

Reviewing the Evidence Base: Attraction, Pathways and Retention

A Focus on Attracting Candidates



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What evidenced-based challenges for attracting candidates to school education careers can be identified?

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How are these being addressed in Australia and internationally?



Key points for orienting readers

1. Coordinated action across jurisdictions and agencies is essential to enhance the status of teaching as a career of choice
 - The status of teaching is a matter for coordinated attention across government at state and national levels, industry, higher education institutions (HEIs) and community groups.
 - Sectors and schools, particularly those in regional and remote areas, need to work with HEIs to attract and support candidates into teaching from within their own communities.
2. Attracting candidates into education studies, including teacher preparation, is not the same as attracting graduate teachers into the workforce
 - Current recruitment strategies include those that are 'policy borrowed' across countries and systems and others that have been applied in previous eras. New thinking is needed about attraction and efforts to improve the status of teaching, looking outside of schooling and education.
3. Workforce modelling
 - Efforts to develop national workforce data are underway. Improved workforce modelling in AISNSW could be used to inform recruitment strategies and address priority issues (e.g., graduates teaching out-of-field and workforce shortages).
4. Professionalising teacher education
 - Attracting candidates to teaching should be seen as a multi-dimensional challenge requiring integrated responses. These would include systematic approaches to mentoring and professional learning, financial remuneration, professional networks, wellbeing, and work-life balance.

INTRODUCTION: ATTRACTING CANDIDATES

This part of the report investigates strategies for attracting high quality and diverse candidates to school education. It responds to ongoing and emergent teacher supply issues that were present before and have intensified over the course of the COVID-19 pandemic (Cordingley & Crisp, 2020; Darling-Hammond et al., 2019; Ore & Hinchliffe, 2022). The discussion takes up two questions:

1. What evidence-based challenges for attracting candidates to school education careers can be identified?
2. How are these being addressed in Australia and internationally?

Within the Australian context and internationally, the crisis in the available teacher workforce is linked to the impact of structural issues in schools and from across teachers' career continuum that are impacting the health and wellbeing of teachers (Darling-Hammond et al., 2019; Ore & Hinchliffe, 2022).

These issues include work and administrative expectations, salary, student behaviour, and additional workload to cover teacher shortages. Internationally, few national or large-scale regional education systems are immune to issues of teacher supply in recent decades (Cordingley & Crisp, 2020); notable exceptions include Singapore, Finland and Ontario, Canada. Notwithstanding the sociocultural differences between countries, education systems with ongoing high teacher supply are typically high performing in relation to student learning outcomes, teachers' working conditions and status of the profession (Cordingley & Crisp, 2020; Gorard et al., 2021).

Within contemporary educational landscapes, the task of attracting high quality and diverse candidates to the teaching profession is a pervasive and persistent multi-dimensional problem. The review of literature that follows responds to the aforementioned two research questions.

WHAT EVIDENCE-BASED CHALLENGES FOR ATTRACTING CANDIDATES TO SCHOOL EDUCATION CAREERS CAN BE IDENTIFIED?

This section reviews national and international research and policy literature about challenges faced in attracting high quality and diverse school leavers and mid-career candidates to teaching. Issues included consider school location, gender, and cultural diversity which have been shown to influence teaching as a career of choice (Wyatt-Smith et al., 2017). Ten identified challenges to attracting candidates to teaching have been synthesised into three categories covering:

1. Barriers to engaging in teacher preparation
2. Barriers to entering teaching in schools
3. Structural factors in the Australian context.

Responsibilities in attracting candidates to teaching in schools

It is often erroneously assumed that attracting candidates to study teaching is the same as attracting teachers to employment in schools. Initial teaching education (ITE) and workforce data accessible in the Australian context allows for tracking trends in the conversion rates of ITE students into the teaching workforce (Australian Institute for Teacher and School Leadership [AITSL], 2020, 2021). National and international reports indicate that education students enter a range of occupations after teacher preparation, they do not all go on to enter teaching (for Australian data see Carroll et al., 2018). However, there is almost no evidence-based analysis of the reasons why ITE students do or do not enter teaching having completed teacher preparation. There is some evidence that some students use education studies as an avenue towards alternative career opportunities (Gorard et al., 2021). Anecdotally, claims are made that those

who do not receive positions are unsuited to the profession, yet there is little robust evidence to support this contention.

The available evidence points to there being a difference between attracting students to studying teaching and recruiting teachers into the profession. It highlights the importance of differentiating the processes and responsibilities of (1) attracting candidates to teacher preparation and (2) attracting candidates to teaching careers. These are two different phases in decision-making in relation to choosing a career in teaching. Further research is needed to understand the similarities, differences, and significance of these two decision-making moments.

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The research available about attracting candidates to teaching is largely focused on attracting students to teacher preparation, and sociocultural motivations and perceptions of candidates who have already self-selected into initial teacher preparation (Alexander et al., 2020; Carroll et al., 2018; Heffernan et al., 2019; Gorard et al., 2021). There is significant depth of empirical evidence about the intrinsic, extrinsic and altruistic motivations of preservice teachers across international jurisdictions (Brookhart & Freeman, 1992; Gore et al., 2015; Heinz, 2015; Watt et al., 2012). Intrinsic motivators are internal factors such as self-efficacy and interest in teaching, extrinsic motivators are external factors such as remuneration and holidays, and altruistic motivators are factors related to making a contribution to young people, society and social justice.

The most important motivators are intrinsic, based on self-efficacy and perceptions of personal suitability for teaching, and altruistic, to work with and contribute to the lives of children and young people (Alexander et al., 2020; Watt et al., 2012). Extrinsic motivations are shown to be relevant but less influential in decisions to choose teaching (Wyatt-Smith et al., 2017).

There is more limited literature focused on whether sufficient numbers of candidates enter teacher preparation to adequately meet ongoing workforce needs. In some contexts, education departments have assumed responsibility for limiting teacher preparation places to align with teaching workforce needs. In England, teacher preparation programs were capped using a 'Teacher Supply Model' (Noble-Rogers, 2020). Providers were expected to attract students to available places. Few teacher preparation providers were able to fill allocated places. In 2015, as an example, higher education programs filled 88% of their allocation whilst alternative non-academic school-based providers struggled to attract sufficient candidates. School Centred Initial Teacher Training (SCITT) providers fill 65% of places, salaried Schools Direct providers filled 70%, and Schools Direct fee-paying providers filled 54% of their allocated places (Noble-Rogers, 2020). Capping of places into teacher preparation programs has exacerbated the teacher supply problem in England and consequently the 'Teacher Supply Model' has recently been abandoned (Gorard et al., 2021; Noble-Rogers, 2020).

In the Australian context, places in teacher preparation programs are unrestricted. Responsibility for attracting students to study teaching sits with higher education providers that are active in marketing to potential education students. Over the years 1999-2015, student survey responses to the Graduate Destination Survey (GDS) showed that 74% of graduate teachers were working as teachers within six months of course completion (Carroll et al., 2018). However, a total of 43,404 GDS respondents who had commenced ITE, ostensibly with an intention to teach, had completed their studies and were working in occupations outside of teaching (Carroll

et al., 2018). If extrapolated directly from the mean survey response rate of 57%, the number of qualified teachers who did not enter teaching is greater than 76,000. This supports the contention that Australian teacher preparation programs, over this period (1999-2015), have been successfully attracting and preparing more teachers than have been required to meet workforce needs. Whilst there have been areas with ongoing teacher supply issues, such as STEM or teaching in rural and remote locations (Bennett, 2021; Burke & Buchanan, 2021), wide-ranging shortages where teacher preparation is unable to keep pace with demand is a relatively recent issue (Ore & Hinchliffe, 2022).

