

# Reviewing the Evidence Base: Attraction, Pathways and Retention

## A Focus on Pathways to Teaching



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**What traditional and innovative pathway models are being used in countries with similar contexts to Australia?**

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**How do different pathways into teaching correlate with students success and teacher career satisfaction?**



## Key points for orienting readers

1. Traditional and innovative pathways
  - Within Australia and globally, teacher preparation pathways support teachers' development of theoretical knowledge and practice-based learning.
  - Traditionally, higher education-based pathways have focused more heavily on theoretical knowledge, while school-based pathways prioritised practice-based learning.
  - Australian higher education-based pathways are generally four years (undergraduate) and two years (postgraduate). Previously, shorter Australian preparation programs have been offered (e.g., one-year postgraduate Diploma).
  - Employment-based models of teacher education are not new. Current Australian versions (i.e., Teach for Australia, Nexus) operate outside of current higher education funding models, requiring additional government funding and philanthropic support.
  - Internationally, there are numerous emerging alternatives to traditional degrees, including models which involve strengthened school-HEI partnerships (e.g., teacher residencies).
  
2. Conditions that support different pathways
  - Within Australia, there are diverse entry points into teacher preparation, including via ATAR scores, enabling programs, VET qualifications, and post-graduate entry into traditional or employment-based programs.
  - School-based professional experience placements are a vital component of teacher preparation, but length and timing of these vary.
  - All Australian pathways require strong collaboration between schools and universities. While universities have traditionally controlled these partnerships, overseas, some models have shifted this balance of power (e.g., SCITTs in England).
  - Quality higher education and school-based teacher educators are required to support all pathways. Teaching potential teachers is a distinct skill set which needs to be developed.
  - Teacher training pathways need to be cost-effective and sustainable.
  - For public confidence, there is a need for quality assurance mechanisms in ITE to include evidence demonstrating the appropriateness, impact, and cost-effectiveness of all pathways.
  - Online models of teacher preparation have increased the flexibility and reach of ITE.
  
3. Pathways into teaching, student success, and career satisfaction
  - Evaluating ITE pathway effectiveness involves trying to measure and relate a wide range of variables. These include factors relating to candidate characteristics (e.g., demographics, achievement, non-cognitive traits), ITE program qualities (e.g., curriculum rigour, teacher educator quality, program structure), and characteristics of schools where the candidate teaches (e.g., student demographics, school climate and leadership).
  - Comparative studies may not choose appropriate comparison groups, ignore important contextual factors, and pay insufficient attention to subgroup performance.
  - Teacher satisfaction can be measured directly via surveys and interviews, or indirectly via proxies such as attrition.

# INTRODUCTION: PATHWAYS

This part of the report explores three questions:

1. What traditional and innovative pathway models are being used in countries with similar contexts to Australia?
2. What are the conditions that support different pathways into teaching?
3. How do different pathways into teaching correlate with student success and teacher career satisfaction?

In Western countries, most teachers still complete a university degree in education prior to commencing teaching. However, alternative pathways aligning with a deregulated approach to initial teacher education (ITE) are increasing in countries such as the United States (Anderson, 2020), Australia (Evangelinou-Yiannakis, 2019), and New Zealand (Crawford-Garrett et al., 2021). England, in particular, has encouraged the diversification of pathways (Foster, 2019; Noble-Rogers, 2021). Higher education-based models of

initial teacher education (i.e., a Bachelor or Master degree program including practicums within schools) are now facing competition. Sometimes referred to as hybrid models, school-based pathways where in situ learning is foregrounded (e.g., teacher residencies, Matsko et al., 2022) are increasing, including employment-based pathways (e.g., Teach for Australia, Weldon et al., 2013). Additionally, models based purely on workforce needs are emerging (e.g., uncertified teachers working under 'emergency credentialing' and 'permission to teach', Goldhaber, 2010; Weinberger & Donista-Schmidt, 2016). These stopgap measures are increasingly drawn upon to fill shortages in countries including the United States (Cardichon et al., 2020) and Australia (Vanderburg & Fisher, 2023). This part of the report will identify various current approaches to teacher preparation before exploring the conditions underpinning these and the evidence relating to each approach.

## WHAT TRADITIONAL AND INNOVATIVE PATHWAY MODELS ARE BEING USED IN COUNTRIES WITH SIMILAR CONTEXTS TO AUSTRALIA?

The reviewed literature highlighted two main components of teacher preparation. First, is theoretical learning, occurring primarily in higher education institutions (HEIs) or universities (e.g., subject area content knowledge, theories about how

people learn). Second, is practice-oriented or applied learning, typically occurring in schools (e.g., teaching practices and strategies). These appear to operate along a continuum.



▲ Figure 1. Initial Teacher Education Continuum

### Defining key teacher education pathways

In this section, initial teacher education (ITE) in higher education institutions (HEIs) includes programs where much of the candidate’s learning takes place at a university or HEI under the guidance of teacher educators. Programs lead to formal tertiary qualifications at undergraduate and postgraduate levels (e.g., Bachelors, Graduate Certificate, Masters Degrees). Within this pathway, one or more professional experience placements in schools allow candidates to apply their learning in a practical setting and gain hands-on teaching experience. The duration of these placements, often called professional experience placements or practicums, varies significantly within and across countries.

The term school-based teacher preparation is used to describe programs where significant time during ITE is spent training within a school, sometimes also referred

to as hybrid programs to reflect the more shared responsibility between schools and outside education providers (e.g., HEIs) for the teacher candidate’s learning. These are typically subject to the requirements of regulatory authorities responsible for certifying licensure. Some examples of programs we categorise as school-based teacher preparation include: School Centred Initial Teacher Training (SCITT) in England (Foster, 2019) and Urban Teacher Residencies (Berry et al., 2008b).

A key subgroup of school-based pathways are employment-based pathways. These are defined as those where candidates undertake a paid role at a school, often as the teacher of record early in their period of training (e.g., Teach for America: Anderson, 2020; Troops to Teachers: Chadderton, 2014). In these, only a brief period of preparation occurs prior to commencing work within a school, with the candidate simultaneously fulfilling training and employment obligations.

Figure 1 shows how both broad approaches blend academic and school-based learning. Both involve collaboration between schools and universities or training providers. Higher education-based programs require observation and student teaching in schools. Likewise, most school-based pathways into teaching expect candidates to engage in some type of formal academic learning outside of school hours, often leading towards a tertiary qualification.

Both HEI-based and school-based pathways are considered by their proponents to be legitimate models of teacher training. They are distinguished from mechanisms such as ‘emergency credentialing,’ where an uncertified person is granted permission to teach for a short period of time to fill workplace shortages.

We acknowledge the myriad terms used to describe teacher preparation programs and pathways (e.g., alternative certification, internships, teacher residencies, etc.) that sit within and/or overlap these categorisations, and often do not have shared meaning across programs and cultural contexts (e.g., Ledger & Vidovich’s 2018 discussion of the diversity of programs categorised as ‘internships’). Programs discussed within these broad categorisations are also contextualised by vastly different policy landscapes and funding models.

