SUBMISSION TO THE SENATE ENQUIRY - Teaching and learning Maximizing our Investment in Australian Schools.

What is Quality Teacher Practice and Can we get it?

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Introduction

In the debate about investment in the Australian education system, there is one issue that appears to remain largely undebated: What are we educating people for? The Melbourne Declaration (2008) provides a description of what this should be, particularly through Goal 2, which states: "*All young Australians become successful learners, confident and creative individuals, and active and informed citizens*." (p. 8) Goal 2 refers to the types of skills and capabilities which the Australian education system should provide. This extends beyond the narrowly cast concepts of basic literacy and the functional mathematics that is often associated with the 'back to basics' rhetoric and includes a range of higher order cognitive capabilities that globally are often referred to as 21st Century skills (Trilling and Fadel, 2009). For example a recent report from the OECD (2012) defines numeracy as :

> the ability to access, use, interpret and communicate mathematical information and ideas, in order to engage in and manage the mathematical demands of a range of situations in adult life.

It goes on to say that:

> numerate behaviour involves managing a situation or solving a problem in a real context, by responding to mathematical content/ information/ ideas represented in multiple ways.

Thus, both nationally and internationally, the basic knowledge and know-how of mathematics is necessary but insufficient for an individual to be considered numerate. Sufficiency comes with a much wider repertoire of skills for learning and application including the problem solving skills referred to in Goal 2.

These 21st Century skills are the learning outcomes to which most national education systems now aspire and which are increasingly informing the standards by which Australia is compared and judged. It is our view that, at the level of public policy discourse at least, these outcomes are currently 'crowded out' by the focus having fallen almost exclusively on the roles of narrowly conceived concepts of numeracy and literacy. This narrowing of the focus is also reflected in the constitution of what is

seen as important to measure. So called 'basic skills', need to be approached in conjunction with the higher order skills referred to above as '21st Century skills' – they are not readily separable and, if separated, research suggests overall literacy and learning capability will be affected negatively (Newmann, 1996, Hattie, 2012). Research with which we have been involved shows that Australia's decline in literacy and numeracy is at least in part associated with a failure to attend to the development of these critical thinking, creativity and problem solving skills. These higher order skills are fundamental to being able to use language and number in a sophisticated way in the real world. Recognition of this is present to a degree in current testing regimes, including NAPLAN, in that some questions do require this sophistication to be answered correctly. Unfortunately it is against these questions that Australian students generally perform poorly.

Despite this myopia with regard to the desired outcomes of schooling, there appears to be growing agreement that the key driver of educational outcomes is the quality of a teachers' practice exercised in a safe and supportive environment (Darling-Hammond, 1997, Hattie, 2009, Lovat et al., 2011a, NSWCDE, 2012b). The USA National Board for Professional Teaching Standards captured the centrality of the more subtle features of quality teaching in the following:

> Accomplished teachers… treat students equitably. …They... adjust their practice based on observation and knowledge of their students' interests, abilities, skills, knowledge, family circumstances and peer relationships…. they foster students' self- esteem, motivation, character, civic responsibility and their respect for individual, cultural, religious and racial differences. (NBPTS, 1999: 3-4)

However, if we cannot agree what schooling is for, there can be no basis for agreement about the desired qualities of teachers. Without agreement on the fundamental purpose of schooling, there is an allied lack of clarity about what quality practice actually looks and feels like in the classroom. If it is decided that 'quality of practice' in Australia refers only to those aspects of the Melbourne Declaration that relate to narrowly conceived numeracy and literacy outcomes, and not the higher order or 21st Century skills component of Goal 2, then it is possible (if not desirable) that the current debate regarding teacher quality will yield incremental improvements in the international competitiveness of Australia's education system – no paradigm changes are required. If, on the other hand, it is recognised that the ability to support the development of 21st Century skills is important and that the way we conceive of 'teacher quality of practice' (TQP) must include the teacher's ability to support the development of these skills, then we need to adopt a quite different way of thinking about Australia's investment in education.