More large-scale work is required to understand the motivations and perceptions of newly qualified teachers as they transition from preparation to employment.

The responsibility for attracting qualified teachers to school careers sits with systems, sectors and schools. Whilst there is significant literature about attracting candidates to teacher preparation, described above, there is limited research and literature related to attracting qualified teachers to enter school-based careers. Most available literature relates to teachers already in the profession, and their motivations, perceptions and intentions to either remain in or leave the profession (Wyatt-Smith et al., 2017). More large-scale work is required to understand the motivations and perceptions of newly qualified teachers as they transition from preparation to employment.

Little is known about what might attract candidates to school teaching at the point of transitioning into the workplace. Data from some countries indicates that some well-qualified candidates may be being dissuaded from entering teaching (Sutcher et al., 2019). For example, in Berlin completion rates in five-year Masters' level teacher preparation are high, but nearly half of the graduates do not progress into employment reporting 'high stress levels

and workload' in teaching as their reasons (Cordingley & Crisp, 2020).

Further research is needed to understand motivations towards a teaching career at this critical transition from study to employment. This could provide for more effective strategies to attract qualified teachers into teaching. Given that the total population of working teachers in Australia was estimated as 270,000 in 2019 (Heffernan et al., 2019), the approximately 76,000 qualified teachers that did not enter teaching between 1999 and 2015 (Carroll et al., 2018) represent a substantive pool of potential candidates that might be attracted back to teaching in schools.

Barriers to engaging in teacher preparation

Given that teacher preparation is a widely recognised requirement for teaching in schools (Karras & Wolhuter, 2010), attracting candidates to teacher preparation is critical to the pipeline of candidates available for teaching in schools. Contextual factors that detract potential candidates or reduce the pool of entrants into teacher preparation have an impact on the availability of adequately prepared teachers ready for teaching in schools. Four barriers to increasing the attractiveness of teacher preparation for potential candidates have been identified as follows.

Barrier 1: Entry requirements for teacher preparation programs

Entry into teacher preparation is based on a combination of academic and non-academic factors (AITSL, 2022). Australian program standards for initial teacher education list minimum expectations for program entry that include: assessment of academic and non-academic components, minimum standards for literacy and numeracy, and required discipline-specific studies completed in Bachelor-level qualifications for second or subsequent-career applicants (AITSL, 2022, see Program Standard 3). Despite the presence of these national standards since 2012,

research into the impact of the standards and other measures for assuring quality teachers is in its infancy (Wyatt-Smith et al., 2021a, 2022).

Despite the national approach to professional and program standards, an additional layer of entry requirements is stipulated by most state-based regulators. The New South Wales Education Standards Authority (NESA) has: (1) minimum academic performance requirements of not less than three Band 5 HSC results, (2) a 'NSW ITE Non-Academic Selection Framework' (NESA, 2019), and (3) minimum 'Subject Content Knowledge Requirements' for applicants with a prior Bachelor-level qualification (NESA, 2018). Again, there is little to no evidence available related to the usefulness of these requirements for improving the quality and attractiveness of teaching.

Available data about program entrants in the Australian context indicates that the main targets of national standards and state-based additional requirements are only relevant to a small proportion of candidates (AITSL, 2020). About a quarter (26%) of entrants come directly from secondary schools. Of those, 66% enter on the basis of traditional academic matriculation as represented by an ATAR score (AITSL, 2020), that is 18% of all entrants. The other 74% of entrants follow pathways that include vocational education, mature-age entry and higher education.

Internationally, high performing systems with minimal teacher supply issues, including Singapore and Finland, have high entry standards linked to the attractiveness of teaching to high achieving candidates (Cordingley & Crisp, 2020; National Center on Education and the Economy [NCEE], 2021). However, systems with significant teacher supply issues experience challenges with setting high standards for entry to ITE. For example, as mentioned earlier, recent policy initiatives in England have discontinued the 'Teacher Supply Model' that inflated entry scores by limiting access, and literacy and numeracy testing as a requirement for entry to teacher preparation (Noble-Rogers, 2020). These barriers to entry have been removed

because they were disincentives to potential candidates in an era of teacher shortages.

It is argued that some Australian entry standards are also acting as disincentives to applying for entry to ITE. Requirements to complete non-academic selection tasks, some of which incur costs, could be reviewed. Analysis of their impact on completion rates of applications to teacher preparation and their relationship to quality outcomes would be helpful. However, the most significant challenge to attracting potential candidates is the content requirements for applicants with prior Bachelor-level qualifications. The main issue identified in applications is the match between an applicant's prior qualifications and discipline-specific study requirements (AITSL, 2022). While this is an issue nationally, the impact of this entry requirement is most significant in NSW with its additional detailed listing of content knowledge requirements (NESA, 2018). Failure to meet this entry requirement is the most common reason that postgraduate applicants are not offered a place.

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Current entry standards could be reviewed against the dataset from mid-career applicants to identify how the standards take account of prior professional and disciplinary expertise. Recognition of prior learning (RPL) could then be used to reduce the duration of teacher preparation for candidates that do meet specified content requirements.

Barrier 2: The duration and associated costs of teacher preparation

The minimum standard for ITE in Australia is four-years higher education, including two years of professional education studies (AITSL, 2022, see Program Standard 4). This typically translates to a four-year

undergraduate Bachelor-level ITE course, or a two-year postgraduate Masters-level ITE course after at least three-years of prior Bachelor-level studies. Accelerated models are offered that concentrate the required learning into shorter timeframes by increasing the number of semesters or terms available in a calendar year.

Across English-speaking countries, these minimum requirements are comparatively high; in New Zealand, the minimum quantity of learning or duration is one year less at each level (Teach NZ, n.d.), and in the UK and the US there are certification pathways that do not require any minimum ITE (Darling-Hammond et al., 2019; Noble-Rogers, 2020). Australian standards are more comparable to study expectations in Europe, where the Bologna reforms moved teacher education towards a Masters-only profession (Kuhlee, 2017; Leite et al., 2017). The challenge for some nations where this reform has been implemented is in hiring sufficient staff with doctoral qualifications to teach into and supervise Masters-level ITE.

The minimum study requirements for teacher education are not well understood in the community, particularly in relation to postgraduate expectations. A recent survey of young high achievers and mid-career professionals in Australia examining their interest in teaching and the impact of various incentives, identified that mid-career professionals had poor understanding of the amount of study required to qualify as a teacher. Two-thirds (67%) of mid-career respondents believed that teacher preparation could be completed in one year or less (Behavioural Economics Team of the Australian Government [BETA], 2022). Further, it was shown that shortening the course was as attractive as a \$20,000 increase in top salary for incentivising potential career-changers (BETA, 2022).