Additionally, these two approaches are also becoming more interconnected with the increased use of online study modes within HEI-based ITE (Dyment & Downing, 2020). While teacher education via varying distance learning modes is not new (Burns, 2011), digital technologies now allow universities or other educational providers to flexibly deliver coursework synchronously and asynchronously to those in school-based pathways. For example, Australian Catholic University currently provides primarily online coursework leading to a Masters degree for those in the Teach for Australia employment-based pathway (dandolopartners, 2021). There is widespread acknowledgement that the need to pivot to online learning during COVID-19 pandemic lockdowns has accelerated technological innovation in ITE, even in relation to previously ‘in person’ aspects such as practicums (e.g., Kidd &

Murray, 2020). Continued innovation has the potential to allow even more effective blending of academic and school-based learning. The following sub-sections will provide examples of the types of approaches to ITE within the broad categories of University- and School-based ITE.

### **Higher education-based initial teacher education**

HEI-based ITE has been the dominant pathway into teaching in English-speaking countries (Tatto, 2015). It is argued that if teaching is considered a profession, teacher education must be research informed, preparing future teachers to be both consumers and creators of research (la Velle & Kendall, 2020; Mayer & Mills, 2021). Degree programs allow trainee teachers to study a range of research-informed subjects, preparing them to work in diverse school types. However, HEI-based programs are sometimes critiqued as providing insufficient opportunities for candidates to connect theory to practice (Kitchen & Petrarca, 2016; Vick, 2006). They are also criticised for failing to recruit sufficient highly skilled and diverse candidates to cover workforce shortages (Berry et al., 2008a). However, degree programs generally have multiple opportunities for ITE candidates to observe and engage in practice teaching in schools under the guidance of experienced teachers. Candidates often describe these professional experience placements in schools as being the most important to their learning (Kitchen & Petrarca, 2016). While most HEI-based ITE is situated within universities, there are emerging models within some countries where providers confer qualifications without university affiliation (e.g., New Graduate Schools of Education within the United States, Cochran-Smith et al., 2021).

In Australia, a range of tertiary qualifications lead to teacher credentialling. Bachelor of Education (4 years) and Master of Teaching degrees (2 years) are the most common teaching qualifications. The latter can be fast-tracked to 18 months. One-year post-graduate qualifications are also offered

within some jurisdictions (e.g., Postgraduate Certificate in Education (PGCE) in England, Foster, 2019); Graduate Diploma formally offered in Australia, Mayer et al., 2017).

Within some countries (e.g., the United States), there are also pathways designed to encourage non-traditional applicants to become teachers. These are sometimes referred to as 'grow your own' programs (Espinoza et al., 2018; Gist et al., 2019). In these, candidates are recruited from the local community, with diverse people already undertaking employment within or related to education encouraged to apply (e.g., teacher aides, youth support workers). Often these pathways bring together multiple education providers. For example, candidates may complete the first two years of their degree at vocationally orientated community colleges, which have lower admission requirements, before completing their final two years at university (Espinoza et al., 2018). In Australia, small, targeted programs aimed at supporting community members to become teachers do exist, but these are poorly documented within research. While Vocational Education and Training (VET) providers do offer education-related qualifications, these are seldom vertically mapped into degree programs. However, some universities do offer automatic admission or credit transfer arrangements for students who have completed relevant educational support qualifications via VET pathways.

*Specialised initial teacher education programs are designed to combat workforce shortages.*

Growing concerns about workplace shortages and/or social justice have led to the creation of specialised ITE programs. For example, within Australia, the National Exceptional Teachers for Disadvantaged Schools Programme is based on the philosophy that "...ITE has to play a more active role in preparing and channelling the best of those pre-service teachers towards the schools that need them most" (Burnett & Lampert, 2019, p. 43). Now offered at seven different universities, the selective

pathway is open to high performing ITE candidates. After two years, those with a grade point average (GPA) higher than 5.8 (credit equivalent) can join the program. In their final two years, they gain additional professional development opportunities, instruction around social justice theories, and undertake school placements in low socio-economic status (SES) schools. The now disbanded Teacher Education Centres of Excellence were also developed to address workforce shortages, with foci on aspects such as regional and STEM education. For example, the regional and rural education centre offered participants additional mentoring, a likeminded cohort, rural placements, and an internship at a rural school offering the graduate permanent employment (Willis et al., 2012). The STEM education centre also provided students with additional seminars and classroom opportunities (Jorgensen & Alden, 2018).

### **School-based teacher preparation**

In this report, the term school-based teacher preparation is being used to describe a diverse range of approaches to teacher preparation, including programs labelled as alternative certification or lateral entry pathways. A commonality is that these approaches broadly draw on an apprenticeship model of learning where a significant amount of a candidate's learning occurs through mentorship from an experienced teacher within a school setting.

The structures and purposes of these programs are diverse. Some have the expressed purpose of fast-tracking candidates into the classroom (e.g., Teach for America). Other programs aim to recruit people from diverse backgrounds into teaching and may include a more traditional program of study, culminating in an extended internship or residency. Programs may also structure the candidates' postgraduate coursework around extended school-based training. In England, the creation of School-Centred Initial Teacher Training (SCITT) and programs such as Schools Direct (Foster, 2019) have given



schools far more control of teacher education.

Two major drivers appear to underpin school-based models. One is a theoretical perspective on learning to teach, with teaching often viewed as a ‘craft’ (Kitchen & Petrarca, 2016). Within an apprenticeship model, the candidate is hypothesised to learn best by watching the expert work professionally, replicating observed practices, and seeking expert feedback on performance. This approach to learning also privileges the knowledge of current professionals.

The second driver is workforce needs (Kitchen & Petrarca, 2016). Teacher shortages are often used to justify models fast-tracking candidates into the workforce (e.g., Teach for America) or funnelling them into areas of need. Employment-based pathways are argued to recruit people who would otherwise not make the financial investment in gaining teacher certification. Additionally, programs may prepare candidates for specific contexts (e.g., urban schools). For example, programs focusing on increasing social justice may prioritise school-based learning within disadvantaged communities to familiarise and recruit teachers to areas of need (e.g., Nexus program, Lampert & Browne, 2022).

### *Residencies and internships*

There are many terms used to describe an extended period of school-based training as part of higher education studies (e.g., cadetships, extended placements, immersion programs, internships, residencies, Ledger & Vidovich, 2018). Particularly within the United States, these periods of training are often referred to as residencies, drawing on medical education terminology (Chu, 2022); however, the terms residency and internship are sometimes used interchangeably (e.g., Luet & Shealey, 2018). Although the term internship can be used to refer to significantly shorter periods of placement within schools (e.g., 4-6 weeks, Ledger & Vidovich, 2018), this review only focuses on programs offering longer placements.

