

# **The connections and disconnections between teacher education policy and research: Reframing evidence**

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*Abstract:* This paper examines the connections and disconnections between teacher education policy and research, and considers future opportunities for teacher education research by rethinking the notion of evidence as it is conceptualised in current policy debates. Historically, teacher education was positioned as a training issue, then as a learning issue, and more recently it has been framed as a policy problem requiring significant reform. By analysing the influences on current teacher education policy, this paper argues that we are now in a second stage of the ‘teacher education as a policy problem’ phase. Teacher education is now a politically constructed and ideological policy problem and the associated discourses of evidence are contributing to disconnections between teacher education research and policy. Drawing on findings from a large-scale longitudinal study investigating the effectiveness of teacher education that highlighted the complex and non-linear processes of learning teaching and doing teaching, I argue that singular thinking about the purpose of teacher education as only preparing teachers must be problematised. I suggest that calls for evidence, that are so prevalent in current policy, must be interrogated and reframed if compelling and convincing connections between teacher education policy and research are to be realised.

**Keywords:** (4-8) teacher education policy; teacher education research; evidence of teacher education effectiveness; teacher education policy-research connections,

## **Introduction**

This paper examines the connections and disconnections between teacher education<sup>1</sup> policy and research, and argues for rethinking the notion of evidence as it is currently

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<sup>1</sup> In this paper, I use the term ‘teacher education’ to encompass ‘initial teacher education’, ‘pre-service teacher education’ and ‘teacher training’.

used in policy to provide the foundation for a closer connection between teacher education research and policy. Disconnections between teacher education research and policy are evident in many international contexts (see for example, Tatto & Menter, 2019). By way of background, a brief historical overview is provided first to show how teacher education policy has been conceptualised at various points in time, first as training and then as professional learning. However, in the past decade, teacher education has been subjected to intense scrutiny as part of the policy spotlight on teacher quality. As a result, teacher education has been framed as a policy problem needing a solution. The solution usually involves close attention to the component parts of teacher education and policies that drive changes in teacher education practice through selective resourcing and accountability mechanisms that privilege a particular conceptualisation of evidence.

In arguing for rethinking what counts as evidence, I use Vidovich's (2007) hybridized framework for policy analysis, to discuss contemporary influences on teacher education policy. Drawing primarily on the Australian context but also highlighting resonances with the policy context in England, I suggest that we are now in a phase where teacher education is being positioned as a politically constructed ideological policy problem characterised by global competitiveness and claims about evidence, which in itself is often constructed ideologically (Helgetun & Menter, 2020). I draw on findings from the large scale longitudinal Studying the Effectiveness of Teacher Education (SETE) project in Australia which highlighted the complex and non-linear processes of learning teaching and doing teaching which challenge notions of evidence as it is currently constructed in policy and related accountability mechanisms. Based on this study, and drawing on complexity theory (e.g. Cochran-Smith, Ell, Ludlow, Grudnoff, & Aitken, 2014; Ell et al., 2017; Ell et al., 2019), I argue that

singular thinking about the purpose of teacher education as preparing beginning teachers (only) must be problematised and that the ways in which evidence of teacher education effectiveness is constructed in policy must be interrogated and reframed to enable useful connections between teacher education policy and research.

### **Conceptualising teacher education: Three phases**

Cochran-Smith and Fries (2005) argue that teacher education was first conceptualised as training, then as learning to teach, and more recently it has been framed as a policy problem. The connections between teacher education policy and research have varied at each phase.

#### ***Teacher education as training***

Teacher education research and investigating learning to teach is a relatively new research field. In the 1960s, the main focus was researching teaching. This so-called ‘process-product’ research examined the relationships between measures of teacher behaviour (process) and measures of student learning (product) (e.g., Good & Brophy, 1973). Based on the identification of desirable teacher behaviours said to be connected with student achievement and a process of breaking down teaching into component sub-skills, teachers were then trained to replicate these skills. The training involved observation and then practice, usually focussing on one skill at a time and practicing it with small groups who were often fellow trainee teachers. Subsequently, video-taping technologies made it possible to capture teaching as the basis for post-lesson discussions and evaluations with those peers and an instructor. It was assumed that after mastery of each of the skills, trainee teachers would be able to appropriately use all the skills to teach whole lessons and whole classes in effective ways. However, this skill transfer was not always achieved and soon researchers began to move away

from a sole focus on teachers' behaviour to a deeper consideration of teachers' cognitive processes while they were teaching.