Other studies across different countries have identified that the costs associated with studying teaching are a significant consideration for undergraduate and postgraduate candidates (Podolsky et al., 2019; See et al., 2020b). Relevant costs considered by potential candidates include the loss of income whilst studying and the

opportunity cost of entering teaching rather than another profession. Diverse candidates with lower socio-economic backgrounds are most impacted by the costs of studying and are most likely not to choose teaching because of these immediate costs (Darling-Hammond et al., 2019; Podolsky et al., 2019; Roberts & Downes, 2020). Young candidates, particularly high achievers, are most likely to be attracted by bursaries or scholarships for studying teaching to meet their immediate financial needs (BETA, 2022; Gorard et al., 2021; Podolsky et al., 2019).

In contrast, mid-career professionals are more influenced by opportunity cost (BETA, 2022; Carroll et al., 2018). Opportunity cost is the cost in earning potential of choosing teaching rather than alternative occupations within a particular area, as in STEM occupations, or with similar levels of higher education, such as undergraduate or postgraduate study (Carroll et al., 2018). Carroll et al. (2018) demonstrates that in the first year after completing a Masters-level teaching qualification in any teaching area, females earned 7% more and males 10% more in non-teaching occupations. In dollar terms, female teachers were earning \$7,184 more and males \$16,631 in non-teaching occupations. Given the relatively flat salary trajectory in teaching as compared to other professions (Goss & Sonnemann, 2019), this opportunity cost increases over time. Mid-career changers, taking account of study and opportunity cost, are more likely to be attracted by financial packages that support their life-stage and family commitments through study and into their teaching career (BETA, 2022; Burke & Buchanan, 2021; Darling-Hammond et al., 2019).

Barrier 3: The perceived status of the teaching profession

Evidence from across international jurisdictions shows that high achieving students express greater interest in teaching in contexts where teaching is perceived as a high-status profession (Gorard et al., 2021; Goss & Sonnemann, 2019; Han et al. 2018; Pérez-Huber et al., 2018). High performing systems with higher levels of initial and

ongoing teacher education have fewer issues with teacher recruitment (Cordingley & Crisp, 2020). In these systems, greater interest in teaching as a career from high achieving students is generated by the perceptions of the status and intellectual challenge of teaching and this translates to more competition that, in turn, raises entry standards.

In contrast, teacher preparation in England has been systematically shifted from higher education to school-based certification courses over the last decade (Noble-Rogers, 2020; Universities UK, 2014). Between 2012-2015, government policy set and then met a target to move at least 50% of teacher preparation into schools (Parker, 2015; Universities UK, 2014). In the ensuing years, the change from university to school-based pathways appears to have had an impact on attraction and recruitment. Across 2017-2019, the only teaching areas where entry targets have been consistently met are for primary and history teachers (Noble-Rogers, 2020). Teaching areas within STEM have averaged 79% recruitment, with the average for Physics, the lowest, at 57%, followed by Computing at 68% (Noble-Rogers, 2020).

Another study into the motivations and interest of 4,469 undergraduates in English universities found that: (1) two-thirds of those who had considered teaching had subsequently rejected the idea; (2) students with lower educational and professional backgrounds, or who had entered university via alternative pathways, were more likely to apply for teaching; and (3) the higher achieving students were much less interested in teaching, and less likely to have applied for teaching (Gorard et al., 2021). Analysis showed that the 'desire for intellectual stimulation' was a strong predictor of potential candidates' decisions not to pursue teaching (Gorard et al., 2021). This points to negative perceptions of the academic rigour of teacher education and of the work of teachers.

In the case of England, the approach to fast-tracking candidates through school-based models of teacher preparation appears to have longer-term consequences on the capacity to attract high achievers

to careers in teaching (Gorard et al., 2021; Noble-Rogers, 2020). Evidence in the Australian context does not appear to follow this same pattern. Increasing the minimum ATAR requirement to 80 was the only incentive that did not significantly increase the attraction of high achievers to teaching (BETA, 2022). However, an important distinction must be made between modifying entry standards into, and modifying educational outcomes of, teacher preparation. In the Australian context, interest in alternative pathways for high achieving students, such as Teach for Australia, remains high. The opportunity to complete a Masters-level qualification is discussed as a significant attractor of this local version of the 'Teach for' program (Teach for Australia.org, 2022), further supporting the contention that maintaining higher education as a gatekeeper to teaching is a key strategy in attracting high-achieving school-leavers and mid-career candidates.

Barrier 4: Family and community influence

Both high achieving and diverse teacher candidates can be dissuaded from teaching as a career choice by perceptions held about teaching by family, community members and teachers (Wyatt-Smith et al., 2017). In a recent survey conducted into the perceptions of teaching held by the public in Australia, just 41% of respondents indicated that they would encourage family members to pursue teaching as a career (Heffernan et al., 2019). The reasons given for not recommending teaching included concerns about teacher wellbeing, administrative workload and salary, and the overall status of the profession. Other research shows however that salary is not a main detractor in the decision making of prospective teachers. A study by Wyatt-Smith et al. (2017) identified that the starting salary tends to be positively regarded by teachers, though the salary cap in place after several years of service is a reported concern. Career progression for teachers who want to stay in the classroom appear limited, though recognition schemes for teachers considered to be expert or highly accomplished have been developed

in recent years in Australia. Uptake of these schemes in regions and sectors also merits further investigation.

The reasons given for not recommending teaching included concerns about teacher wellbeing, administrative workload and salary, and the overall status of the profession.

Additionally, research in North America shows that familial expectations for high achieving students, and culturally diverse groups with high levels of engagement in higher education, can influence potential candidates away from choosing teaching (Marrun et al., 2021b; Pérez-Huber et al., 2018). Issues raised relate to the intellectual stimulation or rigour of teaching, and the relative prestige of, and respect for, teaching in comparison to other professions (Gorard et al., 2021; Han et al., 2018; Pérez-Huber et al., 2018). Potential candidates are also more likely to consider teaching as a career option if they have had experience with teachers 'like them' (Marrun et al., 2021a). Diversifying racial representation in the teaching workforce should be a priority through initiatives to encourage communities to support students into teaching (Marrun et al., 2021a; Pérez-Huber et al., 2018). This could be initiated in a range of ways while the students are in their secondary school years.

Internationally, the workforce is strongly biased towards white female teachers. In Australia, the Australian Teacher Workforce Data (ATWD) shows that 78% of registered teachers are female, 83% are Australian born, and just 1-2% identify as from Aboriginal or Torres Strait Island backgrounds (AITSL, 2021). This is comparable with international statistics of representation, particularly in relation to gender (Organisation for Economic Cooperation and Development [OECD], 2018). Evidence indicates that the gender gap in interest in teaching is established early in high school (Sikora, 2021). Analysis of opportunity costs revealed that 'relative returns in the labour market matter' (Carroll et al., 2018), that influence the opportunity

cost for males explains the widening gender gap in teaching. Very little is reported beyond the male-female binary.

In relation to cultural diversity, available data shows mixed patterns. In the USA, the number of teachers of colour has increased from 12% to 20% over the last 30 years (Carver-Thomas, 2018). Latinx and Asian American teachers have increased proportionally, whilst Native American and African American teachers have been in decline. By comparison, just over half of the student population are students of colour (Carver-Thomas, 2018; Davis, 2021). In Australia, Aboriginal and Torres Strait Islanders make up 5.5% of the student population. Changes in the numbers of indigenous teachers have been effectively negligible (AITSL, 2021). Information about the cultural diversity of Australia's teachers is illusive. Similar evidence of underrepresentation is evident when other factors, such as gender and disability, are considered (AITSL, 2021; Alexander et al., 2020; Wyatt-Smith et al., 2017).