Measurement

In improving TQP, the first hurdle that needs to be overcome is the ability to reliably and efficiently measure the relationship between teacher practice and student learning outcomes. There are surprisingly few means to systematically measure this relationship. Australia has taken an international lead in this area with three States

making significant contributions over the past two decades, beginning with the Queensland School Reform Longitudinal Study (QSRLS) (Qld, 1999). This was followed by the development of empirically validated approaches to measuring quality of practice in both South Australia and NSW. These are the South Australian Teaching for Effective Learning Framework (South Australia, 2010, South Australia, 2011) and the NSW Quality Teaching Framework (QT) (NSW, 2000).

Whilst there is some compatibility in the two approaches, each has a different scope. The key difference appears to be that QT focuses on aspects of practice primarily associated with academic achievement whereas TfEL focuses on this as well as a wider set of social and lifelong learning outcomes of schooling.

The authors of this paper have been involved in a variety of ways with these developments and continue to be involved in both Australian and international efforts to further develop and refine measures for teaching practices associated with the development of 21st Century skills, including in the area of pedagogical content knowledge relevant to mathematics and science curriculum. While this work is ongoing, considerable progress has been made.

The Current State of Teaching Practice

Notwithstanding the wide variety of teaching contexts in which modern teachers work, the new and expanding range of pre-packaged programs available, ongoing debates about class sizes, performance pay, professional development, quality of pre-service education, etc., what this research shows is that the key driver of TQP comes down to the deeply held assumptions of teachers about knowledge and themselves as learners, and the learning of others.

There are many implications emerging from these research outcomes that need to be considered not only in relation to the types of teachers who are attracted, selected and retained within the profession, but also considerations about the effectiveness of different pedagogical approaches to teaching and learning. The broad grouping of pedagogies that can be associated with 'constructivist approaches', for example, are very sensitive to the disposition of the teacher. Teachers with a more script-based disposition are ill-equipped to utilise these types of pedagogy simply because they have difficulty recognising alternative worldviews in others.

In terms of achieving TQP consistent with the development of 21st Century skills, the greatest concern is the proportion in which these dispositions are held. Only a small minority of teachers display a 'dynamic' disposition. Furthermore, these dispositions appear resilient to a wide range of influences. We believe it is the persistence of these assumptions and beliefs, and the relative proportions in which they are held by the teaching workforce that explains why so many change interventions in the education system have had a limited effect on TQP. It also is the reason why doing more of the same will likely meet with a similar outcome. This finding then has profound implications for where, as a nation, Australia needs to invest to improve education.

With this in mind, claims that constructivist informed pedagogies have been ineffective might appear valid when viewed in terms of NAPLAN numeracy and literacy scores. However, to the extent that they have been implemented at all (and we see relatively little evidence that they have despite many decades of attempted reform in that direction), it is likely they have been used in name only as the majority of teachers would be unable to use them in the way they were originally conceived. Such approaches simply make no sense to many or are accommodated to fit their way of understanding their role which is, in turn, based on their current beliefs and assumptions (lost likely a script). Indeed, if the profile of the teaching workforce is as we suspect and as indicated by the sample we have observed, pursuing these approaches runs the risk of creating a pedagogical vacuum where explicit teaching is removed but not replaced with the desired dynamic pedagogy which is responsive to learners' needs, and aims to engage learners and build their lifelong learning capacity.

There are obvious questions about how the teaching population came to be composed in this way. The OECD TALIS report (Vieluf et al., 2012) noted that new teachers do not act as innovators – their practice looks like the practice of the

teachers around them. To the extent that the 'script' orientation is the norm it will be the model to which most new teachers adjust. This has significant implications for the first year of teaching and extended professional experience placements - a theme we develop later. There also appear to be other mechanisms that collectively conspire to keep current teaching practice stuck.