The timing, duration, and conditions of extended placements vary widely (Ledger & Vidovich, 2018), although the longest placements usually take place towards the end of the degree. In addition to the school placement/s while the candidate is studying, residency programs may also include induction support, job placement, and professional development (Chu, 2022). While most programs claiming to be residencies appear to be postgraduate (e.g., Mentzer et al., 2019), the residency model is also being applied in undergraduate settings (e.g., Chu, 2022; Hackett et al., 2021) and in the development of school leaders (e.g., Steele et al., 2021). Examples of urban teacher residencies include the Academy for Urban School Leadership (AUSL) in Chicago and the Boston Teacher Residency (BTR; see Berry et al., 2008b). Programs in Boston and Chicago are post-graduate entry and include a full year under the mentorship of an expert teacher, followed by a year as the classroom teacher with continued support. Another example is the San Francisco Teacher Residency Program, a year-long program where the resident works alongside an expert teacher while simultaneously studying for degree requirements (Guha et al., 2016). Residency programs may target specific shortage areas. For example, Roegman et al. (2017) described a 14-month postgraduate program training teachers in English to Speakers of Other Languages (ESOL) and Teaching Students with Disabilities (TSWD). These teachers receive a further two years of support as part of professional induction. Adopting a co-teaching model, the candidate’s first semester includes observing and co-teaching, while in the second, they assume increasing responsibility for learning within the classroom.

*The timing, duration, and conditions of extended placements vary widely.*



There are different methods of funding and compensation for these extended fieldwork periods. Some function like traditional ITE programs, where the candidate pays for the experience as part of HEI-based ITE (e.g., Master of Science in Teaching: Luet & Shealey, 2018). Others provide scholarships or stipends to offset educational and/or living costs (e.g., \$33,000 in Chicago versus \$11,000 in Boston: Berry et al., 2008a). Salary for a fractional teaching load during an internship is another form of compensation (Ridgway, 2018). The costs of program incentives to attract teachers to areas of shortage may be government or school district subsidized. Funding from philanthropy may also contribute and these groups sometimes have active input into the running of the program (Lipman, 2015).

#### *England's model of school-based training*

A unique approach to school-based training has been emerging over the past three decades in England, with Whiting et al. (2018) noting “England is an outlier even within the UK” (p. 93). The prioritisation of school-led ITE has led to the formation of pathways such as School Direct and School-Centred Initial Teacher Training (SCITT, Foster, 2019). In these programs, schools control the process of teacher training, receiving the funding and then partnering with organisations of their choice to support trainee teacher learning. While these partnerships may include HEIs and lead to degree qualifications, some programs only result in teacher certification within England. Brown et al. (2015) noted that these new arrangements are significantly shifting the balance of power between schools and HEIs.

Kitchen and Petrarca (2016) argued that England's deregulated system will “eventually lead to only a minority of teacher education being within the university” (p. 149). SCITTs were first announced in 1993, though remained a relatively minor pathway into teaching for several years (Whiting et al., 2018). This situation has changed. SCITTs now form a major pathway to teacher employment and are considered a legitimate ITE provider, though they cannot confer academic

credentials. Schools Direct also allocates candidates to individual schools, working with providers to create appropriate training packages for their preservice teachers.

#### *Employment-based teacher preparation*

Employment-based teacher preparation is a growing subgroup of primarily school-based ITE. The most famous and widespread of these pathways is the Teach for All approach, whose partner organisations now exist in 60 countries (Teach for All, 2022). Examples include the Teach First program within the United Kingdom (Foster, 2019), Teach for Australia (dandolopartners, 2017), and Ako Mātātupu: Teach First New Zealand (Crawford-Garrett et al., 2021). These programs offer employment to candidates who already hold a relevant degree. They are employed in school-based jobs (either as the teacher of record or as a paraprofessional) after a short period of training, with further coursework towards a degree/certification completed alongside teaching (e.g., 5 weeks, USA; 6 weeks, Australia). Some high performing systems (e.g., Finland, Singapore) do not offer similar pathways into teaching (Tatto, 2015).

There are two reported strengths of employment-based pathways. First, as candidates are fast tracked into the classroom, these programs argue that they are helping to alleviate teacher shortages by bringing high quality applicants into the classroom. As candidates have been previously academically successful, it is assumed they are able to learn quickly ‘on the job.’ Second, as participants are paid for their work within the school, the program is seen as a particularly attractive pathway to mid-career changers, who may be otherwise unable to pursue teaching due to financial commitments. These financial incentives are also argued to help attract more diverse and/or academically successful candidates into teaching, given the lower time and financial impost for joining the profession.

*Employment-based pathways are argued to fast-track quality applicants to the classroom.*

Teach for America, and its Australian counterpart Teach for Australia, both require a two-year commitment to teach in a 'hard-to-staff' school. In Australia, candidates typically earn a Masters degree during the two-year program. In America, while additional study during the two-year placement is required, partnerships are diverse, with only some leading to a recognised degree. There are reported concerns about the speed in which people are fast-tracked into teaching jobs. For example, Crawford-Garrett et al. (2021) argued that Teach for All programs place

idealistic people into complex situations (e.g., intergenerational trauma, poverty, racism, etc.), which they are ill equipped to address.

The Nexus program is a recently developed Australian employment-based pathway. Based in Latrobe University (dandolopartners, 2021), it draws on work about effective pedagogies for high poverty schools (e.g., Lampert, 2021). The program focuses on attracting teachers to urban schools to improve social justice. Candidates work in high needs schools as paraprofessionals, starting at a smaller fraction (0.2/0.4) and increasing to 0.8 in their second year.

Attention now turns to consider the conditions that support different pathways into teaching.

## WHAT ARE THE CONDITIONS THAT SUPPORT DIFFERENT PATHWAYS INTO TEACHING?

Reviewing Australian and international literature has identified a range of conditions which support differing ITE pathways. These include considerations around: entry requirements into particular programs, ITE program mission, the quality of teacher educators, the need for in situ learning, the financial viability of particular pathways, and the provision of online education. Each will be explored in its own subsection.

### **Entry requirements**

Internationally and within Australia, requirements for entering teaching vary significantly. Within Australia, employment-based pathways require candidates to hold a relevant Bachelor degree (Weldon et al., 2013). Additionally, both Nexus and Teach for Australia market themselves as being 'selective' programs, screening applicants

both on previous academic achievement and their commitment to the program's mission. As a result of this screening, Teach for Australia (2021) recently reported that only 8% of applicants commenced teaching as an Associate. Nexus places particular emphasis on candidates' commitment to social justice (Lampert & Browne, 2022); commitment to social justice as a selection criterion.

There has been increasing interest in establishing national minimum requirements for entry into teacher education. Broadly speaking, these have included the Australian Tertiary Admissions Rank (ATAR), and a form of testing or screening for suitability. Published studies have shown that the ATAR can predict university success, though its strength weakens over the duration of university study (see for example Wyatt-Smith et al., 2021a).

An Australian first longitudinal investigation of progression through ITE drew on a dataset of linked performance of more than 2000 ITE candidates (Wyatt-Smith et al., 2021a, 2021b). The analysis showed that ATAR alone is insufficient for understanding performance trajectories. Demographic (age, gender, Indigeneity, prior education) and other entry characteristics (ATAR, basis of admission) were found to be significantly associated with degree completion amongst the undergraduate Bachelor of Education cohort (Wyatt-Smith et al., 2021a, 2021b). The key finding here is that there are several characteristics that explain performance trajectories; ATAR alone can neither predict nor explain the nature of ITE student trajectories (readers interested in further information are referred to Wyatt-Smith et al., 2021a).