For students from groups significantly underrepresented in teaching, issues are raised about institutional structures and community biases (Marrun et al., 2021b). More research is needed to understand and respond to the underrepresentation of diverse communities in teaching, particularly indigenous communities. Strategies that facilitate diverse candidates maintaining connections into their communities through teacher preparation and into the profession are needed to bolster family and community perceptions and to support the attractiveness of and success in choosing teaching for more diverse candidates.

Barriers to entering teaching in schools

Attracting teachers to schools during the transition from study to employment is a second significant phase in choosing teaching as a career. As described earlier, there are significant numbers of teachers who do not enter the profession despite completing ITE. Contextual factors relating

to workforce planning and the work and working conditions of teachers impact upon the attractiveness of teaching amongst other career choices available to education graduates. Three barriers to maintaining the pipeline of newly qualified teachers into the profession are discussed below.

Barrier 5: Placement experiences in schools and teaching

There is some evidence of candidates who commence and complete ITE studies with the intention to teach who subsequently do not proceed to teaching in schools (Sutcher et al., 2019). Where qualitative evidence is available, these potential candidates report that their experiences of schools and teaching during professional components of their preparation are influential in their motivations and decision to not pursue a career in schools (Cordingley & Crisp, 2020). For example, in Berlin where candidates are engaged in 18 months in-school preparation with formal induction after ITE, across 2015-2017 nearly half of candidates who complete the Masters program choose not to progress into a teaching career reporting 'high stress levels and workload' as their reasons for not doing so (Cordingley & Crisp, 2020).

Similar evidence of the impact of school experiences on decisions to enter the teaching profession is very limited in the Australian context. Current teacher shortfalls are intensifying teachers' workload issues and contributing to reports of alarming numbers of teachers intending to leave (Heffernan et al., 2019). This is having an impact into ITE as increasing numbers of preservice teachers are filling teaching positions under 'permission to teach' (PTT) or 'conditional accreditation' (CA) arrangements (Ore & Hinchliffe, 2022). Discussions with universities in the Graduate Teacher Performance Assessment (GTPA) Collective (n=19) have suggested that significant numbers of preservice teachers in 2022 are employed under PTT or CA arrangements, with many taking full-time teaching loads while completing ITE studies.

These early experiences of teaching have potential to impact preservice teachers'

perceptions of teaching and their longer-term career intentions. Unlike the example from Berlin, these arrangements represent a response to widely reported teacher workforce shortages, mentioned above, and are distinguished from formal professional experience requirements of ITE in Australia. According to Sutcher et al. (2019) there is a high risk that such short-term solutions to immediate problems of teacher shortage could have long-term consequences on teacher supply. In Australia, coordinated action is needed across jurisdictions and education agencies to investigate the benefits and limitations of CA and like arrangements on the motivations, perceptions and wellbeing of preservice teachers and how they influence longer-term career intentions. A large-scale longitudinal investigation across states and territories, bringing together school leaders, teacher educators in HEIs and policy personnel, is warranted.

Barrier 6: Casualisation in the early career phase

Studies focussing on incentives that might attract potential candidates to schools consistently find that securing permanent employment is a strong motivator for potential candidates (Burke & Buchanan, 2021; Darling-Hammond et al., 2019; Handal et al., 2018). In Australia, BETA's (2022) recent study of high-achievers and mid-career professionals found that: (1) for high achievers 'guaranteed ongoing employment was the second most attractive' factor behind a \$30,000 yearly scholarship, and (2) for mid-career professionals guaranteed ongoing employment, either in a nearby or other location, was the most attractive work or study factor. Evidence from England also shows that the ease of gaining secure employment is an identified predictor of prospective candidates' intentions to teach (Gorard et al., 2021).

Evidence of employment of teachers in their early career phase indicates that casualisation, short-term employment arrangements, and casual relief teaching are becoming more prevalent. ATWD (AITSL, 2021) reports significant casualisation of

the teaching workforce. Across the four states included, NSW being one of them, 66% of teachers were employed in ongoing, permanent employment (AITSL, 2021). The remaining teachers were categorised as: fixed term of more than one year (4%), fixed term of 1 year (15%), fixed term of less than a year (4%), and casual/relief (10%). The data does not specifically cover early career teachers, however, the distributions for age can be used as a close proxy. Here, the differences are significant. Teachers under 30 had the least secure employment with only 39% of teachers holding secure ongoing positions (AITSL, 2021). For comparison, 50-59 years old teachers are nearly twice as likely to be in secure ongoing employment at 76%.

Secure employment is important socially and economically as other life milestones are dependent upon being able to make plans based on secure income. This is particularly important in attracting mid-career professionals who have significant family and life commitments and are often leaving secure employment in other occupations to enter teaching (BETA, 2022; Burke & Buchanan, 2021). As has already been acknowledged, some education graduates may not intend to enter teaching, but failure to attain secure employment is another factor in prospective teachers' career choices at the end of preparation (Sutcher et al., 2019).

Further investigation of the implications of casualisation are warranted. This could examine workforce planning approaches at state, sector and regional levels in all phases of schooling and curriculum areas, identifying opportunities for reducing casualisation for recent graduates. This would also provide opportunity to examine induction practices at sector and school levels and identify recruitment strategies intended to attract candidates who are aligned with school and sector mission and community.

Barrier 7: Financial and career trajectory outcomes

Internationally, there is significant debate and some conflicting evidence about the impact of salary on attracting potential candidates to the profession, though it is generally agreed that higher teacher salaries are useful for attracting quality candidates (Darling-Hammond et al., 2019; Podolsky et al., 2019; See et al., 2020a). Despite the relatively high starting salaries of Australian teachers, choosing teaching carries an opportunity cost from the first year of employment for all graduates except females with a degree at Bachelor level (Carroll et al., 2018).

Analysis of 15-year-olds career expectations across OECD countries shows that teachers' salaries are influential in young people's intentions (Han et al., 2018). In England, while potential candidates identify salary as influential, salary is statistically not a predictor of intention to teach (Gorard et al., 2021). Furthermore, data from English teachers leaving school teaching indicates that they do so to move into occupations with less income (Noble-Rogers, 2020). Studies of candidates in Australia have shown that in comparison surveys of different type of incentives, increases in the top pay bracket is a significant attractor for both high achieving and mid-career professionals (BETA, 2022). However, most candidates significantly underestimate a teacher's starting salary in both England and Australia (BETA, 2022; Gorard et al., 2021).

Higher performing systems have strategies in place that provide career pathways for high-performing experienced teachers that combine reduced teaching loads with mentoring responsibilities for early career teachers.

It is likely that attractiveness of higher salaries is dependent upon context and economic factors and is particularly important in systems where teachers' pay is low (Darling-Hammond et al., 2019; Sutcher et al., 2019). It also appears that perceptions

are influenced by entertainment and social media that reflects teachers' salaries in the USA where teachers are classified as low-income earners and are paid up to 30% less than comparably educated professionals by mid-career (Darling-Hammond et al., 2019).

