland's teacher education in their paper entitled 'This has more to do with who I am than with my skills'. Apparently, Finland has put a premium on the teacher quality elements, which pull the teaching competencies into focus. And the 'purposeful' characteristic that attaches to great teachers has been leveraged and has enabled the system to reflect a climate of trust to grow. And the teachers and the system impressed the TEMAG members who visited Finland during their national review period.

The England story

The picture in England in the United Kingdom (UK) is different yet again. There are several pathways into teaching in the UK; the Postgraduate Certificate in Education, or Bachelor of Education, or employment-based pathways, including the Graduate Teacher Program (GTP), Registered Teacher Programs (RTPs), and School Centred Initial Teacher Training. The employment-based pathways have been publically rejected as being suitable for entry to teaching for prospective international applicants for teaching positions in other countries. For example, the province of Ontario, Canada rejects them as being 'unsuitable' (Ontario College of Teachers, 2016), as does New Zealand (Educational Council, New Zealand, 2016). These employment-based programs take an 'on-the-job' approach. Entrants to the profession are employed first and then developed through partnering with experienced teachers, who are not specifically prepared as teacher educators, typically over a period of an academic year.

England has embraced high-stakes standardised testing, and, significantly, has reduced the professional preparation time for teachers. This is the opposite policy to that operating in Finland, enabling direct entry to schools following a first degree or recognised experience (e.g. defence service experience). It has eliminated the concept of a research-led profession and has removed the requirement for specialised teacher educators to be involved in the preparation of teachers. Teacher preparation in England is entitled 'teacher training', which highlights the basic premise driving teacher preparation there, that effective and quality teaching emerges from the amassing of a set of trainable skills (United Kingdom Department of Education, 2016). In effect, the experience in England reflects a damaging international trend to discount teacher education as a luxury – nice to have, but considered not really necessary – and in some quarters, even argued as being irrelevant (Kumashiro, 2010; Milner, 2010). The authors of this review believe that the approach in England, which removes the expectation and requirement that teachers should develop as knowledgeable educational professionals, can be expected to have disastrous consequences for the teaching profession in that country.

The need for targeted research into quality teaching

The argument being put forward here is that there are limitations on what can be achieved by regulation, applied in isolation from other initiatives. In Finland, where raising the status of teaching to levels that are the envy of teacher and teacher education professionals worldwide has been achieved by virtue of many policy initiatives, teacher preparation has been described as a

... process of shaping and re-shaping of student teacher-selves in response to the surrounding implicit norms.

(Lanas & Kelchtermans, 2015, p. 22)

That is, Finland affirms that teacher education is responsible for awakening the sense of teacher identity in pre-service teachers, and for developing their critical reflection on their role and their learning and teaching in such a way that they are able to appropriately respond to the diverse contexts they will find themselves in, as teachers.

Contemporary research into quality teacher education

Section 2 of this review paper analysed the state of research in education and this section will examine the state of research into teacher education, with a strong orientation towards seeking insights into what contributes to the development of quality teachers. Darling-Hammond has confronted the question of how teacher education can address improving the quality of teaching and she dismisses some favourite myths that have currency in many countries.

One of the most damaging myths prevailing in American education is the notion that good teachers are born and not made ... A companion to this myth is the idea that good teacher education programs are virtually nonexistent and perhaps even impossible to construct ... that teaching is mostly telling others what you know and therefore requires little more than subject matter knowledge, that people learn to teach primarily from (more or less unguided) experience, or that education schools can offer little more than half baked 'theories' that are unnecessary and perhaps even an impediment in learning the practical requirements of teaching. Thus there is little reason to require much in the way of teacher preparation...

(Darling-Hammond, 2006, p. ix)

What does Australian research into teacher education tell us about the kind of impacts it has on teacher quality? Well, this is where there is a glaring gap. The *Top of the Class* report identified a serious lack of evidence on the effectiveness of approaches to teacher education, citing:

... there is simply not a sufficiently rich body of research evidence ... there is not even agreement on what quality in teacher education means.

(House of Representatives Standing Committee on Education and Vocational Training, 2007, p.5)

Eight years later, the TEMAG report again identified that research into teacher education, in Australia and internationally, was not found to be particularly instructive:

Research commissioned by the Advisory Group highlighted the paucity of information about the performance of teacher education programs in this country. As a result, research requested for this report to benchmark Australian programs against high-performing international programs known to impact positively on student outcomes was problematic... Research undertaken through Australian Government grant programs, such as those offered by the Office for Learning and Teaching, has to date provided little evidence about the effectiveness of initial teacher education.

(TEMAG, 2014, p. 46)

This review paper has previously noted how little research into teacher education has been funded following these repeated findings by government bodies of inquiry as to the urgency of the need. The urgency of the research message for teacher education and teacher educators is definitive: there is insufficient of it and frequently it does not address the key needs.

Researching links between campus-based and school-based learning

Ken Zeichner is a prominent researcher in education, and a highly regarded teacher educator at the University of Wisconsin-Madison. He is noted internationally for his pioneering work to redesign the teacher education program at the university and has held leadership positions for teacher education and related research in America, Canada and Australia. In his prolific publications he discusses the complementary nature of campus-based learning and school-based professional experience. At the 1999 American Educational Research Association (AERA) conference Zeichner introduced the new Division K of AERA, establishing a community of researchers in the field of teacher education. In his AERA presidential address, Zeichner (1999) traced the recent history of teacher education research and the growth to 1999, classifying the preceding 22 years work in the field, internationally, into five categories:

- Survey research
- Case studies of teacher education programs
- Conceptual and historical research
- Studies of learning to teach
- Examinations of the nature and impact of teacher education activities including self-study research.

While Zeichner noted the rise in research endeavour around teacher education, and hence the desirability for the new community of research practice in Division K, his review of the history of research to 1999 is remarkably similar to that profiled by Loudén for Australian research in the field. The research body is small-scale self-research and action research. Even the survey research in the field of teacher education was small-scale, and was focused predominantly on the reflections of beginning and experienced teachers and principals on the perceived relevance of their teacher education programs to their teaching demands (Zeichner, 1999). The fundamental weakness of much of this research, exactly as with teacher research as analysed in Section 2, was that the variability of teaching contexts, learners and teaching areas restricts the generalisability of the findings.