### **Program philosophy or mission**

Some programs are also shaped by a mission which guides program design, partnerships for school-based placements, and candidate selection. For example, in Australia, the Nexus program (Lampert & Browne, 2022) and the National Exceptional Teachers for Disadvantaged Schools Programme (Burnett & Lampert, 2019, p. 43) are both aimed to create teachers committed to working in high poverty schools to improve educational equity. Such programs assert the value of community consultation to ensure training pathways are suited to stakeholder needs (Lampert, 2021) and place high value on teachers' non-cognitive attributes (e.g., understanding of and commitment to social justice, Lampert & Browne, 2022). In the United States, some residency programs are designed to recruit diverse teacher candidates and place them in schools with high minority populations. Programs may also adopt pedagogical approaches that help teachers break down assumptions about groups and reflexively consider their role in disrupting stereotypes and creating environments where diversity is normalised, celebrated, and valued (Rowan et al., 2021). Programs may also encourage the use of asset-based language (Luet & Shealey, 2018).

### **Quality teacher educators**

Preservice teachers require quality teachers to help them learn to be effective practitioners. Research-based academics and expert teachers in schools both play a role in HEI-based preparation. However, debates remain over what each group's contribution should be to a candidate's education (Cochran-Smith et al., 2020). Cochran-Smith et al. (2020) highlighted that how teacher educators are prepared to support preservice teachers is rarely examined, with their effectiveness seldom evaluated. They argued that commonly used measures of performance evaluation within higher education settings, such as research performance and/or student course evaluations, do not capture the important measure: the impact of teacher educators' teaching on their students' learning. Hence, within higher education, there is a need to reconsider how those preparing teachers are themselves supported to undertake this task and, in turn, how their efforts are evaluated.

*Using experienced teachers as teacher educators is not a panacea for improving ITE.*

Equal consideration is needed around how school-based mentor teachers are supported and evaluated. Gardiner (2011) highlighted that using experienced teachers as teacher educators is not a panacea. Teaching and mentoring adult learners how to teach is a unique skill set, related but different to their everyday classroom practice. Hence, those working in schools also need training and support to move from being an expert teacher to an effective teacher educator. The nature of the support these in-school teacher educators receive varies greatly by program and more work is needed to identify effective models of teacher educator training and ongoing support.

## Opportunities for in situ learning

Research indicates that candidates consider school-based learning vital to their teacher preparation, with many wanting even more opportunities than are provided via standard HEI-based teacher preparation (e.g., Mayer et al., 2015). Candidates may observe in classrooms, conduct small group work, engage in supervised classroom teaching, participate in extended internships or residencies, and undertake in paid roles within schools. Goldhaber et al.'s (2021) American research identified that schools may benefit from hosting practicum students. In their study, they found positive, significant relationships between schools/districts' hosting of preservice teachers and their ability to hire credentialled teachers. While arguing that a causal relationship between hosting students and being able to hire credentialled teachers cannot be assumed, they said the relationship merited further exploration.

*More work is needed to identify effective models of teacher educator training and ongoing support.*

The appropriate nature, sequencing and duration of in situ learning to support professional preparedness has been debated for over a century (Vick, 2006). While many advocate that more school-based learning experiences would be beneficial, logistics and funding can present challenges. For example, Chu (2022) reported about the difficulties experienced when one US state mandated an undergraduate teacher residency. They argued that the 'complexity' of residencies needed to be acknowledged; rushing the start of the program led to superficial implementation because stakeholders were not adequately prepared to change from placements to residencies. Ledger and Vidovich (2018) noted that "the variations in internships are under-researched and under-utilised within ITE programs and studies" (p. 25), highlighting the need to further understand how particular program characteristics around residencies and internships may lead to desired outcomes.

## Partnerships between schools and universities

Teacher preparation has traditionally necessitated partnerships between schools and ITE providers, both of which have important roles to play in a teacher's development (Jones et al., 2016). These partnerships have the potential to be rich sites for collaboration, creating what Hackett et al. (2021) described as a 'third space' between schools and universities where preservice teachers can develop their professional practice, blending research-based and theoretical knowledges gained from HEIs with practical knowledge gained within schools. Jones et al. (2016) established a framework that can help guide school-university partnerships, arguing there is a need to focus on developing such partnerships, representing partnerships practices, and enabling growth and innovation.

However, there are a number of tensions that exist in these working relationships. Some are financially driven, in part because schools and HEIs are generally overseen by separate government departments operating under differing funding models. How much teachers and schools should be remunerated for their time, expertise and mentoring of preservice teachers during school-based experiences continues to be debated. Curricular priorities can also diverge, with those in schools working to maximise learning within a particular context, and university preparation aiming to develop a repertoire of theoretical and practical knowledges and skills which can be adapted and applied in diverse school contexts.

*Partnerships between schools and universities have an important role to play in teacher development.*

While the balance of power within the relationship has more recently rested within HEIs, in some jurisdictions, schools and non-university providers are gaining more authority in teacher preparation. For example, during the last few decades, England's reforms allowed the creation of

SCITTS. In these organisational units, HEIs are no longer a required part of teacher preparation (Foster, 2019). Within the United States, new Graduate Schools of Education, some of which are for profit, allow students to gain qualifications without attending a university (Cochran-Smith et al., 2021). These renegotiated relationships between schools, HEIs, and other providers, are policy driven. Cochran-Smith and Reagan (2021) noted that:

“...no approach to teacher preparation evaluation is objective, no approach is apolitical, and no approach is innocent of questions about whose interests are served or undermined, whose perspectives are represented or omitted, and whose voices are included or excluded by the processes and results of particular evaluations. (p. 10) ”

### Cost of teacher preparation

Within Australia, the length of Bachelor of Education programs is four years of full-time study, making it potentially less attractive than the many degrees requiring only three years of full-time study (e.g., Business, Engineering, Nursing). The additional fourth year carries financial costs for the preservice teacher, including a foregone year of professional wages as well as the actual cost of the extra units of university study. To offset this opportunity cost, there are a growing number of financial incentives being offered, as discussed earlier in *Reviewing the Evidence Base: A Focus on Attracting Candidates*.

Financial costs of pathways into teaching differ, as do the way costs are shared between the preservice teacher, state and/or federal government, schools, and other stakeholders including philanthropies. One challenge is the need for coordination between schools and HEIs, with each usually operating under differing governance and funding models (Cochran-Smith et al., 2020).

Alternative programs based around residencies and/or internships have additional costs associated with lengthy placements in schools (e.g., support from an expert teacher, requiring financial

compensation and/or release from duties). These costs may be carried by the HEI, the school district hosting the resident (in exchange for several years of service within the district), or the government. For example, Berry et al. (2008b) noted the costs associated with the Urban Teacher Residency programs studied, including “upfront recruiting costs, preparation costs (which include financial support to Residents during their training year), induction costs, and the costs of running an effective program including coordination and communication among participants and partners” (p. 6). Guha et al. (2016) described the package offered to entice people to enter the San Francisco Residency Program and commit to teaching at least three years in district schools of need, including reduced tuition, \$18,000 in Americorp stipends, free health insurance, and a San Francisco housing subsidy (almost \$5000 per year).