Apart from salary, a second career trajectory concern is the available career pathways towards expertise and promotion. Traditionally, teaching has a relatively flat trajectory with the core promotional pathway available being into leadership or administration (Darling-Hammond et al., 2019; Goss & Sonnemann, 2019). Internationally, higher performing systems have strategies in place that provide career pathways for high-performing experienced teachers that combine reduced teaching loads with mentoring responsibilities for early career teachers (Cordingley & Crisp, 2020; Van Nuland et al., 2020). These programs are shown to be twice effective; first, they provide pedagogical career pathways to keep quality teachers in teaching, and second, they provide support for early career teachers while also building awareness of potential career pathways (Van Nuland et al., 2020).

While the Australian Professional Standards for Teachers (APST) have been developed to articulate a pedagogical pathway of career stages for teachers (AITSL, 2011), the varied use of these across sectors and states and the perceptions of the public and candidates do not reflect the potential for career development (Heffernan et al., 2019). Concerns raised about the nature of teaching by students, and particularly high achieving students, who have rejected teaching relate to the intellectual stimulation of the task of teaching and year-on-year repetition of content (Gorard et al., 2021). While little is known about the impact of career stages and higher levels of registration or accreditation on teachers in the profession, even less is known about their impact on public perceptions and the attraction of potential candidates. Further investigation is needed, particularly in regard to strategies for harnessing these pedagogical career pathways in support of beginning and early career teachers.

Barrier 8: Influence of teachers

Teachers are in a unique position to influence potential candidates into or away from teaching. As described above, preservice teachers' experiences of teachers' working conditions and wellbeing through placement experiences have an impact on the career choices made in the transition from study to employment. However, there is also evidence that teachers are directly influencing prospective candidates away from teaching (Marrun et al., 2021a; Pérez-Huber et al., 2018). In research of school students' interest in teaching, students reported that, 'teachers often spoke about their work as teachers in uninspiring and even disparaging ways' (Marrun et al., 2021a), and that this was a discouragement to becoming a teacher.

In Australia, a recent survey of 2,444 Australian teachers found that, 56% of respondents indicated an intention or desire to leave the profession, and 53% reported that they would not recommend teaching as a career to others (Heffernan et al., 2019). Reasons reported included excessive workload (62% of explanatory comments), health and wellbeing (21%), meeting increasingly diverse and challenging student and family needs (20%), and non-teaching duties and external curriculum and assessment responsibilities or expectations (20%) (Heffernan et al., 2019). Other studies report similar findings, both nationally and internationally (AITSL, 2021; Sutcher et al., 2019; Van Nuland et al., 2020; Wyatt-Smith et al., 2017).

Across international studies, different school student cohorts report being actively dissuaded from entering teacher preparation. The reasons given by teachers to student were that they were either too under-prepared academically or achieving too highly (Marrun et al., 2021a; Pérez-Huber et al., 2018). There is also some evidence that teachers passively detract potential candidates. Deficit narratives surrounding racially diverse students negatively impacts the quality and rigour of the curriculum and outcomes offered to these students resulting in unpreparedness for university, including education studies leading to teaching (Marrun et al., 2021a,

2021b; Pérez-Huber et al., 2018). Additional work is needed to investigate challenges experienced by sub-cohorts of special interest who are seeking entry to teaching.

Structural factors in the Australian context

Internationally, Australia is unique in terms of its physical size and related population density and spread. Many countries report on hard-to-staff locations that include low-performing urban schools and schools in regional and rural locations (Carver-Thomas, 2018; Feng & Sass, 2017; Oyen & Schweinle, 2021; See et al., 2020b; Lampert et al., 2021). Few countries experience the high levels of remote schools found across all Australian states and territories (Roberts & Downes, 2020), with Canada and the United States being notable exceptions (Van Nuland et al., 2020). This creates specific challenges for Australian systems to simultaneously attract and retain teachers across highly intensified and diverse urban contexts and sparsely spread regional contexts.

Barrier 9: Urban-centric systems

Internationally, many educational systems are dealing with issues of uneven teacher supply that creates 'hard-to-staff' schools or curriculum areas (Darling-Hammond et al., 2019; Roberts & Downes, 2020; See et al., 2020b). These circumstances often lead to schools employing teachers on permits or waivers who have not completed teacher preparation (Darling-Hammond et al., 2019; Ore & Hinchliffe, 2022), or employing teachers out-of-field (Du Plessis, 2020; See et al., 2020b). For example, in England 52% of Physics teachers in affluent areas had relevant science qualifications in Physics, in contrast to just 17% of Physics teachers in poorer schools and those outside urban areas (See et al., 2020b). Recent policy initiatives have reorganised school districts to some effect, reducing the numbers of socially and economically disadvantaged 'hard-to-staff' schools in England (Noble-Rogers, 2020; See et al., 2020a). Given population spread in Australia, this type of approach would have limited effect.

Statistics about out-of-field teaching in Australia are similar to those reported elsewhere. 13% of maths, physics and chemistry teachers in Year 11 and 12 have less than one year of higher education in the subject, and the percentage of out-of-field teaching rises in lower year levels (Du Plessis, 2020; Weldon, 2016). Additionally, out-of-field teaching increases with distance from a metropolitan area. In Years 11-12, out-of-fielding teaching was reportedly 14% in metropolitan, 17% in regional and rural locations, and 24% in remote locations (Weldon, 2016). In Years 7-10, the figures are worse with 24%, 32% and 41% respectively (Weldon, 2016).

The strongest attractors for teachers considering a regional or remote location are (1) having experiences in similar locations, (2) growing up in similar locations, or (3) having family connections into the intended location.

Finding suitably qualified and experienced teachers for regional and remote schools in Australia is a perennial problem as demonstrated by the proliferation of out-of-field teaching. Statistically, candidates from regional and remote communities are underrepresented in ITE courses (AITSL, 2021; Roberts & Downes, 2020). This creates a need to attract urban teachers into regional and remote locations. However, evidence in the literature shows that strategies seeking transplant teachers to work in regional and remote areas have very limited success (Oyen & Schweinle, 2021). The reasons cited are most often associated with personal and social issues related to geographic isolation (Burke & Buchanan, 2021; Oyen & Schweinle, 2021). Additionally, the strongest attractors for qualified teachers considering a regional or remote location are (1) having experiences in similar locations, (2) growing up in similar locations, or (3) having family connections into the intended location (Handal et al., 2018; Oyen & Schweinle, 2021). Strategies need to identify, attract and support 'homegrown' teachers (Oyen & Schweinle, 2021; Roberts & Downes, 2020) gaining

access to teacher preparation within their own communities.

Barrier 10: Access and support for overseas-born teachers

In the Australian context, the ATWD showed that 17% of the teaching workforce were overseas-born teachers (AITSL, 2021). By comparison, 29% of the total Australian population and 33.6% of the working-age population are overseas-born (Australian Bureau of Statistics [ABS], 2021). Despite Australia's immigration policies that preference skilled migrants, overseas-born teachers are underrepresented in the teaching workforce.

Overseas teachers report difficulties in identifying the requirements they must meet for teaching in Australia (Datta Roy & Lavery, 2017). A review of information provided by Australian state-based regulators as well as departments and other sectors demonstrated that information is difficult to find and inconsistent. Also, the available information does not always consider the questions that overseas-born teachers might have in relation to living and working in schools in Australia (Datta Roy & Lavery, 2017). Three factors are shown to be barriers to overseas-born teachers entering the profession in Australia.