Furthermore, principals are not able to make fair comparisons between teacher education programs and their effectiveness because there are many different programs and pathways into teaching and they are likely to have access to a sample size of as little as one when considering the relative effectiveness of teacher education preparation for a beginner teachers on their staff. Case studies are also limited in that they describe the impact of small-scale action in what is necessarily a unique context. Conceptual and historical research lacks the demonstrable and direct connection to practical implementation for contemporary teacher education. Studies of learning to teach tend to examine the development from beginner teachers through to experienced professionals, with less attention paid to the impact of pre-service teacher education.

The final category includes action research approaches, auto-ethnographies and other small-scale projects. The result is that teacher education research internationally (and nationally, as we have previously noted), is dominated by a plethora of small-scale investigations, where the findings cannot be effectively tracked back to the impact of the pre-service teacher education experience.

Rewriting the teacher education research questions

The seat of the problem with research into teacher education is that the research questions are not focused. Teacher education researchers should consider questions such as, ‘What impact does a strong professional identity make on the capacity of a teacher to take leadership of learning design for their classes?’ Then we should consider how do we best develop a strong professional identity, what are its features, what experiences are most generative? We should target specific APST or constellations of them, and explore and compare the effectiveness of approaches to developing competency. The projects would need to be large-scale and multiple site. The authors of this review believe that until we work together as a field of researchers to identify the key questions and to collaborate on large-scale research, the state of teacher education research and its ability to inform the design and practice of teacher education will remain as it is for at least another decade. Even Finnish research provides little insight into effective teacher education. Kansanen (2003) provides an overview of teacher education research in Finland and notes that it has tended to cluster into specialisations; that is, teacher education research for secondary education; elementary education; early childhood education. The approach in Finland is to develop teachers as reflective practitioners, to be their own classroom researchers, which tends to bolster the quantum of research at the small-scale and non-generalisable end of the research spectrum.

Field experience in ITE

Recent work by Zeichner and Bier (2010) provides a good place to start researching – field experience. They examined the parameters that constrain and enable effective teacher education through a consideration of the affordances of field experience, termed clinical experience, in Zeichner’s writing. Zeichner’s body of work focuses on contexts in the USA, which is variable from coast to coast in relation to the education systems and requirements of teacher registration for employment as a teacher.

The ISIFE project

In 2009, the Queensland University of Technology (QUT) funded a large research team to investigate a key matter for the ITE program (Bahr, Adie & Crosswell, 2010). The project, *Improving success in field experience* (ISIFE), responded to a call from the university executive, in line with its strategic objective to raise the profile and student success in Work Integrated Learning, across the university. The research team, led by the first-named author of this review, investigated the university’s ITE program with a view to better managing the following areas:

- Increasing consistency in field experiences for students
- Enabling greater connections to be made between educational theories and the application of this in the classroom (Davie & Berlach, 2010)
- Enhancing the development of shared understanding of expectations and clarity of goals for all stakeholders (Darling-Hammond & Baratz-Snowden, 2005; Feiman-Nemser, 2001)
- Facilitating the development of resources that support the various perspectives of the pre-service teachers, host teachers and university supervisors.

The ISIFE project sought to understand the factors that interfered with pre-service teachers’ success in field experience. The project’s objective was to investigate and profile the weaknesses of students who had been identified as being at risk of failure at some time during their professional experience placements during their degree program.

The project was a mixed method study that used interviews, focus groups and mined archived report data. Researchers audited the reports of these students to see if there were any trends apparent, as QUT was also developing its programs in alignment to the new accreditation requirements.

The ISIFE project investigated the following questions:

- What is it that some students find difficult on field experience?
- How do these pre-service teachers and their supervising teachers manage and negotiate these difficulties?
- What do pre-service teachers, supervising teachers, site coordinators and relevant staff suggest for areas of improvement in the area of field experience?

Researchers interviewed 22 pre-service teachers who had experienced difficulty in field experience in 2010 and, where possible, their school-based supervising teachers ($n = 16$) and school site coordinators ($n = 10$) and eight full sets of interviews were evaluated. We also conducted seven focus groups, which included placement officers, field studies course coordinators (Early Years, Graduate Diploma – Primary and Secondary), and university liaison academics. All archival study reports from 2006 to 2009 were audited and all those for students marked at risk of failure ($n = 197$ reports) were selected for further analysis. Between 2006 and 2009 there were approximately 14,000 completed professional experience placements, with only 197 identified as having been at risk of failure. This finding alone was most encouraging for the university.

The data showed that those students who had struggled at field experience did indeed share the same weaknesses. These students had great difficulty in their capacity to ‘design and implement learning experiences that value diversity’. The mean on this capability, for these at-risk students, was 1.35 (on a 3-point scale, with 1 = not developing adequately, 2 = developing adequately, and 3 = well developed). The interview data showed us that these students were unable to effectively consider learners as individuals. There was a tendency to teach to an idealised classroom, which did not fully recognise the actual needs of the learners they were teaching. Theoretical teaching, and quite possibly the learning as well, did not translate into practice for these students. They showed that they were not able to connect the on-campus learning with the real classrooms in schools. They were effectively disconnected.

Connecting on-campus teacher education with real-world school contexts

Zeichner (2010) writes about the commonly-existing disconnect between the campus and school-based parts of teacher education programs, stating that:

The old paradigm of university-based teacher education where academic knowledge is viewed as the authoritative source of knowledge about teaching needs to change to one where there is a nonhierarchical interplay between academic, practitioner, and community expertise.

(Zeichner, 2010, p. 89)

Many teacher educators would be able to testify to the long-standing gulf between campus-based teacher education and the school-based experience of students, which is to some extent unavoidable, given the current arrangement of responsibilities for teacher education.

The school’s responsibilities in a practicum

For example, let us imagine that the reader of this review paper is a senior teacher at a large metropolitan primary school. Pre-service teacher education programs are being offered at three universities within travelling distance of your school, and there may be students from a further few, let’s say two, universities (higher education institutions – HEIs), who are studying for their teacher program online (that is five variants you are dealing with). A pre-service teacher, identified for professional experience at your school, might be in Year 1, 2, 3, or 4 of an Early Childhood or a Primary program (that is now eight variants for each of the HEIs, making 40 altogether). They might be a graduate entry pre-service teacher on their first or second placement or third (that is an additional six variants). They may be seeking an internship for Primary or

Early Childhood (two more variants). That is, considering the conservative estimate of five different higher education institutions, and seven or eight different levels of progress through their programs, you will need to provide 48 different types of experiences to account for the developmental stage of content, pedagogical and curriculum knowledge of each of the ITE students allocated to your school.