If someone aspires to be a teacher because schooling, as it is currently normatively practiced, worked for them, then their inclination will be to teach as they were taught – to replicate the experience for others. It is important to emphasise here that, from the perspective of a worldview towards the 'script' end of the continuum, there is only really one mode of learning and little recognition that others might see/experience learning differently. This has the effect of reproducing the existing norm and supporting a teaching culture related to this view.

On the other hand, a small minority might be attracted to teaching because they were inspired by a highly engaging teacher and are motivated to change the norm. To an extent, the motivation for this latter group is similar in that they want to replicate their learning experience for others, however, because their disposition to learning is one of dynamism and giving agency to students to find their own way, their pedagogical approach is very different. For these people, their professional and career experience is very different. This is reflected in reports from them that they feel they "don't fit" the prevailing culture. Many of these teachers are quite conscious that they are in a minority and fundamentally disagree with the pedagogical environment created through the dominant worldview. As one interviewee who presented a 'Dynamic' profile observed:

> *"…the teaching culture, I think, has a strong unspoken culture that, you know, "This is the way we do it, and this is good teaching and good practice." And I think I had a problem with good teaching and good practice, because some of that good is … you know, value-based."*

Implications for policy making

Based on this research, we broadly agree with contemporary discussions about the importance of teacher selection, recruitment and retention. The need to review structures and practices associated with teacher pre-service education is also valid, as is the need to review approaches to professional development for teachers.

In a heated political and policy environment, however, a significant danger exists. Any changes to policy must deal with the underlying cause of the situation and not the symptoms. Changes to university entrance requirements, for example, that ignore the role of teacher dispositions might satisfy short-term political needs for action but will do nothing about the prevalent culture across the workforce. Changes need to be designed on the basis of what drives TQP and more specifically TQP that supports the development of 21st Century skills, and all that these entail.

Solutions

The role of Pre-service education

International research in teacher education points to the centrality of four elements in the process, named here as: *input*, *throughput* and *output* and, in a separate but allied sense, *practicum* (Edwards et al., 2002, OECD, 2010, Shulman, 1987, Darling-Hammond, 2012). Australian research, reviews and reports have contributed significantly to identifying these same essential elements, however named (ACDE, 1998, ACDE, 2003, Senate, 1998, HoR, 2007, Caldwell, 2012, NSWCDE, 2012a).

Input: There is currently considerable debate about the role of university entrance scores, aptitude tests, interviews, etc. in the selection of teachers into the profession. For each of these different screening techniques, there are advocates and detractors. Again, what appears to be missing in this debate is discussion about the nature and characteristics of the teacher that are actually desired. Giving consideration to the characteristics of effective teaching practice and the drivers of this practice, it is important to recognise that the screening needs to be aligned to the characteristic that is sought. Interviews can be powerful tools if they ask the right questions; equally, they can be useless if they ask the wrong ones. University entrance scores tell us something about the student, though arguably not much about their disposition towards teaching and learning. Entrance scores might simply tell us that they themselves have been very good at following the scripts their teachers asked them to follow rather than being good at thinking and learning for themselves. Role-plays, teaching observations and psychometric testing all reveal different elements of the picture, however, none provide the overall picture if done alone. Again, for any of these selection processes to be of value, it must be clear what they are selecting for. The research we have described in the previous section provides a picture of the characteristics we could be looking for and offers clues about the types of methods that might be used for this selection. This is important for while dispositional approaches to teacher selection have been used elsewhere, particularly in the US, there was little or no empirical research used to derive them and, as a consequence little agreement about what they should be.

Several of the authors of this submission are also involved in the evaluation of the TeachSA program, which has been designed to address a shortfall in skilled maths and science teachers in South Australia. This program is quite innovative in that involves all of the above selection techniques in assessing the suitability of teachers to the role. Whilst the evaluation is in its early stages, what this program clearly indicates is the importance of using multiple methods – psychometric testing, interviews, role-plays and teaching practice to select teachers. Applicants that have excelled in some of the selection criteria, have failed miserably against others. This doesn't mean they lack intelligence, the appropriate motivation or even reasonable people skills – but it probably does mean they are not suitable candidates for teaching.