First, teachers' international qualifications may not meet Australian qualification standards for registration (AITSL, 2022). These requirements have traditionally excluded teachers from economically disadvantaged countries (Datta Roy & Lavery, 2017). However, recent changes to preference school-based pathways to certification in England and other parts of the United Kingdom have served to also exclude these teachers as well. Second, English language proficiency requirements can provide challenges for overseas teachers. All teachers from countries other than the United Kingdom, New Zealand, the United States, Canada and the Republic of Ireland, even those from English-speaking backgrounds, must pass international assessment of English language proficiency designed for non-English speakers (AITSL, 2022). Whilst it seems reasonable to

assess the proficiency of teachers from non-English speaking backgrounds, this is an unnecessary hurdle for many other potential teachers. Third, teachers who do gain employment report challenges with orienting to Australian environment, culture and educational systems particularly in

regional locations, and with gaining secure and permanent employment (Datta Roy & Lavery, 2017). Overseas-born teachers are significantly more likely to find employment in harder-to-staff regional, rural, and remote locations (Burke & Buchanan, 2021).

HOW ARE THESE BEING ADDRESSED IN AUSTRALIA AND INTERNATIONALLY?

Evidence from the literature relevant to strategies for attracting candidates to school teaching are considered in this section of the review. National and international research and policy literature are used to: (1) identify strategies that have been recommended, and (2) assess evidence of effectiveness. The discussion takes account of Australian contextual issues, including regulations, school location, gender and cultural diversity. Prior to reviewing the range of strategies identified in the literature, three strategies commonly applied in the Australian context are considered.

Efforts to respond to the undersupply of suitably qualified, quality teachers are often focussed on the attraction or recruitment of candidates into teacher preparation. The two most common strategies are to (1) develop campaigns to promote teaching as a career choice, and (2) provide a range of financial incentives to support potential candidates to engage in initial teacher preparation (Ore & Hinchliffe, 2022; Goss & Sonnemann, 2019; See et al., 2020b). A third strategy focusses on accelerating candidates into employment by shortening the duration of teacher preparation.

These strategies are also commonly found in political and policy directions across international jurisdictions. Yet, available

evidence about their effectiveness for attracting candidates into the workforce is either very limited, or in the case of financial incentives is mixed in relation to how effectively the strategy attracts candidates into school teaching (Gorard et al., 2021; Noble-Rogers, 2020; See et al., 2020b). The prevalence and assumed effectiveness of these strategies appears to be bolstered by 'policy borrowing' (Kuhlee, 2017) that results in practices carrying across international borders without evidence of effectiveness.

Two policy initiatives for attracting candidates to teacher preparation have been taken recently. First, federal and state government bodies involved in the regulation of teaching identify strategic goals to 'promote the teaching profession' (Queensland College of Teachers, 2022), and 'develop and implement a strategy to affirm the status of the teaching profession' (AITSL, n.d.). Second, the newly elected federal Labor government included incentivising teaching through provision of \$10,000 bursaries for 5000 high-achieving school leavers and 1500 career changers from other professions (Ore & Hinchliffe, 2022).

Research and literature used in developing campaigns to promote teaching as a career of choice is largely focused on attracting candidates to teacher preparation using

sociocultural motivations and perceptions of candidates who have already self-selected into teacher preparation (Alexander et al., 2020; Carroll et al., 2018; Heffernan et al., 2019; Gorard et al., 2021). As mentioned earlier, there is some empirical evidence about the intrinsic, extrinsic and altruistic motivations of preservice teachers across diverse international jurisdictions (Brookhart & Freeman, 1992; Gore et al., 2015; Heinz, 2015; Watt et al., 2012; Wyatt-Smith et al., 2017).

Research highlights key differences in motivations and perceptions of candidates from different political and personal demographics, and the need to develop nuanced campaigns that take account of diverse needs in the teaching workforce.

Intrinsic, extrinsic and altruistic motivations are all important to attracting and retaining teachers, but intrinsic perceptions of self-efficacy and interest coupled with altruistic dispositions are critical to attracting candidates with long-term commitments to the profession (See et al., 2020b). Research highlights key differences in motivations and perceptions of candidates from different political and personal demographics (Alexander et al., 2020), and the need to develop nuanced campaigns that take account of diverse needs in the teaching workforce (Wyatt-Smith et al., 2017). Despite the body of work related to understanding motivations for teaching, there is very little research about campaign strategies that have been informed by this research to achieve more targeted attraction of teaching to prospective candidates, particularly in relation to sub-cohorts of special interest. The effectiveness and impact of promotional strategies is an area that has tended to be overlooked in ITE recruitment.

The use of financial incentives to attract candidates to teacher preparation is another long-standing and consistent strategy used in response to issues of teacher supply (Hyams, 1979; Noble-Rogers, 2020; Ore & Hinchliffe, 2022; See et al.,

2020a, 2020b). Emerging evidence from England demonstrates that bursaries alone do not attract candidates into employment in schools. Recent initiatives in England have provided differentiated bursaries for studying teaching with higher monetary values assigned to areas of teacher shortage as a means of increasing teacher supply in areas of need. Overall, government data showed that 25% of candidates who received a bursary at any monetary level did not progress into the profession (Vaughan, 2019, as cited in Noble-Rogers, 2020). Furthermore, 'graduates receiving the maximum bursaries were twice as likely not to enter teaching as those who received no bursary at all' (Noble-Rogers, 2020). The analysis showed that a significant portion of the candidates who received the highest monetary bursaries in the areas of greatest teacher shortage were using the scheme to access subsidised higher education without necessarily having an intention to proceed into teaching.

Employment outcomes from stratified bursaries used in England showed that financial incentives are insufficient for attracting candidates to school teaching. Analysis identified that smaller bursaries provided across all teaching areas may be more effective (Noble-Rogers, 2020). Other studies lend further support in showing that financial incentives might have positive impact on attracting candidates to study teaching. However, they do not necessarily have an impact on attracting qualified candidates to the profession and retaining them in the profession (Gorard et al., 2021; See et al., 2020b). The evidence indicates that financial incentives into teacher preparation, as is suggested with the current bursaries in Australia, does not guarantee that students will progress to teach in schools.

The third identified strategy, accelerating candidates into employment, is the most consistent historical policy initiative used in the Australian context (Hyams, 1979; Gardiner, 2004; Turner, 1943). Evidence of teacher supply issues in Australia date back to 1853 when the training of local teachers was first proposed. Since that time, there has been a consistent under-supply of teachers in at least some locations or in

some teaching areas. There have also been points of national teacher supply crisis that followed social or economic upheavals; including the depression of the 1890s, World War 1, the Great Depression, World War 2, and the arrival of baby boomer generation (Hyams, 1979; Gardiner, 2004; Turner, 1943). At each of these crisis points, government policy responses have always sought to shorten, or in some cases, remove teacher preparation requirements (Hyams, 1979; Garden, 1982; Gardiner, 2004).