Additionally, you will need to be able to contribute to performance evaluation against each of the professional standards relative to the developmental point of each pre-service teacher. To assist supervising teachers, the HEIs will provide guidance materials for each of the variants, and you will be given the contact details of a liaison academic who you most probably will not have previously met, and who will want and need to visit the pre-service teacher to discuss their performance. You will need to write a comprehensive report of their performance in collaboration with this liaison academic. In the back of your mind is an awareness that not every pre-service teacher is ready for the challenges of the classroom, and that you may need to be responsible for someone who struggles. Further, you might be asked to supervise pre-service teachers in pairs, and you might be asked to supervise more than one pre-service teacher at different times in the same school year. All of this at the same time as you are trying your darnedest to meet the learning needs of your students, in what is most likely not a reduced teaching load. And you may be paid a pittance, a token fee, for this professional service.

The training institution's responsibilities

Now let us imagine you are a teacher educator academic at a large metropolitan HEI. Your institution has about 3500 students in five teacher education programs. You are allocated 30 of them to act as their liaison while they are on professional experience placement in schools. The allocation is by geographical area to enable your schools visits, and students are placed according to their access to transport to schools and availability of placements. The biggest number of students you are likely to have at a single school is five, with each of them either in different programs or at different stages of their program. This means you are likely to have seven or eight schools, with 30 different teachers and classrooms to connect with and support during the placements. You are unlikely to know these supervising teachers because there is great mobility between teaching posts in the metropolitan area. Given the nature of student lives, and the fluctuation of availability of places for students, you are likely to have your supervisory allocation confirmed a mere fortnight prior to the placement block. This will not leave you enough time to connect with each school or each supervisor before the placement period, as you will still be conducting classes on campus through to the start of day 1 of the placement.

Note that the complexity of expectations outlined here has taken little account of the pre-service students' capacity in this placement, or how they might respond to their difficulties. Schools have lives and programs too; so whole-school activities can disrupt practicum. Nor does it take into account the disruptions arising from the outside school lives of any party to these arrangements (illness, car-breakdowns, etc). Practicums can quickly unravel.

Schools and HEIs work as best as they can, but more often than not they work without full connection and collaboration in support of the teacher education enterprise. The 'sheep dip' model of professional placement where a pre-service teacher engages in a block experience that feels as if it is at arm's length from their on-campus preparation, does not permit the development of a sense of community belonging, and professional collegiality is rarely experienced.

Practicums that demand less, and provide more

The best way to simplify the multi-factorial relationships in practicums is by trimming down the moving parts. This review paper strongly advises five possible strategies for adoption.

- Let schools partner with HEIs with a sense of exclusivity.
- Let pre-service teachers' professional experience be arranged so that they go back to the same school for several of their professional experience periods.

- Identify and reward lead teachers in schools to connect with specific programs, perhaps with recognition and progress toward higher qualifications.
- Maintain the same liaison academic for a specific school over time.
- Make it possible for these liaison academics to work within their partner school on collaborative research and professional development projects.

None of these are new ideas, and some have a long history at certain institutions. They can fail when teacher educators' mobility means they rotate into other courses. Additionally, as is so often the case in teacher education research, there are no serious evaluations of the effectiveness of such strategies. To implement them requires a change in mindset by an institution, and they require resourcing. Achieving these outcomes is not easy.

Teacher Education Centres of Excellence (TECE)

One example of an ITE program which allows for a more flexible approach to the practicum, is the Improving Teacher Quality National Partnership Program, which has seen the establishment of Teacher Education Centres of Excellence (TECE), in partnership with several large universities around Australia (Department of Education, Training and Employment, 2013).

The centres reflect a significant investment of Commonwealth funding of \$550 million over five years (2009–2013). Initial unpublished and anecdotal reports from gaining principals are that the students are well prepared for teaching and that the connection between the induction to the workforce and the final stages of the initial teacher education program are very effective. This partnership program was a joint initiative of the Australian Government Department of Education, Employment and Workplace Relations, state governments, public, independent and Catholic schools. These centres provide a framework for collaboration and sharing involving specific schools, with specific HEIs, target teacher education programs, professionally developed school-based teacher mentors with release time to work with the program, and a team of university liaison academics. The pre-service teachers complete their professional experience at schools that are partnered into the centre, and have the opportunity to engage with a range of school activities across the school year. The detail of the partnership varies from context to context and is completely reliant on the agreement struck between the stakeholders.

Pre-service teachers gain excellent ratings, and immediate employment offers, with permanency attached. To date, in Queensland there has been close to 100 per cent employment rate for graduates from a TECE program (Department of Education, Training and Employment, 2013). The gaining principals have been ecstatic with the quality of these graduates. The program has been successful because the schools and HEIs were supported to work extremely closely together. A staff member from each side of the partnership was given release to focus on the project. Mentors were trained and fully conversant with the developmental aspects and other program design components of the degree programs, and the academic staff were connected to the induction processes and information that was provided to the students ahead of their guaranteed employment. It was a win-win situation.

The TECE approach has also enabled the supported development of pre-service teachers who become more than competent, and more than minimally effective. Pre-service teachers, with natural access to a schooling community during their program, gain a much greater insight to their role as a teacher in the TECE model than they could possibly experience in block rounds, especially over several rounds at different schools.

These pre-service teachers come to know the school students, the culture of the school, the goals and challenges of that school community, the collegiate, and so forth. They are not so much visitors, as associates. Professional educators and senior jurisdictional and school staff who have been participants in the TECE program, anecdotally attest to them having witnessed the mind-opening impact these experiences can have on the mindset of the pre-service teachers. They tend to focus more on the learners than on their own performative assessment. They tend to tailor their teaching better to the diversity of students. They have a better understanding of how students engage with concepts; that is, they see their purpose, which builds their sense of vocation, and are rewarded as supported members of the school community, which feeds

the earlier development of a professional identity (Department of Education, Training and Employment, 2013).

This is not the same as employment-based teacher education, because the students remained at the university and did not have more immersion in the schooling contexts than typically would be possible for them in their program. But it was employment linked, with early induction processes and authentic supports for their entry to the profession. This TECE model recognises the unique contributions to the teacher education practicum brought by experienced professional teachers, as well as specialist teacher educators. The teacher education programs align fully with the accreditation requirements. The degree structures comply fully with the requirements for the award of a degree. From working in these centres, participants come to understand that the role of the teacher educator, while initially not fully understood, becomes more manifest and better grasped by all, over time.