The TeachSA selection materials were developed to mitigate the consequences of a high-risk activity – identification of career change maths and science professionals to become teachers. Anecdotally the quality of the resultant teacher workforce through self-selection into post-graduate courses by maths and science professionals

is very unreliable; it is often heard that 'they like the subject more than they like kids' and that the students 'eat them alive'. Equally, when a career change professional makes the change for the 'right reasons' then the outcomes for them as teaching professionals seem to be far greater. To understand why, market research was undertaken with a range of maths and science career change professionals who now teach to identify what their motivators to change to a teaching career were, as well as their job satisfaction having made the change. The clear pattern to emerge from this limited sample was that those who changed career due to dissatisfaction in their previous career were dissatisfied with the career of teaching (for a variety of reasons, including the students, the conditions and the requirements of the role), while those who changed because they had always considered teaching as a career choice but hadn't had the life opportunities to allow them to pursue it previously, or those had a desire to make a difference were satisfied with their new role. This then informed the marketing campaign to attract maths and science career change professionals to undertake a post-graduate pre-service teaching qualification. The messages were clearly about having the 'right disposition' to teach.

To test for these dispositions a range of capabilities were identified by outstanding maths and science teachers (as identified by their principals and peers), university professionals and school leaders that encapsulated the qualities that they believed were critical to being a 'good teacher'.

Once the capabilities had been identified with descriptors of their competencies, activities were designed to test for these capabilities. These activities were of three types:

- Individual activities (behaviourally based interview questions, mini-lesson presented to student and teacher assessors)
- Group activities (role play, activity based on interactions with other candidates)
- A written activity.

Each activity included more than one capability and all were scored using rubrics to allow for reliability of score comparison.

Throughput: concerns the nature, scope and strength of the teacher education program itself. Most research has shown that this, together with practicum, is the most crucial of the elements (Jörg et al., 2007, Jones, 2009, Lovat et al., 2011b), and potentially capable of overturning negative effects arising from 'input' deficit. Like so many debates in this area, the most fundamental question: **What should the role of pre-service education be**? seems rarely to be asked and again is really dependent on a common understanding of the TQP we seek.

If we assume that the single largest cohort in pre-service teacher education are young candidates, straight from school, and we accept that a key driver of TQP is their disposition towards the role of teaching and learning, then the aim of the program should be to support the neophyte teacher reflecting on and critically evaluating their existing assumptions about themselves as learners and the learning of others. While there is an important role for existing theory and contemporary research to inform this reflection and evaluation, there is little value in this unless

the educator also has the opportunity to understand the implications of these constructs and concepts for their own practice.

It is in this area that most existing educators appear to be critical of their pre-service educational experience. While the (as reported typically highly didactic) curriculum and pedagogy of their university experience might have encouraged them to think about education from a range of different perspectives, they often only experience one and it is not lost on many of them that this approach is somewhat incongruent with what is being advocated. As one teacher observed:

> *"… when I went to University [they] had a very strong way of, "This is what education is, this is what teaching is, this is what learning is." And then you were put into a practical situation and expected to show some of those learnings… One of the things I clearly remember is contextualised learning when I was going through Uni, and how it was expressed. And I clearly remembered thinking, "This is not authentic. This is not contextual."*

Whilst our data collection on TQP has not extended to the higher education sector, the logical conclusion we draw from the interview data we have regarding perceptions of pre-service teacher education is that the teaching dispositions of university lecturers strongly mirror those of the teaching workforce. If this assertion is proven to be true, then another barrier to the achievement of Goal 2 needs to be addressed. University programs themselves need to be re-cast to adopt pedagogy aligned with contemporary research but also geared towards building 21st Century skills in the teaching profession. This is something that, from the evidence, it seems most University programs fail to achieve.