Employment-based pathways have even higher associated costs (e.g., salary during the program, additional mentoring costs). Additionally, most employment-based programs do not charge the candidate for associated training or offer it at a reduced fee. In Australia, dandolopartners (2017) noted that the “TFA [Teach for Australia] program has a higher unit cost than other initial teacher education pathways” (p. 21), concluding that it is not feasible to increase intakes at this point, with recommendations that costs be more evenly shared between national and state governments. Currently heavily subsidised by the federal government and philanthropic donations, work is needed to establish sustainable long-term funding models for employment-based programs in Australia if they are to remain as pathways into teaching.

Globally, philanthropies are increasingly financing alternative ITE pathways, with Cochran-Smith et al. (2020) using the term ‘muscular philanthropy’ to describe the growing intervention of not-for-profit organisations in the field. For example, Weldon et al. (2013) reported that Teach First in the United Kingdom, an employment-based program, received about half of its budget from donations. Within the United States, philanthropic



groups are increasingly identified as having particular agendas (Cochran-Smith et al., 2020). For example, Lipman (2015) discussed the role of philanthropy in the Academy for Urban School Leadership (AUSL) program. AUSL was one of the first 'urban teacher residency' programs, but was also tied to a school takeover strategy, where management of underperforming schools was given to another agency.

If diverse pathways into teaching are valued, sustainable funding arrangements are needed rather than continued reliance on additional government and/or philanthropic support. Berry et al. (2008b) acknowledged that while the costs associated with the residency programs they studied were high, they argued that teacher attrition is also a major cost. They suggested that those data should also be considered when making decisions about investment in teacher training pathways, alongside evaluation about how other monies (e.g., professional development funds) may be better spent.

### ***Technology's role in teacher preparation***

Online learning has created new opportunities for teacher preparation. However, distance learning in teacher preparation is not new (Burns, 2011; Dymont & Downing, 2020). Australia has a long history of teachers learning via distance education, originally through written mail correspondence, then drawing on technologies such as radio and video. Online ITE is particularly convenient for candidates learning in situ in schools, providing synchronous and asynchronous opportunities for engagement with teaching staff and classmates without having to be physically present on a campus. This is particularly valuable for those completing study and/or placements in rural or regional areas. Technological tools embedded within these programs can help students build online communities and learn new skills which they can, in turn, use in their own classrooms (e.g., creating wikis or blogs, engaging in online discussion forums).

Online programs can also be scaled-up in ways that make them profitable. Cummings-Carney (2021) discussed how fully online forms of teacher preparation have the potential to offer convenient and cost-effective options for people wishing to become certified teachers such as the TEACH-NOW program, where preservice teachers with a Bachelor degree could complete a certification program in 9 months (\$6,000 USD) or a Master degree within a year (\$13,000 USD), both of which included a 12-week face-to-face clinical experience in a school. Founders argued "It could be standards-based and research-based and be low cost and highly efficient" (Cummings-Carney, 2021, p. 27), with TEACH-NOW reported as earning more than \$4,000,000 USD in revenue in 2016 at a 25% profit margin. This potential for profit is why technology-based edu-businesses are active new players in teacher education.

However, like any model, online learning in teacher education has its trade-offs. While some preservice teachers may easily form relationships online, others may feel less connected to their instructors and/or peers. A lack of connection can lead to decreased motivation and contribute to attrition. Online learning also generally requires more learner self-direction. Dymont and Downing's (2020) review identified there is limited research about student experiences of online ITE, meaning more research is required to understand the specific affordances and limitations from a student's perspective.

Despite the limited data about the impacts of conducting ITE online, the COVID-19 pandemic has led to increased reliance on online learning in all education sectors. Trainee teachers are entering schools characterised by teacher shortages and which have experienced temporary school closures during the past few years. Little is known about the short, medium, and long-term impacts of the rapid shifts to online learning in both compulsory and higher education. With the cooperation of regulatory authorities across the country, together with teacher educators in the GTPA Collective, a pipeline of some 3000+ preservice teachers were able to progress to graduation in 2021 (see provocation in Wyatt-Smith et al., 2021c; Wyatt-Smith et al., 2022).

## HOW DO DIFFERENT PATHWAYS INTO TEACHING CORRELATE WITH STUDENT SUCCESS AND TEACHER CAREER SATISFACTION?

There is growing interest in the impact of candidates' pathways into teaching on the academic success of their own students, as well as their job satisfaction. Evaluating the impact of graduate preparation pathways on school students' learning remains problematic. There are myriad contextual and demographic variables involved, many of which are difficult to control for within research (e.g., individual program differences related to mission, structure, and clientele; cultural contexts in which programs are embedded; educational policy landscapes, Ingvarson et al., 2014). To illustrate, many employment-based programs are post-graduate entry. Hence, such candidates are systematically different from ITE entrants coming straight from high school into Bachelor programs in relation to their age and previous career experiences. Employment-based programs typically place candidates in hard to staff schools which are known for higher teacher attrition rates. While distinctions have been drawn previously in this report between HEI and school-based pathways, within research, comparisons around pathway effectiveness are often broadly drawn between traditionally certified (i.e., standard HEI-based teacher education, e.g., 4 year BA or 2 year MA program), alternatively certified (e.g., fast-tracked teacher training programs, employment-based pathways), and/or uncertified teachers (e.g., those on emergency credentials, permission to teach; see for example, Clotfelter et al., 2007).

Teacher training pathway effectiveness can be measured in diverse ways. Much of the current research comparing ITE providers is based on new teachers' self-report data about their perceived readiness to teach (e.g., Mayer et al., 2015; Mohamed et al., 2017; Swabey et al., 2010) rather than measures such as observation of enacted teaching practice or student academic results. Another evaluative approach is to use results from a common assessment task

(such as TPAs) to compare ITE candidates from different programs. For example, in Australia, the GTPA and other TPAs used across multiple institutions could allow some comparisons to be made. A purposely designed test or assessment can also provide insight. For example, Norton and Zhang's (2018) comparative study of China and Australia used a common assessment of mathematics training, linking results back to ITE approaches in each country's institutions.

A minority of comparative studies examine student achievement data, often using value added measures. For example, Gansle et al. (2012) examined recent ITE graduates' impact on student achievement, comparing outcomes from different ITE providers/degree structures. However, such value-added measures remain controversial. Scholars including Darling-Hammond (2020) have raised questions about their validity and reliability, noting that they do not account for the non-random assignment of students to teachers within schools, nor the many contextual variables that can impact upon progress.