But still there is scant literature to explicate this process. This is predominantly because the TECEs are designed to bring together partners from the schooling sector and universities, but only for the duration of each funded project. When the TECE project funding has been completed, the tendency is for TECE academics and key schooling staff to be immediately redeployed, and so the systematic reporting and publishing of each TECE project's successes slip out of reach. The knowledge gained from the projects has not been comprehensively consolidated and shared. The next subsection provides a discussion and an overview of the role of the teacher educator.

Teacher educators

Few studies have examined the role of the teacher educator in teacher education. Decades ago, Lanier and Little (1986) had identified that teacher educators have a significant, yet largely unacknowledged role, commenting that:

... teachers of teachers are systematically overlooked in studies of teacher education.

(Lanier & Little, 1986, p. 528)

Wideen, Mayer-Smith, and Moon (1998) also discussed teacher education as an ecological system, yet entirely missed the role of teacher educator. More recently, there have been a trickle of papers calling for attention to the teacher educator, mostly written by teacher educators themselves (Lunenberg, Korthagen & Swennen, 2007). Lunenberg et al. ran a multicase-study of teacher educators and their models of practice, and they concluded that:

... we have discovered what is almost a blank spot in both the body of knowledge on teacher education and the actual practices of many teacher educators.

(Lunenberg, Korthagen & Swennen, 2007, p. 586)

This research is indicating another blank space in the body of the research literature about teaching, teacher education, and quality teacher development – the role of the teacher educator. Attention was drawn to the *role* of the teacher educator in the publication of a teacher educator themed edition of *Teacher and Teacher Education* in 2005. The editorial opens with a statement that:

We are of the view that the nature of teaching about teaching demands skills, expertise and knowledge that cannot simply be taken for granted. Rather, there is a need for such skills, expertise and knowledge to be carefully examined, articulated and communicated so that the significance of the role of the teacher educator might be more appropriately highlighted and understood within the profession.

(Korthagen, Loughran & Lunenberg, 2005, p. 107)

Although it makes sense that by virtue of their expertise in the field, teacher educators should be the key writers in public commentary and policy development in teacher education, but, as with the commentary on teachers and schools, this is not the case. The field of teacher education is not notable for its detailed analysis of the practices or issues associated with it, and little of it written by teacher educator practitioners.

Zeichner writes of his own experience of becoming a teacher educator (2005), however, of particular interest was his discussion of courses he conducted aimed specifically at the preparation of teacher educators. Zeichner reflects that as a 'cooperating teacher' in schools in 1970 he was charged with the responsibility of mentoring teacher interns, and that he was given no special preparation for the role. Even more disconcerting is his report that he was allocated the role of mentor while he was a beginner teacher himself, at what he termed a 'difficult school', characterised by behaviour problems and a high incidence of crime. He developed his own understanding of his role as a teacher, synchronised with his developing role as a teacher educator.

He goes on to say that his introduction to his university role as a teacher educator was very similar to his experience as a cooperating teacher. That is, there was no specific preparation for him, or even advice. He designed a course for research higher degree colleagues to engage in, to better address the shortfalls he had discovered. The courses in this program entailed topics on supervision and mentoring, pre-service and teacher education policy, teacher professional development, action research and reflective practice in teacher education. These topics remain current, and in his contemporary work he prepares new teacher educators to study their own practice. The lack of specific preparation for school-based teacher educators, and campus-based ones is still the norm in Australia. So what does a teacher educator need to know and be able to do?

What do teacher educators need to know and be able to do?

Firstly, they must be teachers. It needs to be accepted practice that all teacher educators will need all the competencies (APST at the lead stage) and meet all the expectations of quality teachers. Teacher educators need to have several fields of deep disciplinary content knowledge. One of these is knowledge of what it is like to teach children; that is, what it is like to teach the learners who teacher educators teach their learners about! It is vital teacher educators have that palpably vivid image that embraces one's senses, regarding the working life of a teacher, from having been successful with sustained performance as a teacher, in classrooms and in schools.

Teacher educators additionally need to have a working understanding of higher education. There are peculiarities to higher education that are more than just an extra tweak to general teaching capabilities. The learners are different with different motivations from those in schools; the platforms for learning, the resources for learning, and the responsibility to the learners are all framed differently. Deep experience as a teacher in curriculum teaching areas is essential, as from that comes the understanding of the necessary variability of T/PCK. This understanding will help support skill in developing pre-service teachers' own T/PCK. Teacher educators need to know and be able to design assessment for learning that provides pre-service teachers with models for their own teaching while testing them against the professional standards. They need to be able to create learning environments that promote the establishment of a professional identity for pre-service teachers. This is just the beginning. They also need to know and be able to do all of this as a practitioner, a theorist, and as an agile evaluator.

Everyone who participates in this field has heard people say that teacher educators must be failed teachers. This could not be further from the truth. A failed teacher could not succeed as a teacher educator. Pre-service teachers are critical consumers of their higher education. There is a 'take no prisoners' view of teacher educator performance by the pre-service teachers and by HIEs. If a teacher educator doesn't ring true as knowledgeable, capable, caring and professional, and if they are not completely competent, organised, clear in communication with strong rationales for every action, then pre-service teachers will not accept them (HIEs provide their students with easy access to evaluations and avenues of complaint).

Alongside all of this is the requirement for teacher educators to be contributing researchers, administrators, and well published in their areas of specialisation. Teacher educators in Australia will typically need a doctorate in a field aligned to their role as a teacher educator, extensive experience and sustained leadership in schools, as an entry requirement. Such a person would be considered early career, and would be supported in their development as a teacher educator and higher education educator through award programs (such as a Graduate Certificate in Higher Education), professional development, formal mentoring schemes and direct supervision. They would be formally evaluated by peers, and by their students every semester for every course and class taught, and they will need to maintain at least a 3.5 on a 5-point scale (5 being exceptional) for effective teaching ratings to meet the requirements of their three-year probation at their university post. In essence, these arrangements for supporting entry-level teacher educators is fine. But the missing piece is the arrangement for a capacity to be occasionally embedded in actual schools. The suggested changes to the role of the teacher educators' relationship with core schools in practicums would address some of this lack. Regardless, teacher educators have expertise and responsibility in the teacher educator role, but they also need recency of practice, or at least recent and preferably on-going engagement with a real school.

The message to be shouted is that teacher education is its own complex profession. It is complementary to the contributions to teacher education made in authentic schooling contexts by school-based professionals. It is not the same, and it is not dispensable. Teacher educators should be at the table for every policy decision made with respect to teacher education, and sadly this is not always the case.