Whilst the universities as a group consistently produce evidence of the quality and effectiveness of their programs, these are strongly at odds with findings from more than 120 interviews that we have recently conducted with a wide range of teachers – those in early, mid and late career stages. The views expressed by the group, all of whom experienced their higher education in different times over many years and in different institutions, are remarkably consistent. By and large, they are highly critical of the pre-service teacher education experience, particularly with respect to preparing teachers for the real world of the classroom. The consistency alone suggests strong systemic influences acting to constrain universities' willingness or capacity to respond to what are, beyond the post-course evaluations, widely recognised and accepted problems with pre-service teacher education.

A caution that needs to be inserted here is that we are using evidence from what we have referred to above as an inherently pedagogically conservative sample (i.e. current teachers) working in inherently conservative education systems. Hence, granted these limitations, one wonders what impact even the most dynamic pre-service environment could have even were it to exist. The point simply underlines that attempts at serious reform must address all the relevant sectors, teacher education, the extant profession and the education systems themselves, rather than, as has happened too often to no effect, laid the blame for failure on one of these sectors, invariably in ways that ignore prevailing contexts. Relevant prevailing

contexts at present include the personnel needs of teaching systems, the changing perceptions and role of teacher education in higher education dynamics and a highly ambitious higher education growth plan impelled by the federal government.

Any addressing of pre-service teacher education must be done in the wider context of the above: first, the overall personnel needs of education systems, especially in an era that sees tight legal constraints on who can be put in front of a class on a day to day basis; second, changing perceptions of the utility of a teaching degree, especially in an era that sees Australian teachers as attractive employment prospects for overseas education systems and outside education altogether; and, third, the Government's present higher education growth plan, wherein teacher education's current popularity is seen to constitute such a central plank. In other words, overly simple and uninformed formulas often proposed, including simply raising ATARs and/or constraining intake in other ways could possibly create a range of other debilitating problems for systems and especially for the government's bold plan to lift higher education participation rates (cf. NSWCDE, 2012). At the same time, these simple and uninformed formulas are not designed to do the essential job of discerning and discriminating in order to find the kinds of candidates most likely to be disposed to be effective teachers of 21st Century skills.

Beyond these points, the question of what pre-service teacher education should do goes much further than this when one considers the needs of more specialist subject areas. Research has underlined the central importance of a balanced academic program, comprising the most updated research insights into learning, high quality discipline content knowledge and high quality pedagogical training (including practicum, see below). The conjunction of these three streams is referred to by Shulman (1987) as 'pedagogical content knowledge' (PCK), the peculiar knowledge that underpins quality teaching (ACDE, 1998, 2003).

PCK forms the critical link between content discipline knowledge and pedagogy (Ball and Bass, 2000, Gess-Newsome and Lederman, 2001). For example, Panizzon (2011) noted that particularly in the science and mathematics education:

> …while questioning is an important generic pedagogical strategy, using questions in physics that encourage deeper conceptual understanding requires an open style approach with more than one possible answer. However, teachers who lack the necessary content knowledge are unlikely to put themselves in such a situation so tend to rely on closed questions, which allow them to direct student thinking and stay within the confines of their own knowledge.

It is a teacher's PCK that provides for the use of multiple representations of concepts (e.g., analogies, metaphors, models, experiences) and multiple entry points into an idea so that each of the students in every classroom have a way into a concept that is meaningful to them. PCK transforms discipline content knowledge into a school subject that is constructed in such a way so as to meet the needs of the diversity of students (Panizzon, 2011, Shulman, 1986). Thus with pedagogical content knowledge, a teacher can be strategic about their students' learning, so as to create

learning opportunities that will be emotionally and intellectually engaging, while anticipating, for example, a slowing of pace where time is needed to explore a new and complex idea.