### ***Teacher education as learning to teach***

As a result, the so-called 'teacher thinking' research came to prominence (Clark, 1988) and teacher education started to focus more on the learning aspect of learning to teach. A particular focus of the research at this time was that investigating teacher knowledge - how it is acquired, held and used (e.g. Shulman, 1986). Of course, Shulman's notion of pedagogical content knowledge went on to make a significant contribution to the knowledge base for teaching and thus learning to teach, having substantial impact on how teacher education was regulated and practiced. In addition, investigations into teaching as a reflective activity resulted in reflective practice becoming a major focus in teacher education programmes (e.g. Zeichner & Liston, 1987). Teacher education policy and practice at this time (both for initial and in-service or continuing teacher education) emphasised knowledge for teaching, acquiring that knowledge, and understanding how professional practice impacted the learning of a broad range of students and what to plan and do in future teaching episodes as a consequence.

In both these phases, teacher education as training and teacher education as professional learning, the research of the time provided strong evidence for the related policies. However, the past decades have seen a distinct shift in policy as international comparative assessments and country concerns about economic competitiveness have further contributed to, and perhaps spotlighted, the teacher centrality discourse in policy reforms (Larsen, 2010).

### ***Teacher education as a policy problem***

Teacher education came to be positioned as a policy problem and ‘the broad parameters of teacher education policy that can be controlled by institutional, state, or federal policy makers ... most likely to have a positive effect’ (Cochran-Smith, 2004, p.297) were isolated and became the focus of policy change. In this way, teacher education is portrayed as a complicated problem rather than a complex system (Ell et al., 2019). In complicated systems, the whole is assumed to be equal to the sum of the parts, so by taking the system apart and examining its component parts, the system and its functioning can be illuminated in order to understand it (Davis & Sumara, 1997). This forms the basis of plans to improve component parts and, by assumption, the whole system.

In England, for example, the White Paper on *The Importance of Teaching* (Department for Education (DfE), 2010) signalled a change in teacher education policy citing performance in international assessments as the main warrant for change and highlighted the need to improve teacher quality and teacher education. A basic premise was that teaching is a craft that is best learned on the job where core teaching skills can be attained (Department for Education (DfE), 2010). A significant and long-lasting effect of this document was its promise to increase learning on the job through the establishment of teaching schools and making sure more (and in some cases, all) training time occurred in schools. The growth of ‘school-led’ routes into teaching by the academic year 2015–2016 is demonstrated in Whiting’s et al. (2018) topography of routes to qualified teacher status (QTS) in England. In the past decade, policy discourses have become increasingly dominated by binary debates about whether the professional education of teachers should be school-led or university-led.

At around the same time as the White Paper in England, reforms in Australia promised alternative pathways into teaching (signalling the birth of *Teach for Australia*)

and the establishment of a national body, the Australian Institute for Teaching and School Leadership (AITSL), to provide leadership and oversight of national professional standards for teachers, national programme standards for the accreditation of teacher education programmes, and nationally consistent teacher registration (Council of Australian Governments, 2009). Not long afterwards, in 2014, the Australian Government established the Teacher Education Ministerial Advisory Group (TEMAG) to review teacher education, yet again. Like others before them, their report cited poor results on international assessments as a major warrant for change (Teacher Education Ministerial Advisory Group, 2014, p.2) and advanced the discourse on the centrality of the teacher. Much of the report's commentary and recommendations highlighted a sense of urgency to improve the quality of teacher education through more rigorous accountability mechanisms designed to ensure the 'right' people come into teaching and that they graduate with practical skills for the classroom and are 'classroom ready'. All but one of the recommendations was accepted by the Australian Government and those were quickly translated into policy and related directives. A recommendation for one national regulator for the teaching profession to take over from the state and territory regulators was not accepted, indicating that the states and territories in the federation were not ready to cede their historical control just yet.

As these examples demonstrate, conditions associated with increased education accountability and tighter regulation, market-oriented education policies, and funding linked to economic growth, have elevated a discourse of teacher centrality and teacher quality leading to scrutiny of teacher education and positioning it as a policy problem needing a solution. The subsequent policies involved manipulating aspects of teacher education including: where it happens (e.g., in schools, in partnerships); how it happens (e.g., as part of an apprenticeship); when it happens (e.g., as you are teaching); and,

what it should focus on (e.g., practical skills for the classroom). This was accompanied by an assumption that all this could be assured by tighter regulation and accountability mechanisms.