Mentoring beginning teachers – professional development

Reflecting on a major professional development project that she managed in 2015, this review author led the tender, but was one of a cast of many who contributed to the development of materials and workshops (Education Queensland, 2015). The project was/is called *Mentoring Beginning Teachers* and was aimed at preparing two experienced teachers at every state school in Queensland to be mentors for beginning teachers. Around 700 teachers were engaged in the two-day workshops conducted all over Queensland. The research team shared out the workshops across the team, and the author ended up presenting four two-day packages to groups of around 30 experienced teachers at a time. These teachers were effectively being inducted to the very first baby steps of teacher education. In their preparation to mentor a new peer they learned how to observe a colleague's practice, how to give feedback, how to evaluate a colleague's performance, and how to bring the beginner alongside the experienced professionals in all aspects of their work. These experienced teachers found this hard, different, and a new way of thinking.

It was also hard to develop the program. Collaborating with teachers, regional leaders, regulatory authority representatives, learning designers and teacher educators was complicated. So the development of effective teacher educator development programs will be similarly complex, but it is a necessary next step for the goal of a complete and high quality education system. As yet, however, we have not advocated for and convinced the education sector, the general community, or the policymakers of the importance of teacher educators, and we have not worked to understand and develop programs that would effectively develop teacher educators. As identified by Zeichner in 2005, there is a glaring hole in our systematic development of teacher educators. We currently take a sink or swim approach and this needs to change.

Concluding comments

In Section 4 the focus has been on describing the features of teacher education that have been assumed to assure quality. The discussion outlined the pervasive and persistent argument that has been extant for a competency approach for assurance of teacher quality. Further, it reported how this competency premise or paradigm has relied upon rigorous application of nationally consistent programs and professional standards for accreditation and teacher registration. The

accreditation actions emerge from a common presumption that with rigour comes assurance of quality.

In this section, the additional requirements for teacher education programs recommended by the TEMAG report were also reviewed. A key new requirement post-TEMAG has been for pre-service teachers to demonstrate impactful teaching before they will be acceptable for graduation. That is, pre-service teachers must be able to show their value-added contribution to student achievement in assessment outcomes. However, throughout Section 4, the competency framework model has been exposed as being insufficient to assure quality. Its efficacy is contested on the grounds that the attributes of the quality teacher (explored earlier in Section 3) are not effectively included in the APST suite.

In the latter part of this section there has been a further call for research to provide a stronger body of evidence to support more detailed modelling and development of effective and targeted bespoke teacher education. For example, areas that might be conducive to researching could include those programs where there is mutual benefit designed into collaborative enterprise between school-based and campus-based educators. This call led the discussion to a consideration of the teacher educator, their role, and the development of professional relationships with school based educators.

In Section 5 the discussion culminates with reflection on the perspectives people have on the features of quality teaching, with further explanation as to why these would sit as an extension to the standards framework, in accordance with the ecological model for teaching quality introduced in Section 3.

Building the quality teacher

Earlier sections of this review paper have presented a myriad of perspectives, gleaned from the relevant research literature and personal and political sources, on the life and work of teachers and teacher educators. The text has considered the purposes of, and ways in which, the AITSL framework was developed, and there has been a focus on its limitations as a way of ensuring quality teaching. Section 3 addressed some of the conundrums of being a teacher, and of deciding what a teacher should know and be able to do. Section 4 analysed the factors operating in the teacher education systems that contribute to the development of effective teachers, and identified some factors that mitigate against the achievement of quality. This discussion has led to Section 5, which is devoted to a fuller discussion of the notion of teacher quality, with particular attention to how a quality teacher might be built.

Quality teaching in every classroom

Every learner deserves a quality teacher. However, there has been very little attention given in the contemporary literature – neither internationally nor nationally – to providing a definition and explication of quality teaching or of the attributes of a quality teacher. The body of literature in the field of teacher development and teacher education is tacit in explication of the notion of quality in teaching. There is an assumption that quality teaching as a concept is clear.

Ingvarson and Rowe, prominent Australian researchers in the field of education and teaching, reviewed teacher education research and methodology, (Ingvarson & Rowe, 2007), and identified teacher quality as a concept that can be objectively evaluated, but is not well understood. They attempted to provide an approach for unpacking teacher quality, proposing that teacher quality is perhaps best targeted by considering what a teacher must know and be able to do. This advice promotes a simplistic and instrumentalist view of teacher quality and underpins the competency strategy adopted in Section 2 of this review paper. The Ingvarson and Rowe work was a response to the call for evidence-based action for the betterment of teacher quality. But it did not go quite far enough to capture the essences of quality teaching.

Usefully though, Ingvarson and Rowe argued against the use of proxy measures of quality, such as teacher qualifications, experience and student academic outcomes. In taking this stance, they focused attention on what actually happens in the work of teaching. They remind us of the importance of broad and deep knowledge of the teacher, and on the teacher's pedagogical capability. Quality teaching cannot exist where teacher knowledge is weak, flawed or patchy, and neither can it exist where a teacher does not have appropriate pedagogical skills. The view

of Ingvarson and Rowe lends itself to the standards framework that has been systematically adopted in Australia.

There are others who also ascribe to the view that teacher quality is 'an ambiguous and complex term' (Zammit, Sinclair, Cole, Singh, Costley, Brown a'Court, & Rushton, 2007, p. 1). Despite this view of the term, Zammit et al. provide a review of contemporary research on quality Australian schools, and on the nature of quality teaching. They highlighted that the research literature typically considers teacher quality as comprising multifaceted factors that are interdependent. On the basis of their literature review, Zammit et al. contended that teaching quality is a product of contextual factors of schools, professional practices, and attributes and capabilities of teachers and school leaders. This view is reflected in Figure 2.2, as the model for a conceptual framework for the components of the ecosystem underpinning the emergence of teachers of quality proposed in Section 2.

So there is a shaky foundation, a lack of firm understanding of what teaching quality might be. Yet teacher education is bound to provide quality teachers for every classroom, for every learner. It is pertinent here to reflect on the warnings from Pirsig (1974) in the opening discussion of this paper. That is, that attempts to deconstruct quality into component elements cannot lead to an understanding of the nature of quality, since quality is holistic, a catalytic product of the united whole. But, there are forces that can pull elements together into a cohesive whole. Perhaps the essence of quality is in the examination of these personal forces; these attributes that act to bring together competencies in a holistic way. So, instead of trying to tease apart the elements, perhaps we are better served to identify what holds them together. Then it may be possible to actively strengthen these forces. It may be possible to provide learning experiences through initial teacher education, professional induction and development that serve to promote these attributes. Hence it may actually be possible to more certainly build quality teachers, such that there can be quality teaching for every learner.