Importantly, social and economic upheaval in the wake of the COVID-19 pandemic is somewhat reflective of circumstances surrounding the identified historic events. Similar considerations of the duration of teacher preparation have surfaced, though the minimum requirements of the national program standards (AITSL, 2022), limit the shortening of teacher preparation. However, as discussed earlier, sectors and schools are effectively shortening the duration of teacher preparation by employing preservice teachers prior to the completion of their qualification (Ore & Hinchliffe, 2022). This is a strategy with some risk to longer term retention data. PTT and CA mechanisms for employing preservice teachers are currently not standardised across Australian states and territories. Further, little is known about the experiences of provisionally accredited teachers and the impact of locally enacted arrangements to the current workforce shortage. More specifically, program accreditation arrangements will need to be reviewed in the cases of those candidates who are undertaking paid employment in a school and have not met all program requirements, including the completion of a Teaching Performance Assessment (TPA) and the Literacy and Numeracy Test Initial Teacher Education (LANTITE).

The discussion that follows synthesises key opportunities and threats to various categories of incentives that could be offered to candidates to undertake teacher preparation and enter the teaching workforce. These are used as organisers for the discussion and have been drawn from scholarly writing. It should be noted that this discussion does not consider the

longer-term question of the impact of these strategies on retention.

Financial incentives

Financial incentives are the most consistently used and reviewed strategies in relation to attracting teachers to prepare for and teach in schools. Using a systematic analysis of international quantitative studies, See et al. (2020b) identified that financial incentives do attract teachers to schools, but the effect was stronger in high-performing schools with higher-performing students and to better staffed teaching areas. It was also found that the incentives had to be substantial to effectively compete with compensation available in other occupations, particularly in hard-to-staff teaching areas, such as STEM (Feng & Sass, 2017; Lampert et al., 2021; See et al., 2020b).

Survey research of the perceptions of potential candidates, teachers and the public also show that financial incentives score highly for attracting candidates. This was evidenced across a full range of demographics, though different incentives are more or less attractive to different cohorts of candidates (BETA, 2022). For example, professional mid-career changers are more attracted by housing, mortgage support and childcare in comparison to school leavers who are more attracted to the immediate benefits of scholarships or bursaries (Burke & Buchanan, 2021; Podolsky et al., 2019; See et al., 2020a). The demographic that is most positively impacted by financial incentives is female school-leavers (See et al., 2020b). This may be attributable to the lower opportunity cost of teaching for this demographic (Carroll et al., 2018) that reduces the size of the incentive needed.

Financial incentives need to reach beyond teacher preparation to contribute to the attractiveness of teaching after qualifying. International evidence shows that bursaries or scholarships alone may be attracting students to higher education rather than candidates to teaching (Gorard et al., 2021; See et al., 2020b). Traditional strategies for attracting to teaching have indentured

candidates to years of service as a condition of accepting financial incentives for teacher preparation (Hyams, 1979). In the Australian context, the required service is typically allocated in regional or remote locations (Burke & Buchanan, 2021; Hyams, 1979). This strategy has been criticised because of the potential for some struggling candidates remaining in the workforce, often in 'hard-to-staff' locations, with limited other supports (Burke & Buchanan, 2021; Darling-Hammond et al., 2019; Handal et al., 2018).

More contemporary strategies take account of this problem by providing options for candidates at the point of entry to teaching. In the USA, 'loan forgiveness programs' are used to financially incentivise candidates into studying to teach and then into entering the profession (Darling-Hammond et al., 2019; Feng & Sass, 2017; Smith, 2021). These programs provide loans with modest interest rates for studying, similar to the monetary value of bursary or scholarship programs, but with an option of loan forgiveness for subsequent years of teaching service (Smith, 2021). These programs are no more expensive than bursary programs, but with an added incentive to enter teaching. Evidence from these programs indicates that the conversion rates into teaching in schools are better than those from bursary or scholarship programs (Darling-Hammond et al., 2019; Noble-Rogers, 2020).

Another often-recommended strategy for attracting teachers into schools is to make teaching more financially attractive by increasing teachers' salaries. Analysis of teaching workforce data and perceptions of candidates across international studies demonstrates that increases in teachers' pay is related to interest in entering teaching (BETA, 2022; Gorard et al., 2021; See et al., 2020a, 2020b). However, reducing the opportunity cost of teaching and meeting comparative remuneration in the labour market would require a substantive increase in workforce costs (Carroll et al., 2018; See et al., 2020b).

Other means to make teaching more financially attractive is to value-add to teachers' salaries with other benefits. This strategy is most frequently used to

incentivise teachers into hard-to-staff schools, including regional and remote communities as well as low-performing schools in urban areas (Burke & Buchanan, 2021; Darling-Hammond et al., 2019; Handal et al., 2018; Oyen & Schweinle, 2021). Strategies include providing support for moving, housing subsidies, provision of vehicles, mortgage support, child-care support and bonuses for service to harder-to-staff locations or teaching areas. These may be provided on a pro-rata basis depending on location or proportion of service and sometimes increase with length of service. Evidence shows that these strategies are differentially supportive in attracting teachers only when the incentive offered aligns with the life-needs of candidates, and only as long as the incentive is available (Burke & Buchanan, 2021; Feng & Sass, 2017; See et al., 2020b).

In relation to financial incentives, the strategy with the least available information and evidence of effectiveness in attracting candidates was the provision of financial support to engage preservice teachers in professional experience placements. These strategies often have a dual purpose of financially supporting candidates to complete placement requirements and to encourage them to consider and apply for work in the harder-to-staff locations that are incentivised. Whilst there is some qualitative evidence that these types of experiences are positive for students (Handal et al., 2018), there is limited to no evidence about the longer-term impact of these experiences on candidates taking up teaching positions in these locations. This may be in part due to the difficulties with tracing the influence of these experiences over the time between placement and entry to teaching.

Early engagement incentives

Studies of young peoples' career interests across high school and into university people report fluctuating evidence of young people interested in or considering a career in teaching (Gorard et al., 2021; Marrun et al., 2021a; Sikora, 2021). The same proportion of young people report considering teaching

at ages 16, 23 and 26, but with a 50% turnover at each reporting period (Sikora, 2021). The overall proportion of young people who have considered teaching is significantly greater than the numbers identified at any single point. Consequently, strategies that provide experiences supportive of teaching as a career option across the years of secondary schooling and into undergraduate studies are needed to capture interest at different times for different potential candidates.

In the USA, Cadet programs involve potential candidates in activities that develop skills and dispositions for teaching during secondary school. These programs involve university-level studies within a school-based teaching academy that also involves high school students in peer teaching and learning experiences (Darling-Hammond et al., 2019). The North Carolina Teacher Cadet program has run for over 30 years with over 65,000 secondary school participants. Over 35% of participants indicate they intend to pursue teaching and 20% go on to qualify as a teacher out of school (Riley Institute, n.d.). Important to this strategy are the design features that engage a wide range of secondary school students, including across culture and gender, to initiate interest from diverse candidates by harnessing intrinsic and altruistic motivations known to be critical to long-term commitment to teaching (Wyatt-Smith et al., 2017).

Smaller initiatives of this kind can be found in the Australian context, including secondary school work experience programs with children and young people, targeted early offers to university through school partnerships, and early participation in ITE units with some universities and private HEI providers as part of senior studies. The latter is often associated with a guaranteed offer of a place into a teaching course. There is, however, no available evidence about the effectiveness of these Australian programs as they are generally very niche, connected to a single institution and their targeted demographic areas, and have not been the subject of sustained, systematic investigation.