There are concerns about the extent to which current categorisations can facilitate research to identify best practice. Cochran-Smith et al. (2011) noted that "... studies are very sensitive to the ways categories of teacher certification are constructed; results shift depending on operating assumptions about similarities and differences between and among constructed groups" (p. 21). For example, Lincove et al. (2015) examined the diverse paths to teaching within Texas, where two thirds entered via alternative credentials. While they did find some small differences in effects by program type, they argued that these effects were generally small and not evenly spread amongst high-risk student groups. They concluded that "these findings suggest that policy makers should proceed with caution when advocating for expanding or limiting any



particular program type” (p. 431).

Research can also be taken out of context. Cochran-Smith and Reagan (2021) reviewed frameworks for evaluating teacher preparation. They argued that the focus on ‘what works’ in teacher preparation is often based on the false assumption that “teacher preparation evaluation can be objective, uniform, and decontextualized” (p. 31). There is also concern about the extent to which existing research can be generalised, with Bahr and Mellor (2016) arguing that the field 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” (p. 49). Lincove et al. (2015) also cautioned that most research ignores important variables, such as the performance of student subgroups (e.g., students in special education) and impact of school characteristics (e.g., high poverty schools, rural schools).

The following section reviews studies evaluating the effectiveness of traditional ITE, residencies and internships, school-based pathways, and employment-based pathways. It concludes by discussing research examining the effectiveness of uncertified teachers, then synthesising key insights on pathways’ effects.

### **Effectiveness of Higher education-based teacher education**

Research into higher education-based teacher education effectiveness is still an emerging field (Cochran-Smith et al., 2012). Over a decade ago, Cochran-Smith et al.’s (2011) review concluded that “we know relatively little about either teaching practice or retention as outcomes of teachers’ education” (p. 27). Within Australia, many authors have also noted the lack of robust evidence about ITE program effectiveness (Bahr & Mellor, 2016; Loudon, 2008). For example, Ingvarson et al.’s (2014) review concluded:

*We do not know which Australian programs are more effective. Teacher education in*

*Australia operates in a relatively evidence-free zone. This is not to imply any particular judgment about the quality of Australia’s teacher education system. (p. 44)*

Recognising that teachers are seldom fully formed upon graduation, Loudon (2008) highlighted the challenges in disaggregating variables relating to Australian ITE effectiveness. These include characteristics related to candidates themselves (e.g., past academic performance, motivation), structural and quality characteristics within university courses and practicum experiences (e.g., length and nature of practicum experiences, quality of teacher educators), and characteristics of the school contexts where new teachers begin their professional practice (e.g., level of student disadvantage, opportunities for mentorship).

### **Empirical data on higher education-based pathways**

Preparing teachers for Australian schools’ diverse contexts is also challenging. If teachers are underprepared to support diverse learners in a variety of contexts, this can have impacts on career satisfaction. Even within specialised programs, there can be slippage between candidate expectations and realities. For example, Lampert et al. (2012) found that despite the program focus on supporting student learning in high poverty contexts, some trainee teachers in the Exceptional Teachers for Disadvantaged Schools (ETDS) program were challenged by the realities of working in disadvantaged schools (e.g., low student literacy, poor student motivation). Teach for America and other Teach for All program candidates have also reported similar findings (e.g., Crawford-Garrett et al., 2021). While studies suggest that traditional HEI-based teacher education graduates generally have longer teaching careers (e.g., Chambers Mack et al. 2019; Redding & Smith, 2016; Zhang & Zeller, 2016) than those prepared via other pathways (e.g., employment-based pathways), the extent to which career satisfaction plays into teachers’ career decisions remains unknown.

*Research suggests that higher-education trained teachers generally remain teaching longer than those from other pathways.*

Within Australia, only limited research has been conducted examining higher education pathways. Mayer et al. (2015, 2017) completed a large longitudinal study examining how degree programs impacted initial teacher perceptions of preparedness. Their research suggested that degree length may matter, finding that those completing a 2-year Masters or 3-to-4-year Bachelor degree felt more prepared and effective than those from a 1-year Graduate Diploma (Mayer et al., 2017). The latter also had more difficulty obtaining permanent teaching positions. They used these data to argue that shortcuts in initial teacher preparation may negatively impact upon beginning teacher effectiveness, satisfaction, and employment stability. However, Ronfeldt's (2021) review of large-scale American studies found that while coursework completion did improve teacher perceptions of preparedness, it did not lead to higher student achievement as measured via value-added models. They concluded that "large-scale quantitative studies suggest that the quality, more than the quantity, of preparation makes a difference" (p. 20), suggesting that high quality clinical placements and opportunities for simulation and feedback within coursework were particularly vital to creating effective teachers.

Mayer et al. (2017) also foregrounded the need for ongoing support and mentorship once teachers have entered the workforce. They argue that "'classroom ready' is not the destination. Learning teaching is ongoing but nonlinear. It occurs across multiple spaces in messy and recursive ways" (p. 129). Their research also highlighted that initial working conditions also impacted on teacher perceptions of their training's effectiveness. Obtaining permanent, secure employment was important to early career teachers; lack of permanency contributed to early career mobility. Students who had completed

a practicum in a setting similar to their eventual employment site reported feeling more effective. However, having to teach outside of their area of specialisation decreased feelings of effectiveness. In the Australian context, the reported high numbers of out-of-field teachers was noted as a continuing concern and area for further investigation.

While students were generally positive about their ITE training, responses highlighted the importance of professional placements and the need for higher education programs to better convey links between theory and practice. Teachers were reported as wanting "more time spent in schools, more time on strategies for teaching and less theory" (Mayer et al., 2015, p. 16). The study found large differences between Australian ITE providers in relation to structure and length of professional placements, with only 28% including an internship, which Mayer et al. (2015) defined as a 6 week or more placement where the student taught classes under mentor teacher supervision. Ronfeldt's (2021) American review also noted the importance of high-quality placements. He described these as those that:

“ (1) are aligned with other program dimensions including coursework (program coherence); (2) occur in field placement schools with strong professional learning environments and that match employment schools on student demographics, school, and grade levels; and (3) include instructionally effective cooperating teachers who also provide high-quality coaching. (p. 20) ”

Mayer et al. (2017) found that while Australian graduate teachers judged themselves as more effective in understanding professional ethics and engaging with ongoing professional learning, they felt less effective in relation to classroom management, teaching culturally, linguistically, and socio-economically diverse learners; designing and implementing curriculum; pedagogy; and assessment, feedback and reporting

strategies. Despite reported differences in preparation, they found that “perceptions of preparedness were not often able to be causally linked with particular characteristics or dimensions of the teacher education programs” (Mayer et al., 2015, p. 125). They concluded that it was important to move away from trying to identify “single, best solutions, to complex problems” (p. 128) and to focus on simplifying entry and program content requirements to allow providers flexibility to support local needs.

Within Australia, various innovations have been trialled to improve HEI-based teacher preparation. For example, the National Exceptional Teachers for Disadvantaged Schools Program designed an ITE model to help Australia fill shortages in high poverty schools. While studies measuring graduating teachers’ effectiveness and satisfaction were not located, the program did report success at placing academically high performing candidates in low SES schools (i.e., 90% were offered jobs in such schools, Burnett & Lampert, 2019) so it may be possible for ITE programs to be designed to attract and train teachers to areas of high need.