Promoting the attributes of quality teachers

There are some intuitive personal characteristics for quality teachers. First, the quality teacher has a sense of personal vocation for teaching. They are committed to ensuring high-quality learning outcomes and have high expectations for their learners. They are brought to teaching to make a difference for individuals and for society. Teaching is not their job; it is their profession and provides them with important rewards for self-worth. They are loyal to their students, their students' families and the community, and are genuinely committed to providing enhanced learning experience in their teaching endeavours. This commitment is recognised by their students and colleagues and is such that it informs their engagement in all aspects of their teacher work.

Next, the quality teacher brings purpose to their teaching. That is, they understand and can enact targeted behaviours as teachers that move them beyond the learning event at hand, to the holistic purposes of the education process. This purpose is greater than simply wishing for students to learn required concepts. The purposeful teacher aligns all their activity to ensure students reach their highest possible potential. The competent teacher, by contrast, is focused on the learning at hand.

Further, the quality teacher has a strong identity as a professional educator. This sense of professional identity supports their pursuit of excellence, through their own professional development and their careful consideration of learner needs and effective employment of responsive practice. They strive to be expert, with a detailed and principled knowledge of all aspects of their practice, and are able to adapt their practice to meet changing contexts, priorities and students. Their practice is nuanced by these deep understandings which they are able to describe in detail as they plan and reflect on teaching and learning.

These attributes are not invisible or surprising. Even children as young as six years are able to articulate attributes for teacher quality, as discovered by Witty (1947). Witty had asked 12,000 Grade 2 children to describe the characteristics and/or attributes of 'the teacher who has helped me the most'. The children cited the following things, reported in rank order.

1. *Cooperative, democratic attitude*
2. *Kindliness and consideration for the individual*
3. *Patience*
4. *Wide interests*
5. *Personal appearance and pleasing manner*
6. *Fairness and impartiality*
7. *Sense of humour*
8. *Good disposition and consistent behaviour*
9. *Interest in pupils' problems*
10. *Flexibility*
11. *Use of recognition and praise*
12. *Unusual proficiency in teaching a particular subject.*

(Witty, 1947, p. 662)

It's hard not to agree with the children; these attributes would be ones they understand and can identify. Attribute number 12 on the list is probably the only one that directly maps onto the Professional Standards for Teachers. Other attributes such as flexibility, fairness and impartiality, might only be lightly captured in the APST (APST 7: Meet Professional ethics and responsibilities, AITSL, 2016).

Recent research attests to the impact of a teacher's personal characteristics on student achievement and on students' sense of self-efficacy (Brookfield & Preskill, 2012; Herman & Marlowe, 2005). These attributes depend on the capability of the teacher to establish a positive working relationship with their students. However, the bulk of research attention is paid to short-term learning achievement, which avoids consideration of the more significant longer term outcomes of quality teaching. This effectively avoids consideration of desirable long-term outcomes, such as improved self-esteem, motivation, and engagement with learning. This is an important gap in the body of research. A focus on short-term achievement time-locks the impact of the teacher to the learning at hand. However, it is more important to ensure the development of life-long learners (Heath, 2015).

Quality teachers, have an enduring impact. Their ability to make the student think and feel in productive ways about their learning, and themselves as learners, provides a transferable orientation to learning and thinking that has an indelible impact, beyond the moment. This is the essence of quality. And this is the teaching every learner can respond to and deserves.

As identified by Strong (2011), personal attributes can 'rely on subjective impressions', but this review paper affirms that such attributes are demonstrable and therefore subject to evaluative comment. Consider a quick review of the research on the impact of a few of these attributes, on learners, their orientation to learning, their conceptions of themselves as learners, and their learning achievements.

Cooperative, democratic attitude

The advantages of having the goal of a democratic classroom climate are well-researched. Brookfield and Preskill (2012) are researchers who have recently investigated the democratic classroom. They reviewed the impact of discussion on the attitude and orientation to learning of learners. The conduct of democratic discussion allowed students to articulate and test their ideas, expose their misconceptions in a supportive and collaborative context. A teacher with a cooperative and democratic attitude can provide a context for students to safely explore their understandings. Safety, acceptance and openness are necessary conditions for effective learning, and for the development of a learner's self-efficacy. A cooperative and democratic attitude is hard to evaluate without subjectivity, but a teacher with these attributes will demonstrate capability through the breadth of the pedagogical repertoire, so this may not be an entirely invisible attribute.

Kindliness and consideration for the individual

Herman and Marlowe (2005) explain how demonstrations of kindness, and a kind approach to the teaching role have a profound effect on a student's orientation to learn. They discuss the impact of kindness on the attitude and behaviours of troubled and difficult youth, and provide an excellent example of a personal attribute that is not standards-based, neither is it effectively examined as a competency. But it can be measured as having enormous reach with respect to its impact on learners.

Patience

Kutnik and Jules (1993), and Cuddapah and Stanford (2015), have each considered the role of teacher patience in teaching. Kutnik and Jules reported on a large-scale survey of 1633 students, aged 7 to 17, with respect to their perceptions of a good teacher in the Caribbean republic of Trinidad and Tobago. In their work, patience was an important attribute identified as desirable for a good teacher. Cuddapah and Stanford (2015) researched the changing understandings and attitudes of 13 career change participants who were entering teaching. The findings were that the participants recognised the importance of teacher patience. This attribute was one of several that had not been considered directly by participants as important prior to their professional experience. Clearly a teacher who is perceived as impatient with students and their learning, will undermine students' opportunity to experience positive orientation to the learning task, and will impact negatively on their capacity to achieve in both the short and longer term.

Fairness and impartiality

Students highly value the quality of fairness and impartiality in their teachers. A teacher who is perceived to have favourites, to act with bias in any aspect of their teaching loses all credibility with students. The central issue is ensuring that the perception of fairness is maintained. Teachers need to behave in ways that overtly demonstrate they are working to eliminate bias. Students need to see this expressly attended to by the teacher. It is not sufficient to simply work without bias in an invisible way. There has been substantive research into the role that the perception of teacher fairness and impartiality plays in student engagement (Robinson, Watson & Adams, 2015). In a nutshell, students who feel that their teacher behaves with partiality and bias tend to become disengaged from their learning. This is particularly true of students at early adolescence when they are developing a strong sense of what is fair and unfair (Bahr, 2007; 2010). Teachers who do not demonstrate they are attending carefully to impartiality should not be judged effective, for they run a great risk of undermining the chance for developing positive working relationships with their students.