PCK appears to be a particularly critical need within Primary education where we frequently observed very inflexible, highly constrained and didactic approaches to teaching subjects such as mathematics and science as teachers with little subject expertise stayed within their own comfort zone. Indeed, taking PCK seriously suggests that the current design of Primary and Secondary schooling needs a radical rethink. The more we prioritize the need to be able to understand and apply concepts ahead of mere memorization, the more critical it becomes that they gain early mastery of the big ideas or key concepts and ways of thinking associated with different learning areas. By contrast the challenge for secondary education as it is currently constituted is to support teachers to support learners to apply these concepts in rich, multi dimensional real world contexts that do not lend themselves to subject specific approaches.

Output: concerns readiness for and mentoring into the early stages of a teaching career. Ramsey (2000) noted the unusually high expectations of a beginning teacher to be 'ready' (in a way unmatched across professions) and the allied lack of mentoring/ support by the teaching system. Indeed, many of the teachers we have interviewed related how the panic of facing a live classroom for the first time saw them retreat from what they had heard at university to simply teaching as they had been taught at school in order to survive. The need for more site level support featured prominently.

> **Case 137:** Well, I guess with practicums at uni, I'd gone from a Reception class, from a Year 7 class, I was put in with a Year 4/5 class not having that experience anyway. Yeah, just resource wise and that sort of thing, I felt quite empty. And, yeah, really not having ... and I guess, from uni, not really even having the support structures in place to then ... it's sort of like you graduate and, vroom, you're off to figure it out for yourself.
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> **Case 13**: But isn't it with the medical profession too that they get a lot more mentoring than we do, and they're eased into it a little bit easier. While with teaching you're just flung out there.
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> **Case 40**: When I first did go out we were very much in our own classroom, and the principal I had was also learning, so it was a pretty different situation…
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> **Case 106:** I have a, had a very strong belief at university that it … albeit, it was giving me the credentials, if you like, that I needed to be a teacher, but I really didn't learn much about how children learn until I was actually out involved in it myself. I mean at university you have them telling you how children learn and stuff like that, but when you actually come out and teach, it's entirely different to what they're … depending on the demographic of the area as well, where I was teaching. So, when I first came out I just assumed

> that it would be easy and that learning was what children wanted to do and obviously starting to do that in my first year, that wasn't the case at all. I mean, you … the complexities of the classroom were so broad. It completely changed my thinking with how to, how to best try and meet the needs of all children. Because it was very easy just to categorise and go, okay, this is kids and we're learning together and … but then understanding that a child might be in Year 5 but they're operating at a reception level was, it was a huge learning curve for me to go, how do I cater for this child?

Given that this approach to teaching also appears to be the norm in most schools, early career teachers rapidly default to habits of practice that are far from those needed to support higher order learning outcomes, even if these have been attended to in some way in their pre-service teacher education. Research has shown that, where quality throughput is followed by high levels of mentoring and support for neophyte teachers, teacher retention and satisfaction rise significantly and the effects of quality teaching are more assured (OECD, 2005, Yost, 2006, Brown, 2008, Blase, 2009, Cherubini, 2009). Of course, a challenge here is finding sufficiently and appropriately skilled mentors with the appropriate dispositions to address the task. The recruitment and re-skilling program, with which we are involved, included an extensive coaching and mentoring component exactly for this reason. The early data suggests that whilst overall the coaches and mentors involved with the program were perceived to have been highly skilled teachers, they appeared reticent (as an overall group) to provide critical feedback to new teachers by which they could modify their practice – something the new teachers craved. Instead, the coaches tended to focus on positive support and non-evaluative encouragement.

Practicum: One aspect of the pre-service experience that drew the greatest criticism was in relation to the lack of an adequate experiential learning component in the pre-service process. This is critical because it enables the teacher to experiment with practices they have likely not witnessed during their own schooling (as they are most likely to have had teachers who have accommodated to the norm). It also presents an oft-observed tendency for new teachers to fall into a survival mode in their early career. The following are typical examples of statements – often emphatically delivered - by some of our interviewees.