In this paper, I argue that we are now in a second stage of the phase of teacher education as a policy problem, one in which teacher education policy is ideologically based and is dominated by a rhetoric of evidence and impact. To understand how this has developed, I examine some of the influences on current teacher education policy.

### **Influences on current teacher education policy**

Global and international influencers inform policy construction which is enacted in specific localised contexts. Vidovich (2007) frames these as macro, intermediate, micro levels of the policy trajectory. However, this is not a one-way influence. Policy texts and their enactment can cycle back as influencers at other levels. While it is outside the scope of this paper to undertake a comprehensive analysis of teacher education policy, I draw on Vidovich's (2007) hybridized model to highlight the dominant global and international influences (the macro level) involved in the production of teacher education policy texts (the intermediate level), drawing on some examples from Australia and England. I suggest that this is where opportunities for useful connections between policy and research might be realised. More localised or micro levels of influence happen as policy is operationalised within institutions but there is little evidence of this institutional work cycling back and influencing the macro and intermediate level of the policy trajectory. However, this is currently where teacher education research often happens. As a result, the connections of teacher education policy with teacher education research are weak.

### ***Global and international influences***

As noted above, international comparisons are regularly used in arguing the need for new education policies and reform agendas. It is argued that teachers are central to improvement of the education system and policies are constructed that are intended to improve teacher quality. In this process, components of teacher education are often singled out as policy problems needing fixing. Moreover, because of relatively short political cycles, changes which can be implemented relatively quickly become attractive (e.g., teacher testing, attention to entry standards for teacher education, Australian Institute of Teaching and School Leadership, 2019).

Ideas about good teaching and good teacher education circulate around the world with increasing coverage and speed assisted by technology. The ideas proposed by a growing number of travelling education experts is a particular feature of many education reform agendas, magnified by various versions of a belief that ideas and the people promoting them from another part of the world (particularly one that is seen to be ‘doing well’ on international assessments) are inherently more valid. However, the influence of global corporate actors like McKinsey and Company on local and national teacher education policies and programmes is also evident (e.g. McKinsey & Company, 2007), as is the influence of trans-national entities like the Organisation for Economic Co-operation and Development (e.g. OECD, 2019). They are often cited as research evidence for the need for change and reform. In this context, decontextualized policy borrowing is rife, but it often resembles ‘a piecemeal, “pick n mix” approach that ignores the fact that educational policies and practices exist in ecological relationships with one another and in whole ecosystems of interrelated practices’ (Chung, 2016, p.207). Amongst these travelling ideas are influential global networks like *Teach for All* which promotes an alternative pathway into the profession bypassing university-based



teacher education or reducing their role, and which has been taken up and replicated in 53 countries.

Another aspect of globalisation influencing teacher education policy is the movement of people across borders. The travelling teacher or teacher as cosmopolitan (Mayer, Luke, & Luke, 2008) is often problematic for governments as they seek to secure an adequate supply of teachers particularly in contexts where growing school student populations and teacher attrition and/or lack of attraction to the teaching profession, mean predicted teacher shortages. Thus, the movement of newly qualified teachers to other jurisdictions is often referred to as ‘wastage’ and there are instances where national regulation is attempting to make teacher education providers accountable for the employment of their graduates (and sometimes retention) as well as the impact of their teaching (e.g. Australian Institute of Teaching and School Leadership, 2019).

### ***The construction of national teacher education policies***

The construction of national teacher education policies occurs within, and responds to, the global and international influences noted above. Warrants for change and reform are espoused and the resulting policies set out to increase the rigour of accountability mechanisms, often taking as their starting points a need to improve standards in relation to other countries.