### ***Effectiveness of residencies and internships***

The United States has the most evaluative work on the effects of extended teacher placements (e.g., internships, teacher residencies). Residencies, which generally focus on recruiting teachers to areas of need, provide more research on career retention, workforce diversification, and teacher effectiveness (e.g., Guha et al., 2016; Papay et al., 2012; Roegman et al., 2017).

Studies of individual residency programs provide some support for claims this pathway can lead to increased teacher retention, both within the profession and within the high needs districts which trained the resident (Guha et al., 2016; Keese et al., 2021). For example, Berry et al. (2008b) evaluated programs in Boston (Boston Teacher Residency, BTR) and Chicago (Academy for Urban School Leadership, AUSL), noting that high percentages of

graduates were still teaching three years after finishing the program (i.e., 90% of BTR graduates and 95% of AUSL graduates). While financial penalties deterred some from leaving, many also described collegial support and mentoring as a reason to stay. Papay et al.’s (2012) study on the BTR also confirmed teachers were more likely to remain teaching in Boston for at least five years than those entering from other pathways. Roegman et al.’s (2017) research on a smaller scale residency program that focused on special education and English as a Second Language also showed high retention and evidence that their teachers adopted an asset-based approach when working with these students. Guha et al.’s (2016) study of the San Francisco Teacher Residency (SFTR) program found program graduates had significantly higher five-year retention rates within the San Francisco Unified School District (80%), compared to beginning teachers (38%) and Teach for America corps members (20%), as well as higher retention within the field.

However, other studies have reported mixed results around retention. Matsko et al. (2022) found that university-prepared teachers had longer term plans to teach than residents. Silva et al.’s (2014) review of 12 residency programs did not find statistically significant differences in retention rates. Silva et al.’s (2015) extended study with six programs found school retention rates were similar between those prepared via residencies and other pathways but identified that residents were more likely to remain teaching in the district, although they may move from schools with high levels of need.

Residency programs also often aim to attract more diverse teachers than traditional ITE pathways. Papay et al. (2012) found that compared to other novice teachers, BTR teachers were more racially diverse and likely to teach maths and science. Both reviewed literature and empirical data from the SFTR program led Guha et al. (2016) to conclude that residencies could increase the diversity of people entering teaching and help recruit teachers to fill subject area shortages. However, while Silva et al. (2014) found residents were more likely to be career

changers than teachers entering via other pathways, they were otherwise demographically similar to teachers in other programs reviewed. Hence, data about workforce diversification via teacher residencies are mixed.

Residencies are also claimed to support teacher effectiveness. Results are mixed, with evidence mainly based on self-reported efficacy data. Silva et al. (2014) found residency teachers reported feeling more prepared and receiving more induction support during their first years of teaching from their preparation program. However, Matsko et al. (2022) reported traditional ITE candidates felt better prepared for the classroom than those in residency programs; they argued that the lower perceptions of preparedness from residency teachers may signal that this group had more realistic understandings of the job after their period of residency. Keese et al. (2021) reported teachers experienced a drop in confidence at the beginning of their one-year internship but regained much of this confidence due to mentoring and support received during the year. Guha et al. (2016) found both principals and students reported that San Francisco Teacher Residency teachers were more effective in the classroom than teachers trained via other pathways. Length of residency program may matter, with Mentzer et al. (2019) finding measurably better outcomes in relation to teacher confidence, preference for inquiry-based approaches to science, and perceived preparation to work with high needs students for those in the 1-year residency program culminating in a masters versus the fast-tracked program leading to a science teaching credential. Marshall et al. (2021) questioned how effectiveness should be measured, noting that stakeholder conceptions of success were broader than normal effectiveness measures (e.g., being able to learn from failure, learning to develop relationships and teacher presence, establishing work life balance).

In research which examined academic achievement, results were mixed. For example, Papay et al. (2012) drew on candidates with available value-added performance data to conclude that BTR teachers performed similarly to other novice

teachers in relation to student English results. In mathematics, after initially poorer results, BTR teachers improved quickly so that by teachers' 4th and 5th years, their students' maths performance was better than those of more experienced teachers within the district. When reviewing studies examining student achievement gains, Guha et al. (2016) noted that the small number of available studies, most of which adopted value added measures, tended to show positive results in relation to teacher effectiveness. However, they also noted the problematic nature of this kind of mathematical modelling at the individual teacher level as it can be quite unstable because of small sample sizes.

### ***Effectiveness of England's school-based approach***

As described earlier, England has taken a radically different approach to teacher preparation in the last few decades. Schools have the ability to create teacher training pathways leading to degrees if the school partners with a higher education institution. Whiting et al. (2018) concluded that "With a prevailing emphasis on choice and diversity in ITT [Initial Teacher Training] within the gathering momentum of a system in which the balance of control is moving from HEIs to schools, questions about quality are becoming difficult to answer" (p. 89). They noted that Ofsted reports are the usual measure of program effectiveness. However, due the sheer number of providers, many individual pathways and providers will not be evaluated within any given year, and they argued these reports reflect on the individual provider, not the pathway itself. In its most recent report, Ofsted (2021) noted that there were approximately 250 initial teacher education providers, covering 420 age phases. As only 36 age phase programs were evaluated in the report, they concluded that "the evidence base is too small to make any comment on the effectiveness by type of provider" (p. 81).

Evaluation of these reforms is mixed. For example, George and Maguire (2019) identified that reforms aimed at deregulating teacher education have led

to increased tensions between schools and universities which trainee teachers sometimes experience (e.g., teaching commitments and university training times clashing; disagreement between schools and ITE providers over 'best practice'). However, they did find evidence that alternative and often school-based pathways were enabling the recruitment of more diverse teachers.

### **Effectiveness of employment-based pathways**

While there has been relatively little evaluation of Australian employment-based pathways, overseas, there is more data about the effectiveness of this pathway.

#### **Teach for America**

The largest scale and longest established employment-based program is Teach for America (TFA). Anderson (2020) noted that "research detailing TFA's impact remains highly contested, and debates surrounding the organization often play out on largely ideological grounds" (p. 2). They identified that Teach for America had limited 'outsider' research of its programs, limiting transparency around data.

In relation to retention, most studies have indicated that Teach for America corps members leave the profession more quickly than certified teachers, with many only fulfilling their initial 2-year commitment to the profession (e.g., Gottfried & Straubhaar, 2015). Diverse reasons have been provided for this including: diverting to original career goals (e.g., Gottfried & Straubhaar, 2015), being attracted by more lucrative job offers (e.g., science careers versus science teaching, Donaldson & Johnson, 2010), and experiencing job dissatisfaction and burnout from difficult assignments, like many other novice teachers (Donaldson & Johnson, 2010). Donaldson and Johnson (2010) found that TFA corps members with more difficult assignments were more likely to transfer schools or leave the profession within their first year than other TFA teachers. Anderson (2020) used data about

the relatively short amount of time most remain in the classroom to argue that Teach for America should be called an educational leadership program instead of claiming to be a teacher workforce solution.