> **Case 122**: Question: So, did you find that that tertiary degree prepared you adequately for …? Interviewee: No. No, not in the least, not in the least. I mean it gave me some good ideas of the current theories of the time, but there really wasn't a lot of focus on just managing a classroom. That was what I found when I first landed my first job, that I just had no idea, no idea. Got in front of the classroom and had what I thought was a fantastic plan. Looking back on it now, I'm not so sure it was a fantastic plan. But just the day-to-day management of things and I'm really not sure how I got through the start, you know?

Suitable, challenging and enriching practicums have been found to be at the heart of effective throughput and satisfactory output (Ramsey, 2000, NIQTSL, 2005, HoR, 2007). This is especially the case when the goals attached to the practicum are cast

widely to include not only the technical skills of teaching but the role that effective teaching plays in overall student wellbeing (Osterman, 2010, Narvaez, 2010, Lovat et al., 2011b). There were two particularly interesting exceptions to this overall negative sentiment. The first was in response to one University's recent experiment (since discontinued) in the use of a program with an extended practicum:

> **Case 121:** In my final year, we did an eight-week prac and people came back from that and they were universal in their praise ...of how practical it had been and how realistic it had been because it was for two months.

The other was with regard to people who had entered teaching after a career outside the school system and who came with a wider experience base.

> **Case 103**: I think it [pre-service education] supported my role as a practitioner in the classroom in terms of the theoretical side. I think I bring a lot of life experiences as well as you know you've done the academic side. You gel the two together to bring it to the classroom.

This suggests that wider life experience provides these student teachers with the ability to integrate theory into practice in a way that schooling does not. This of course underlines the very problem we seek to highlight in this submission. Current schooling fails to support the development of skills of critical thinking and a capacity by the learner to move comfortably between ideas and the real world, unpacking their appropriateness to and implications for practice. This ability is at the heart of 21st Century skills.

So, given that the limitations of current pre-service teacher education are reasonably well understood, and putting aside the inertia that is often associated with change and the fact that University based approaches to teaching have not changed in many generations, are there other impediments that prevent or limit the likelihood of universities responding to these issues? There is some evidence to suggest that structural impediments to the use of extended practicums by Australian universities are the reason for their general absence in Australian pre-service teacher education.

Another quote from the recent NSW Council of Deans of Education submission to the NSW Government Discussion Paper, Great Teaching, Inspired Learning, might suffice to make the point about structural impediments:

> More words have been directed to the issue of professional experience (practicum) than any other single feature of teacher education. In recent times, among others, the Australian Institute for Teaching and School Leadership (AITSL) (NIQTSL, 2005) and (NSWCDE, 2012b) have engaged in work related to quality of access and effect of the professional experience component of teacher education. Both reports have extolled the essential nature of teacher education practicum but also identified significant problems related to logistics of supply and demand, as well as resourcing. From the time the original relative funding model (RFM), that coincided with the Dawkins' reforms, failed to take account of practicum costs (a long term ACDE claim that HoR 2007 finally accepted), teacher education as a whole

> came to be seen by vice-chancellors as a badly underfunded area of their new operations (leading in turn to much of the cutting, pruning and closing down mentioned above). While the RFM had taken account of the far more modest practicum costs in nursing and social work, and even the performance costs associated with art and drama, the costs associated with the national award (AIRC, 1990) concerning the payment of teachers for supervising practicum appeared to have evaded the attention of the RFM drafters and, later, vice-chancellors who unwittingly agreed to take all responsibility for such costs from what had, in the days of the teachers' colleges, been funded through internal distribution within education systems. Teacher education faculties have been paying for this systemic error ever since, caught between schools and teachers rightly wanting their pay and vice-chancellors and university financial systems that expect them to cover all of their costs within the slice of their budget, premised somehow on RFM or later equivalent models. There was a short period of reprieve when the Federal Budget of 2004 provided an injection of $129m directed to university practicum costs. This 'IPCTE' fund provided much relief for three years but has progressively been reduced and has now been 'rolled in' to new DEEWR formulaic funding, with an injunction that an amount of $758 should be allocated by universities to the professional experience component. The net effect would seem nonetheless to amount to funding per capita for this component of about one-third of the special funding provided between 2005 and 2007. Practicum remains a problem for teacher education faculties trying to manage their operations within university systems and, in the present environment of reduced funding (vis a vis 2005-2007), upward pressure on 'days' to be spent in practicum and the threat of substantial increases in the level of payment to be made under the national award, NSWCDE simply needs to make the point that the issue must be fully comprehended as we look together for better ways for practicum to work for professional readiness.
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> Even granted the issue above, Deans and Heads of School remain firmly committed to the practicum component and to increasing its quantity and quality wherever possible.