The pattern of setting up government selected review panels (often drawing in some of the key actors or external experts referred to above) is well established - see, for example, England’s ‘Carter Review’ (Carter, 2015) and Australia’s ‘TEMAG’ (Teacher Education Ministerial Advisory Group, 2014). Such reviews are tasked with canvassing the views of different stakeholders by calling for submissions, reviewing practices in other countries (usually those deemed to be high performing in international

assessments), reviewing relevant research (often by citing secondary sources and reports from the trans-national entities referred to above), and making a set of workable recommendations which can be directly translated into policy and implementation directives. Quite often, the preferred direction is unambiguous, as for example in Australia when the Minister for Education announced the TEMAG review to the media:

And there is evidence that our teacher education system is not up to scratch. We are not attracting the top students into teacher courses as we once did, courses are too theoretical, ideological and faddish, not based on the evidence of what works in teaching important subjects like literacy. Standards are too low at some education institutions - everyone passes.<sup>2</sup>

The official government documentation was similarly direct. TEMAG was tasked with making ‘recommendations on how ITE [initial teacher education] in Australia could be improved to better prepare new teachers with the practical skills needed for the classroom’ and the review group took as its starting point ‘significant public concern over the quality of initial teacher education in Australia’ (Teacher Education Ministerial Advisory Group, 2014, p.ix). Their report and recommendations foregrounded a sense of urgency to improve the rigour and quality of teacher education. The answer to this was seen as more rigorous accountability mechanisms and standards as well as a substantial emphasis on making teacher education providers accountable for ensuring the ‘right’ people come into teacher education (by focussing on academic skills associated with their secondary schooling, their personal characteristics, and the levels of personal literacy and numeracy) and that new teachers are ‘classroom ready’. A sense of urgency in ensuring classroom ready teachers was clearly reflected in the title of the

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<sup>2</sup> Hon Christopher Pyne, Minister for Education. *Sydney Morning Herald*, 18 February, 2014

report ‘Action Now: Classroom Ready Teachers’ (Teacher Education Ministerial Advisory Group, 2014) and the classroom ready mantra guided translation of the recommendations into regulation (Australian Institute of Teaching and School Leadership, 2019).

Such constructions of teacher education policy represent teacher education as a complicated system and an assumption that identifying the component parts and fixing those parts will lead to improvement of teacher education in its entirety (Cochran-Smith et al., 2014). As a result, as the examples discussed above show, the policies focus on trying to fix parts of teacher education by regulating: standards for entry into and exit from teacher education; personal levels of literacy and numeracy through testing; selection of teacher candidates including non-academic criteria and personal characteristics; and, performance assessment of new teachers against standards based on practical skills for the classroom. Sometimes, particular issues are signalled out as needing attention in teacher education programmes for educational and/or political reasons, usually resulting in a requirement to include specific content in the programme, and this is often expressed as an amount of time. See, for example: English, Mathematics and Science (Australian Institute of Teaching and School Leadership, 2019, p.14); strategies for teaching Aboriginal and Torres Strait Islander students (Australian Institute of Teaching and School Leadership, 2019, p.19); Special Educational Needs and Disability (Department for Education (DfE), 2019). Thus, in the end, regulation frames teacher education accountability in input terms as well as output terms, and sometimes in contradictory ways.

More recently, but still part of this phase positioning of teacher education as a policy problem, I suggest that teacher education is now being positioned as a politically

constructed ideological policy problem where a discourse of evidence is framing teacher education practice and research.

### **Teacher education and the permeation of evidence**

Evidence is frequently invoked as a warrant for change and as the rationale for new policy directions and directives. As the basis for the recommendations, the Carter Review (2015) stated,

We have gathered a wide range of evidence and views through a range of activities including: extensive discussions with sector experts and stakeholders; 31 visits to ITT providers and schools; a call for evidence (which received 148 responses); a review of course materials; and a review of the existing evidence base, including international evidence, Ofsted evidence and findings from the 2014 Newly Qualified Teacher (NQT) survey (p.5).

In addition, the UK Department for Education's ITT Core Content Framework (2019) claims that it 'draws on the best available evidence' (p.3) in detailing what trainee teachers should learn and be able to do. The design of the Framework includes two types of content: 'key evidence statements (Learn that) have been drawn from current high-quality evidence from the UK and overseas' (p.4) and 'practice statements (Learn how to) ... drawn from the wider evidence base including both academic research and additional guidance from expert practitioners' (repeated for each standard statement in the document). Similarly, the TEMAG (2014) report in Australia claimed to 'consider wide-ranging evidence and research' in its review. The very first statement in the Executive Summary states, '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' (p.xi). Even though these documents use the word 'evidence' to support claims, Helgetun and Menter (2020) recently suggested that evidence is a rationalized myth in teacher education policy and that it is often politically constructed and rooted in

dogmatic ideology and popular ideation. The claims for evidence noted above and the constructions of teacher education policy discussed earlier would certainly support this. However, in this paper, I focus on another way in which evidence is used in teacher education policy and associated regulatory frameworks, and discuss the ways in which this is contributing to disconnections between teacher education policy and research.