When examining teacher effectiveness, the field generally acknowledges that results are mixed (e.g., Penner, 2021; Weldon et al., 2013). Penner (2021) used 12 years of archival data to examine academic achievement in North Carolina, finding that Teach for America's effects on achievement improved over time in some subject areas and grade levels. However, in elementary school reading and high school algebra, TFA graduate members did not outperform other teachers. Xu et al. (2011) examined high school results in North Carolina, concluding that TFA teachers had a positive effect on students' test results relative to non-TFA teachers, arguing "such effects offset or exceed the impact of additional years of experience and are particularly strong in science" (p. 447).

One issue raised in relation to this body of research is around the nature of the comparison group. For example, Vasquez Heilig and Jez (2010) noted in their review that while Teach for America teachers performed, on average, as well as the other teachers working in their high poverty schools, staff in these sites were also much more likely to be novice or uncertified teachers. When results were compared to certified teachers, TFA corps members' students had lower achievement in mathematics and English. They argued that this finding suggests that Teach for America corps members are an acceptable solution when certified teachers are not available, but that they should not be viewed as equivalent to a qualified teacher.

#### **Teach for All Network**

Findings relating to Teach for America cannot be assumed to translate to other similar programs now offered in countries around the world as part of the Teach for All network. There are some concerns raised about the way Teach for America has been replicated in diverse international contexts. For example, Blumenreich and Gupta (2015)



discussed concerns about cultural context not being sufficiently accounted for in its implementation in India. Research into programs emulating its model, often aligned with the international Teach for All network, is still nascent.

### *Teach for Australia and Nexus*

Within Australia, the Teach for Australia program has now been in place for over a decade. During this time, there have been multiple external reviews of the program (e.g., Weldon et al., 2013; dandolopartners, 2017, 2021). To date, Teach for Australia's effectiveness has generally been measured via principal reports of candidate performance (e.g., dandolopartners, 2017), although future studies plan to examine additional measures of impact upon achievement (dandolopartners, 2021). Weldon et al. (2013) also included a student survey, where students were generally positive about their Teach for Australia teachers. In the initial program review (Weldon et al., 2013), principal perceptions of associates were generally positive. dandolopartners' (2017) recent review found most principals spoke favourably of their candidates' intellectual quality and leadership potential, reporting that more had reached proficient and highly proficient standards after their two-year placement than other beginning teachers (12% more being considered Proficient and 18% as Highly Proficient).

Some concerns have been raised about Teach for Australia teachers' quality in the first couple of terms, with the program being described as a "sink or swim" model (Weldon et al., 2013, p. 82). However, principals felt these teachers soon 'caught up' with expected beginner teacher performance and reported being willing to accept future candidates. Multiple studies acknowledged the pressure candidates experienced "due to their inexperience in the field and the complexity of the teacher's role" (Weldon et al., 2013, p. 83). Participants regularly identified the program as extremely demanding (Evangelinou-Yiannakis, 2019; Joseph, 2019). Eighty percent of dandolopartners' (2017) sample

reported it was hard to manage the approximately 60 hours a week of school and study commitments. However, Weldon et al. (2013) argued that the "majority of Associates not only cope but thrive in this kind of environment" (p. 83) due to support received from TFA, the university, and their schools. The authors concluded that "it is unclear whether this aspect [i.e., embarking on teaching prior to completing most of their training] of the Pathway is necessary, nor whether such high levels of stress, and the steep learning curves involved, are desirable, or necessary attractions for high achievers" (p. 83) as these features did detract from satisfaction. The Australian Nexus program attempts to remove some of this professional pressure by having teachers start work in paraprofessional roles. However, due to the program's recent inception and Covid-caused educational disruptions, formal evaluation of this pathway is yet to take place (dandolopartners, 2021). dandolopartners (2021) hypothesised that in relation to program completion, while Teach for Australia's "... intensity and workload is likely to drive some attrition... income constraints and personal circumstances may be driving attrition for Nexus" (p. 3).

Retention within Teach for Australia is not yet well understood. Teach for Australia's (2021) own alumni survey suggested that 92% continued to teach for a third year and 73% of alumni are still teaching, with 87% working somewhere in the education sector. However, response rate nor number of responses to this survey were provided, making it difficult to compare these data to overall teacher retention statistics. The initial program review (Weldon et al., 2013) did not include retention statistics. dandolopartners (2017) found that 21% of associates shifted from schools below the mean ICSEA to ones above it and "estimate that the average Associate spends 4.7 years teaching including their two-year placement, of which 3.2 years are in a school below the ICSEA national median" (p. 16). dandolopartners (2021) argued that retention is as good as or better than other ITE pathways, although data underpinning this conclusion were not provided.

Concerns are raised about Teach for

Australia's abilities to meet stated goals around reducing educational disadvantage with Skourdoumbis (2012) arguing that "TFA will not eradicate educational disadvantage; nor will it improve student learning outcomes" (p. 307) and that:

“ TFA offers simple answers to complex problems. In the process, it obscures and masks significant possibilities for action in terms of teacher training that builds for a sustained career in the classroom as a practising teacher. (p. 314) ”

Windsor's (2017) research with 10 Teach for Australia associates found that creating impact in high poverty schools was much more difficult than expected, consistent with findings from other small-scale studies (e.g., Joseph, 2019). Data from this study caused Windsor to "question the legitimacy of TFA's belief that parachuting high academic achievers into schools as teachers for a short time will achieve the vision to provide excellent education to "all children" (p. 501).

### **Effectiveness of uncertified teachers**

While mechanisms placing untrained people in the classroom exist and are increasingly drawn on to fill vacancies due to teacher shortage (e.g., Vanderburg & Fisher, 2023), there has been limited evaluation of these teachers as a standalone group. Uncertified teachers are unevenly distributed across schools. Within the United States, studies have long documented that uncertified teachers are usually located in schools with high proportions of students of colour (Cardichon et al., 2020) and/or which are urban or rural (Mobra, 2022). While uncredentialed teachers may be motivated to help children and can have plans to become credentialled, others enter the profession this way out of financial need or as a way to try teaching without fully committing to it (Mobra, 2022), meaning such candidates may be more prone to attrition (Zhang & Zeller, 2016).

Uncertified teachers are generally reported as less effective. For example, Clotfelter et al.'s (2007) study in North Carolina found negative effects for those entering via emergency credentials or lateral entry (i.e., those with a degree outside of education who teach while working towards a credential). They note that if lateral entrants persist, they become credentialled teachers and they become comparable to those entering with an ITE degree over time. Studies examining American principal perceptions of uncertified teachers also suggest that school leaders believe credentialled teachers perform better (e.g., Jones-Castro, 2021; Onstad, 2018). However, within music education, Martin (2018) suggested that uncertified musicians may be effective classroom music teachers; such people often have previous experiences teaching private instrumental music lessons and/or working with musicians in groups (e.g., choirs, bands, orchestras). Alternatively, others argue that it is important for music to be viewed as a legitimate curriculum area and staffed with credentialled teachers (Watson, 2017).



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