Sense of humour

Research with colleagues (Tait, Lampert, Bahr & Bennett, 2015) into the effectiveness of university teachers, has shown that humour plays an important part in establishing a congenial, non-threatening and entertaining classroom climate, one that positively supports learning and learner engagement. McGilchrist (2015) has shown that this attribute, the ability to use humour in teaching, has similar relevance to school teaching. Of course, humour is an excellent example of an attribute that is very subjectively evaluated. However, it is easy to see whether people are engaging together in the enjoyment of humour, so while it may rely on subjectivities to evaluate the quality of the humour, it would be quite objectively apparent whether humour was being used effectively with learners, by considering and observing their response and engagement in the learning.

Walker's quality attributes

Robert Walker almost replicated Witty's 1947 findings in 2008, although Walker was researching the perspectives of his own undergraduate and graduate students ($n > 1,000$), using an

end-of-course survey from courses at seven institutions in America over a period of 15 years. Walker's list of behavioural attributes of a quality teacher was that they did the following:

1. *Came to class prepared*
2. *Maintained positive attitudes about teaching and about students*
3. *Held high expectations for all students*
4. *Showed creativity in teaching the class*
5. *Treated and graded students fairly*
6. *Displayed a personal, approachable touch with students*
7. *Cultivated a sense of belonging in the classroom*
8. *Dealt with student problems compassionately*
9. *Had a sense of humour and did not take everything seriously*
10. *Respected students and did not deliberately embarrass them*
11. *Were forgiving and did not hold grudges*
12. *Admitted mistakes*

(Walker, 2008, p. 64)

These behaviours are objectively observable, and are conceptually and practically more than competencies, although some are directly connected and relevant to specific APST. For example, 'coming to class prepared' aligns to Standard 3.2, where a teacher is required to 'Plan lesson sequences using knowledge of student learning, content and effective teaching strategies.' Grading students fairly is also relevant to the standards (APST 5.1 in Figure 2.3). Strong has argued that characteristics and attributes such as being caring and liking children combine with the objective standards-based professional capabilities required to meet the definition of a 'good teacher' (2011, p. 14).

Strong's assertion here is that quality teaching depends upon possessions of a suite of demonstrable competencies, combined with an array of observable productive behaviours that are brought together cohesively and catalysed by specific personal attributes. There is no doubt that competencies can be targeted and developed. This is also true of behaviours. Productive teacherly behaviours can be understood and practised. There is increasing evidence available that attributes (such as kindness, cooperativeness, and fairness) can also be actively developed through demonstration, modelling, and the impact of an influential teacher. For example, Kohler-Evans and Barnes (2015) have developed a four-stage model for the development, of affective skills for school students. Cramp and Lamond (2015) have also developed strategies for assisting teachers to design pedagogy that ensures the development of meaningful relationships with learners, based on kindness. Kindness, along with many of the personal attributes discussed, is learned vicariously. A pre-service teacher who is shown how to demonstrate kindness, how to respectfully employ humour, how to show enthusiasm, will be better able to enhance their teaching and move from competency to quality. This is where effective teacher education sits, and where teacher educators play an important role to develop and influence.

Reflecting on Figure 2.4, it can be seen that there are forces that act to draw together the component elements to the peak of the image. It is at the peak of the cone that quality teaching is achieved, supported by contextual elements, personal histories, teacher competencies and productive behaviours. The forces that draw teachers to the peak of the cone are the personal attributes of the teacher, and it is these attributes that move a competent teacher to a quality status, where there is an enduring positive influence on the learner. Teacher education can act to identify, encourage and develop these attributes. Although there is a need for research into the most potent personal attributes for positive influence, there is no need to delay action to encourage key attribution development in teacher education programs.

Zeichner's paradigms of teacher education

It should be noted that this focus on personal attribute development is not a new concept. In 1983 Zeichner penned a paper summarising four paradigms of teacher education belief and assumptions with regard to the nature of schooling and the roles and place of teachers. He saw these paradigms as manifesting in the focus and design of teacher education programs.

These four paradigms were: behaviouristic, personalistic, traditional craft, and inquiry oriented. The behaviouristic paradigm is described as one where observable skills of teaching predominate. Zeichner actually calls these competencies and quips that this paradigm rests on 'fairly tenuous links between teacher competencies and pupil learning' (1983, p. 4).

The personalistic paradigm is one that tailors personal development to the needs of the individual pre-service teacher and is aimed at promoting psychological maturity to drive teacher behaviour. The traditional craft paradigm is basically an apprenticeship model, where the learner understands effective practice from working with a master on the job. The focus for this approach is the acquisition of technical skills. The fourth paradigm, inquiry oriented, combines technical and behavioural approaches with a more reflective practitioner approach, such that the teacher develops skills of inquiry regarding the efficacy of their own practice.

In essence, in 1983 Zeichner outlined four paradigms for teacher education that could conceivably be combined to form a new paradigm; one that takes the best of the competency and behavioural development elements, along with the best and most potent of the personalistic developmental approaches, and rounded together with an inquiry orientation to practice and personal development. In this way, we can bring maturity to teacher education, recognising the complexity of the field and resisting the temptation to resort to simplistic competency development approaches. These paradigms also provide a stronger platform for collaborations and partnership between all stakeholders associated with the pre-service teacher's development.

Personal attributes – recommendations for ITS

There are four key personal attributes that are recurrent in the outlined research. They are:

- **Developing the attribute of high expectations.** There are copious examples of learners who achieve despite systematic and circumstantial disadvantage and setbacks. Teacher education programs should examine these to assist pre-service teachers better understand how high expectations liberate learners. Programs should seek authentic experiences where pre-service teachers can positively interact with highly engaged students in otherwise disadvantaged circumstances.
- **Developing the attributes of kindness and care.** Teacher education programs can demonstrate the impact of kindly approaches to relationship building. Kindness first is an attribute that can be taught through reinforcement and encouragement of kind behaviour. Kindness can be modelled, and the ethical examination of kindness can be explored through scenario-based problems.
- **Developing a positive attitude to teaching.** Teacher education programs can provide authentic opportunities for pre-service teachers to engage in non-formal settings with children and adolescents, to enable them to better understand the energy and excitements of youth aside from the pressures of the teaching/learning endeavour. For example: stakeholder collaboration that enables pre-service teacher support to co-curricular activities, sport, camps and excursions/tours.
- **Developing a sense of humour.** Teacher education can provide modelling and discuss the benefits of humour in teaching and learning. An important reciprocal effect is the impact that the use of humour has on the resilience of the teacher who uses it effectively in their teaching. So it has a quality impact on the learners as well as a well as having a positive impact on the teacher (Crosswell, Bahr, Pendergast, & Newhouse-Maiden, 2010).