Sometimes a rhetoric of evidence is engaged, almost as if to enhance the legitimacy of suggestions. In Australia, the TEMAG (2014) report's Recommendation 6 stresses 'evidence-based teaching strategies' and Recommendation 14 urges 'Higher education providers [to] deliver evidence-based content'. Likewise, the Carter Review in England highlighted the importance of 'evidence-based teaching' and thinking about teaching as an 'evidence-based profession'. And as noted above, the Department for Education's ITT Core Content Framework (2019) engages the notion of evidence-based teaching. However, as Cochran-Smith and Power (2010) reminded us, teacher quality encompasses a range of things including student learning outcomes, teacher recruitment, teacher qualifications, preparation and pathways, induction, professional development, teachers' working conditions, teacher assessment and effectiveness, employment, and attrition and retention. Many of these end up being used as proxies for teacher quality and teacher education quality and are invoked as part of accountability discourses and subsequently incorporated into standards and regulation. The calls for evidence of teacher education effectiveness certainly include many of these proxies in ways that mean the evidence purporting to signal effectiveness of teacher education are, in reality, not able to be directly related to the teacher education programme itself. For example, evidence is a core feature of the standards for accrediting teacher education programmes in Australia as the following underpinning principles 1 and 2 for accreditation highlight:

1. Impact – the accreditation process relies on evidence about the program’s impact. Evidence of impact is drawn from both pre-service teacher performance and graduate outcomes.
2. Evidence-based – evidence must underpin all elements of initial teacher education, from the design and delivery of programs to the teaching practices taught within programs. Evidence is the basis on which panels make accreditation recommendations.

(Australian Institute of Teaching and School Leadership, 2019, p.3)

Operationalising these principles, ‘Program Standard 1: Program outcomes’ requires ‘pre-service teachers to have successfully completed a final-year teaching performance assessment prior to graduation’ (p.10). However, it also requires providers to provide evidence of impact of the programme by including the following data as evidence:

- a) employment data
- b) registration data
- c) survey data including graduate and principal satisfaction surveys
- d) studies designed to assess the impact of graduates on student learning including case studies and surveys
- e) any other type of outcomes data that can be tenably linked to information on program improvement, graduate outcomes and/or positive impact on student learning. (p.10).

As a result, teacher education providers are being asked to provide evidence of their effectiveness and the impact of their programmes in relation to things over which they have no direct control, such as employment and retention, and being held accountable for these things.

It could be argued that notions of evidence circulating in the policy discourse might provide opportunities for teacher education research. Certainly, securing evidence and data is fundamental to good research. So, does the current policy context and its focus on evidence provide an opportunity for teacher education research to build a body of academic and scholarly work (a requirement for university-based teacher educators) and at the same enable providers to demonstrate the effectiveness of their programmes and also ongoing programme improvement for accountability purposes? This might be possible and support stronger connections between policy and research. To explore this notion, and within the context of teacher education research more generally, I draw on the findings from a large-scale longitudinal study in Australia investigating teacher education effectiveness to argue that teacher education researchers have to change the discourse about what counts as effective teacher education and what counts as evidence of that effectiveness.

### **Teacher education research**

Reviews of teacher education research have regularly concluded that it is underdeveloped and undertheorized, with many unrelated small-scale investigations (e.g. Cochran-Smith et al., 2015; Mayer, Cotton, & Simpson, 2017; Rowan, Mayer, Kline, Kostogriz, & Walker-Gibbs, 2015). These small-scale studies have informed local teacher education practice in useful ways but they do not produce the data sets that policy makers generally appear to be seeking. The prevailing view is that this body of work has not systematically built a knowledge base for teacher education policy (Sleeter, 2014). Moreover, the fact that teacher education programmes are constantly changing and adapting means that researching such a dynamic system is difficult if using what might be considered more traditional methods of research and analysis (Cochran-Smith et al., 2014; Gray & Colucci-Gray, 2010). Reviews of teacher

education research often call for more larger scale and longitudinal studies to fill the perceived void in the body of research that informs policy. In this context, a large-scale, longitudinal, mixed methods study undertaken in Australia 2011-2015 was designed to inform teacher education policy in that country. A group of teacher education researchers set out to respond to policy actors in Australia at the time who were continually claiming a lack of evidence of the effectiveness of teacher education, concluding by implication that it was not effective and therefore that change was urgently needed.