It has to be concluded that wherever possible is not very often.

Professional Development

In South Australia a deliberate approach to leading strategic pedagogic reform has commenced in response to the research findings. It has identified the need to develop teacher capacity to design engaging, intellectually challenging learning experiences for students, but recognises the inherent tension of maintaining teacher dependency if the traditional professional development approaches are employed. Providing teachers with the 'scripts', such as lesson plans, units of work, tight syllabus would continue to feed the dominance of knowledge as inert information to

be transmitted by the teacher. These deeply held assumptions must be surfaced and disrupted if teachers are to understand the knowledge construction and meaning making process central to 21C learning. Teachers must 'unlearn' an old identity of the transmitter to one of far more sophisticated designer of learning experiences. This is a substantial systemic challenge.

To this end resource suites are being created which scaffold teachers working in professional learning communities to design learning aligned to the Australian Curriculum and attain the aspirations of the Melbourne Declaration Goals of successful learners. The resources provide ways of reconceptualising the curriculum from being disconnected lists of content to demonstrating the progression of concepts and understandings that develop in complexity over time in the life of learners. They also model pedagogic enquiry methods that teachers can use with students to draw out their existing understandings – essentially to provide learners with experiences that they then make sense of, as opposed to instructing students and then having them 'practice'. This positions students as the ones doing the thinking – not as passive receptacles of teachers' information.

The corresponding leadership work, in its early stages, supports principals recognising and challenging resilient limiting assumptions that feature in the schools teaching and learning programs. The prime methodology is to de-privatise teacher practice for shared analysis and designing of learning against a scaffold called "Learning Design". This focuses teachers thinking and design to be intentional about the bigger goals of the students' learning and the processes for engagement that ensure all students are intellectually stretched.

Conclusions

The education system is incredibly complex and, as with all complex systems, it is necessary to look at the underlying drivers of the patterns of behaviour and decision making that shape the system's outcomes.

Our concern in this submission is that Australia finds itself at a crossroads where never before have more resources been applied and yet, at the same time, resulted in a continuing trend of worsening performance (relative to other countries). Debates about solutions to this situation seem to be either focused on dealing with symptoms of the problem or informed by ideological arguments lacking in a comprehensive evidence base.

What our work indicates, is that a key driver of current educational outcomes is the spectrum of beliefs the teaching workforce hold in relation to teaching and learning, and the proportions in which these beliefs are held by the teaching workforce. Recognition of this situation brings the role of recruitment, selection, retention and preparation of teachers into focus as key areas for improvement. The projects we are now engaged in, show that simplistic measures, such as changes to ATAR scores, will have little impact as they ignore the fundamental issues in relation to the role of

teacher beliefs. It is clear that there are also other structural factors at play that serve to (unconsciously) maintain these patterns of belief.

Above all, however, is the most fundamental issue of what actually constitutes high quality teaching practice. If we continue to debate what we should do without a clear understanding and consensus on what we want to achieve (and an associated understanding of what that involves) the status quo will continue. The challenges are systemic in nature, and will require systemic change if they are to be addressed. Investments in the education system that are made ignoring these factors are unlikely to reap any significant dividends for the job satisfaction of teachers, the learning outcomes of students, or the economic prosperity of the nation. This inquiry has the potential to bring clarity to these issues and provide a basis for an evidence-based approach to policy development. We trust this submission plays an effective role in helping to inform this process.

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