There needs to be much more research into this area, but it would seem that even development of these four attributes could be woven easily into teacher education programs. This review paper recommends they be adopted as KPIs, as learning outcomes, for teacher educators and their students.

Concluding comments

This review paper has examined quality teaching and teacher education from a number of angles. First, the discussion considered contextual influences on the state of teacher education, including governance and policy frameworks that apply and have applied in recent times, both federally and jurisdictionally. Next, the paper explored the rise of dissatisfaction with the quality of Australian teachers and the key threads of arguments that have been posed and sustained to discredit the quality of the teaching profession. Important in this has been the call for a stronger evidence base to inform policy. It was discussed how this climate of dissatisfaction with the quality of teachers has given rise to robust and nationally consistent accreditation requirements, guidelines and processes, based upon a competency framework. In Section 2 these accreditation requirements were explained in some detail to illustrate how teacher education programs that have been designed to effectively develop the capability of graduates to demonstrate competencies, termed professional standards, have been envisaged as a guarantee of quality teaching for learners. The notion that teacher quality is found solely through the application of a professional standards competency framework was briefly contested at this point, and the argument posed by this paper that there needs to be more, was foregrounded. The paper also examined the complexity of teachers' work in contemporary schooling. The connecting thread throughout the review paper has been the examination of the nature of quality teaching, the elements that comprise and underscore this quality, and the importance and place of the role of teacher education and teacher educators to develop quality teachers for every classroom.

As with quality in all things, teacher quality has been argued as being more than the sum of its parts, and hence the competency-based and often atomised professional standards approach to the evaluation of teachers' performance and capacity is proposed as being insufficient to ensure quality. Quality is argued to be born of these competencies as they come together holistically through the acquisition and employment of productive behaviours, and most importantly through the catalytic impact of specific personal attributes. Personal attributes, such as having high expectations of all learners, kindness, fairness, humour, and a general positive attitude to teaching are described as the forces that bring about quality.

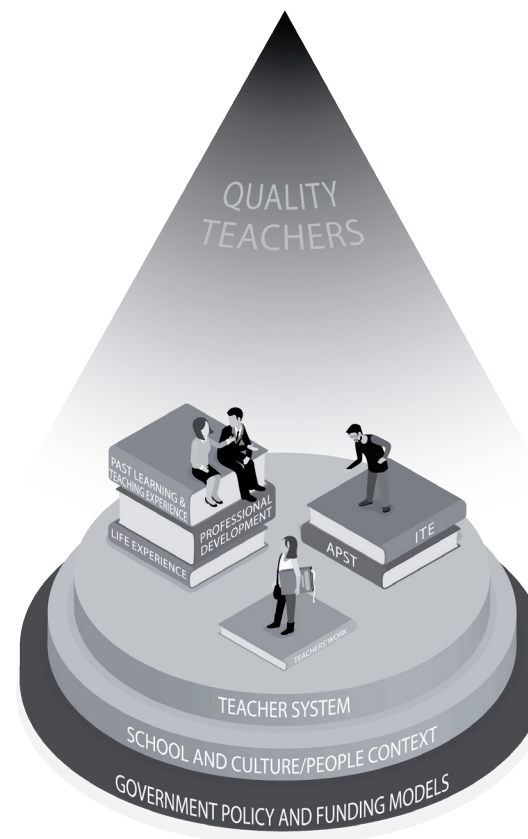
Finally, this paper has argued that although research on the topic of influential personal attributes needs further attention, these personal attributes can and should be considered in the quest for quality teaching. The final equation for quality is:

$$\text{Quality} = (\text{competencies} + \text{productive behaviours}) \times \text{personal attributes}$$

While there has been interest in these attributional dimensions of the teacher historically and recently, the focus of action has been on selection of entrants to teaching. This, we argue, overlooks the role and capacity of teacher education. The initial teacher education process and pedagogies can, and should, develop pre-service teachers in their personal attributes and values, at the same time as they hone their competencies for teaching. We argue that this intertwining is important to ensure teachers have the bespoke approach, the specialised productive behaviours, and skill to influence learners positively, beyond the next achievement test.

With this new approach, it may well be that the goal for education may shift slightly from being so focused on achievement standards for learners, and that instead it will bring into focus the fuller development of the learner. There may be a greater call for productive partnerships between all stakeholders, to ensure positive and authentic contexts for teacher education are created and sustained. It may well be that this shift could create a more rewarding profession, and stronger partnerships. In all this, we may perhaps even step a little closer to ensuring quality teachers and teaching for every Australian learner.

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Section 1 introduces the key concept of 'quality' and explores the notion of quality in teaching. Section 2 reviews the context of education in Australia with discussion of the organisation and management of the educational systems, with particular attention to the different roles Federal and State/Territory governments play. Section 3 considers teaching as a profession by examining the nature of teachers' work, working contexts and demands, and the variations or regularities that exist. The section reviews the characteristics of quality teachers versus those that are demonstrably competent. Section 4 discusses teacher education and the development of quality teachers and teaching with comment on program accreditation processes and the capacity for differentiating between basic teacher competence and quality. The role of the teacher educator is argued as being key to the development of truly quality teachers. Section 5 examines what it takes to be a quality teacher, what the personal attributes might be and how these extend from the competency framework for effective teaching. We challenge the notion that important personal quality attributes are appropriately accounted for in the current selection regimes for entry to teacher education and in the processes of accreditation. Additionally, the authors argue, it is the role of initial teacher education to target and develop these quality attributes.

Nan Bahr is Professor of Education and Dean (Learning & Teaching) of the Arts, Education and Law Group, Griffith University. She has a background as a classroom teacher, and has led, taught, researched, published and mentored in the field of teacher education for more than 20 years. She is extensively published with national and international impact on topics related to teacher education, responsive education for adolescents, and higher education. Nan maintains close school partnerships, leading significant projects for mentoring beginning teachers, and adolescent engagement.

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