This Studying the Effectiveness of Teacher Education (SETE) study investigated the effectiveness of teacher education for early career teachers in Australia by following graduates from teacher education programmes into their early years of teaching to ascertain their perceptions of how well prepared they felt for teaching by their teacher education programmes and also how effective they felt as new teachers. In addition, it investigated principals' perceptions of new teachers' preparedness and effectiveness. The study started from the premise that there are multiple ways of thinking about and enacting teacher education that involve different, but related, spatial practices (after Lefebvre, 1991). In this way, teacher education is not a singular construct but a set of representations, practices, and experiences that are socio-spatial and relational in nature. This framing for the study provided a way of understanding the experiences of beginning teachers, particularly as they transitioned from teacher education in universities to their teaching appointments in schools and the dynamics between the teacher education programme, the individual, and the workplace. The study used a longitudinal, mixed-methods, iterative research design including: mapping teacher education programmes to document various characteristics and components of the programmes; surveys of graduate teachers and their principals (four surveys over three



years involving over 5,000 graduate teachers and 1,000 principals); and, case studies of 197 beginning teachers in 29 diverse school settings. While the findings of this study have been more comprehensively reported elsewhere (e.g. Mayer et al., 2015; Mayer, Dixon, et al., 2017), I draw on a snapshot of the findings in this paper to argue how teacher education research and notions of evidence might usefully be reframed so that teacher education researchers can make contributions to the scholarly knowledge base in the field and, at the same time, provide valid evidence for accountability purposes within regulatory frameworks that require teacher education programmes to provide evidence of their effectiveness.

Overall, SETE reported that graduate teacher respondents felt prepared by their teacher education programmes and also felt effective as beginning teachers in all nine scaled key areas of teachers' work that were used in the surveys and examined in the case study data, including:

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

However, these new teachers felt better prepared in the areas of pedagogy, professional ethics and engagement with ongoing professional learning, and less well prepared in the areas of classroom management, professional engagement with parents/carers and the

community, assessment and the provision of feedback and reporting on student learning, and teaching culturally, linguistically and socio-economically diverse learners. In terms of effectiveness as beginning teachers, the respondents judged themselves as more effective in the areas of professional ethics and engagement with ongoing professional learning but less effective in teaching culturally, linguistically and socio-economically diverse learners, the design and implementation of the curriculum, pedagogy, and assessment and the provision of feedback and reporting on student learning. Thus, the area of teaching culturally, linguistically and socio-economically diverse learners was worryingly the area in which respondents felt both least well prepared and least effective. Principals reported the new teachers as being more effective in all areas than the new teachers judged themselves. Both the graduate teachers and the principals identified classroom management and catering for diverse learners as key challenges during the first year of teaching.

In the statistical analysis of the survey data, perceptions of preparedness were not able to be causally linked with particular characteristics or dimensions of the teacher education programmes identified in the mapping, though there was evidence that those graduate teachers who completed a teacher education programme of two or more years' duration did feel more well prepared. However, employment and school context were identified as having the most significant bearing on perceptions of preparedness and effectiveness. For example, those with fulltime and permanent employment as teachers were more likely to say their teacher education programme prepared them well and that they felt effective as beginning teachers. Moreover, new teachers in schools where there were solid support structures and/or where there was synergy between their own educational philosophy, that of their teacher education programme and that of the school, were more likely to report that they felt well prepared.

While both graduate teachers and principals suggested that the preparation provided by teacher education programmes would have been strengthened if there had been more time in schools and more time on strategies for teaching and less theory, both groups articulated a view that teacher education provides necessary knowledge and skills to enter the profession as effective beginning teachers and that professional learning and growth continue during the first few years of teaching and employment. In this way, ‘classroom ready’ was not seen as a destination. Moreover, there was an understanding that ‘the classroom’ doesn’t really exist as any one thing and that diverse contexts mean there are many classrooms and many school settings for which new teachers have to be prepared. These findings challenge some of the policy directions discussed earlier in this paper.

The career progression of graduate teachers was also investigated including employment pathways, movements between schools and out of the profession (teachers in case study schools who moved to other schools or left teaching were followed up). Career progression decisions were influenced by multiple factors including the professional capabilities that they developed as a result of their teacher education programmes, the conditions of the job market and employment opportunities, as well as particular school workplace conditions. Moreover, workplace mobility was sometimes associated with personal circumstances, employment possibilities in particular geographic locations, and available and affordable housing.

The findings from this study suggest that teacher education researchers have to work towards challenging the policy discourse about what counts as effective teacher education and what counts as evidence of that effectiveness if compelling and convincing connections between teacher education policy and research are to be realised.

### **Making policy connections: Evidence and teacher education research**

The SETE study highlighted complex, interrelated, and nonlinear processes of learning to teach which do not align with the ways in which evidence of effectiveness of teacher education is often framed in teacher education policy. Singular thinking about the purpose of teacher education as preparing beginning teachers must be problematised if valid and comprehensive evidence about its effectiveness is to be realised. Although the majority of the new teacher respondents in the study regarded themselves as prepared and effective, they did not always attribute this to their teacher education programmes. Employment and other workplace and personal conditions post-graduation had a significant effect on the ways in which they reported their preparedness from their teacher education programme and their effectiveness as early career teachers. Moreover, continuing professional learning opportunities were either enriched or restricted according to employment and workplace conditions, and contributed to a changing sense of preparedness and effectiveness over time. Thus, SETE demonstrated that the issue of providing evidence of the effectiveness of teacher education is not as straightforward as some policy directives might suggest. Indeed, it must be noted that some policy actors at the time found the findings challenging because of their view that desirable research should enable definitive judgments to be made at point of graduation from teacher education programmes about exactly what aspects of the programmes were not working and thus provide clear directives about exactly what components of teacher education (i.e. what standards) needed policy attention and reform. The idea that new teachers' perceptions of preparedness and effectiveness could not solely be attributed to the teacher education programmes, and that employment and workplace factors associated with the first few years of teaching had even more impact, was challenging from a policy perspective that was seeking to tighten regulation in order to improve teacher education.

Much of what has characterised policy thinking to date and which was certainly evident in policy actors' responses to the findings, comes from thinking of teacher education as a complicated system, one in which teacher education can be taken apart and the component pieces examined in order to understand and change them with the expectation that this will improve the whole system (of teacher education) and its functioning. However, teacher education is more like a complex system and 'if a complex system is taken apart, key aspects of how the system works and what makes it work in the first place are lost since unexpected consequences arise as a result of the dynamic interaction of parts' (Cochran-Smith et al., 2014, p.107). When teacher education is thought of as part of complex system, and as part of the wider education system, multiple parts and interactions are acknowledged, but more importantly the whole is acknowledged to be more than the sum of its parts. The role that teacher education plays in the education system can be underestimated when it is seen as a 'supplier' of new teachers rather than as an integral part of the wider education system (Ell et al., 2019).

So, what does this mean for constructions of evidence that accountability frameworks desire so much? As the SETE study showed, linear cause-effect frameworks do not provide an adequate way to understand teacher education and evidence of its effectiveness. Moreover, there is no way of substantiating a clear link between teacher education effectiveness and employment and career trajectories like some policy directives would suggest. However, more authentic conceptualisations of evidence are possible if teacher education is conceptualised as part of the wider educational complex system. This provides opportunities to investigate how, and with what effect, teacher education and teacher educators interact with: teachers and principals; other teacher education institutions; schools and their communities; policy

actors and regulatory processes and policy; as well as, the body of educational research. In this way, evidence of the effectiveness of teacher education would involve investigations within and across these agents and elements as they interact with teacher education. Evidence would entail investigating the impact and influence of the teacher education programme and teacher educators on teachers and their teaching in schools, on principals and other school leaders and their leadership in schools, as well as school communities. Such a framing would also provide opportunities to explore evidence in terms of the interrelatedness of teacher educators' practice and research with policy as well as research and associated bodies of knowledge. Moreover, this would open up new research agendas for teacher educators such that more wholistic evaluations of teacher education work could be framed, including for example more valid understandings of effective partnerships in teacher education.

The ubiquitous evidence discourse in current policy is determining what data and information will be accepted as evidence of teacher education effectiveness. However, I argue that the assumed linear connections driving regulation and accountability mechanisms and dictating what counts as evidence are not valid. If teacher education is conceptualised as part of the wider education system, more valid interpretations of evidence are possible that enable useful connections between teacher education policy and research.

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