Employment incentives

Internationally, strategies that employ early multi-stage hiring processes, particularly over a final placement or internship experience, have had positive outcomes (Carver-Thomas, 2018; Darling-Hammond et al., 2019; Podolsky et al., 2019; Van Nuland et al., 2020). Multi-stage hiring strategies involve some combination of applications, interviews, lesson observations, internships, and data to action planning and problem-solving tasks (Van Nuland et al., 2020). This provides schools and candidates with confidence about the suitability of prospective teachers. Early hiring ensures that new teachers are employed prior to the end of the preceding school year (Carver-Thomas, 2018). This provides assurance of employment to prospective candidate and has been shown to effectively secure in-demand teachers, including high achieving and diverse candidates (Carver-Thomas, 2018; Podolsky et al., 2019).

Other employment incentives that have been shown to have some success include providing guaranteed transfer options to high demand schools or locations after a period of service in harder-to-staff locations. Within Australia and specifically NSW, Burke and Buchanan's (2021) study of 5911 teachers and teaching candidates has shown that 'guaranteed priority transfer after 2 years' is the only incentive sufficient to attract teachers to very remote school locations. For attracting teachers to regional areas, guaranteed transfers and ongoing permanent employment combined were the most attractive (Burke & Buchanan, 2021). Whilst transfer options are shown to be attractive to potential candidates, they perpetuate continuous teacher supply and recruitment issues in regional and remote locations given that the attraction is an option to leave (Burke & Buchanan, 2021; Van Nuland et al., 2020). This typically results in greater numbers of new and inexperienced teachers being concentrated in these areas intensifying the educational disadvantage of geographic isolation (Handal et al., 2018; Oyen & Schweinle, 2021).

Working conditions incentives

A direct relationship between working conditions and attracting candidates is difficult to establish; it is often discussed but rarely evidenced. However, an indirect relationship can be established. Evidence demonstrates that teachers' perceptions have an impact at two key points in potential candidates' choosing teaching, during high school and professional placements. Contemporary survey data in Australia shows that current workload issues reported by teachers and school leaders (Ore & Hinchliffe, 2022), which are the experience of current school students and preservice teachers, are reflected in the public perception of teaching and are reported as significant detractors (Heffernan et al., 2019).

Significant work needs to be done to put strategies in place to redress the current administrative workload crisis. Strategies that are recommended in the literature include: improving the leadership and culture in schools to ensure they are supportive of positive teacher wellbeing, shifting administrative and accountability burdens, and reducing teaching load through fewer contact hours or smaller class sizes to make room for contemporary curriculum and assessment accountability needs (Lampert et al., 2021; Podolsky et al., 2019). These strategies are typically associated with teacher retention efforts. However, the indirect impact of improved teacher satisfaction and wellbeing are related to the perceptions of the public and potential teaching candidates (Heffernan et al., 2019; Gorard et al., 2021; Marrun et al., 2021a).

Strategies that support professionalism as core to the working conditions of teachers have also been shown to be attractive, particularly for high achievers and mid-career professionals (BETA, 2022; Goss & Sonnemann, 2019; Lampert et al., 2021). Such strategies include professional collaboration and collegiality that recognises teachers' expertise in pedagogical decision-making in schools (Darling-Hammond et al., 2019; Cordingley & Crisp, 2020), and pedagogical career pathways as alternatives to traditional

advancement into leadership and administration (Carver-Thomas, 2018; Goss & Sonnemann, 2019; Van Nuland et al., 2020). These strategies support perceptions of respect and status for teachers and of the intellectual challenge of teaching.

Professional learning incentives

As with working conditions, evidence of the impact of professional learning on attracting candidates to teaching is problematic for several reasons. In part, this relates to timing. Unlike financial incentives that can be offered as an immediate inducement, professional learning is a longer-term, promissory incentive (Darling-Hammond et al., 2019; Burke & Buchanan, 2021). Another issue is the collocation of professional learning within a package of initiatives. The individual impact of any one part of the program is therefore difficult to measure (See et al., 2020a). Despite this, strategies that focus on professional learning and that take account of quality teaching and learning across the career lifespan of the teacher, are considered attractors to studying teaching and to teaching in schools (Cordingley & Crisp, 2020; Carver-Thomas, 2018; Darling-Hammond et al., 2019; Lampert et al., 2021; Van Nuland et al., 2020).

It has been shown that attracting high-achieving and mid-career candidates is dependent upon perceptions of teaching as an intellectually challenging career supported by clear and overt links to quality professional learning.

Available evidence points to the importance of quality initial and continuing professional learning as significant to perceptions of teaching as a high-quality profession (Darling-Hammond et al., 2019; Lampert et al., 2021). It has been shown that attracting high-quality candidates from both high school and mid-career is dependent upon potential candidates holding perceptions of teaching as an intellectually challenging career (Gorard et al., 2021), and these

perceptions are supported by clear and overt links to quality professional learning (Cordingley & Crisp, 2020; Darling-Hammond et al., 2019; Van Nuland et al., 2020).

In contexts such as England, where non-academic alternative pathways exist, there is some evidence that such pathways act as disincentives for high-quality candidates (Gorard et al., 2021). In the USA, discussions of alternative pathways describe minimum teacher education standards necessary to assure the quality of graduates and student learning outcomes against standardised assessments and value-added models for evaluating teacher performance (Carver-Thomas, 2018; Darling-Hammond et al., 2019; Podolsky et al., 2019). The list of conditions for quality teacher preparation that attracts quality entrants and produces quality graduates include: minimum levels of higher education, minimum pedagogical studies related to teaching areas and year levels, minimum professional placement, and the use of standards-based performance assessments, such as edTPA (Darling-Hammond et al., 2019; Podolsky et al., 2019).

The majority of these minimum teacher preparation requirements for attracting quality candidates are already embedded in the Australian context. Readers are referred to AITSL's (2022) program standards that list requirements for four-years higher education with a minimum of two-years professional studies including minimum teaching area requirements, placement of 60 or 80 days for undergraduate and postgraduate respectively, and successful completion of a teaching performance assessment, such as the GTPA. By international comparisons, these minimum standards of initial teacher education are well placed to attract high-quality candidates (Cordingley & Crisp, 2020; Darling-Hammond et al., 2019).

The only area where the Australian standards do not meet the minimum identified in the USA studies is professional experience placement (AITSL, 2022; Darling-Hammond et al., 2019; Podolsky et al., 2019). The USA studies recommends at least 30 weeks of professional placement

(Darling-Hammond et al., 2019). Apart from these strengths in Australia's ITE standards, a range of additional strategies for attracting high-quality candidates can be identified in relation to professional learning across the teachers' lifespan.

First, screening of entrants in the Australian context may be deterring potential quality candidates. Available evidence shows that higher entry expectations do not necessarily attract higher achievers (BETA, 2022). Furthermore, mandatory literacy and numeracy testing in England was shown to be a disincentive for some candidates (Gorard et al., 2021; Noble-Rogers, 2020). However, there is also strong statistical evidence from Chile that identifying the right combination of general academic standards and non-academic dispositions works to promote higher levels of conversion from teacher preparation studies to employment (Neilson et al., 2022). Yet, in NSW, the reviewing of postgraduate candidates' specific, prior content studies is screening out mid-career candidates with relevant academic standards and professional life experience, including those who have demonstrated interest in, and dispositions towards, teaching by applying to an ITE course. Given that international evidence points to the positive contribution that a diverse range of professionals can contribute to the teaching profession (Carver-Thomas, 2018; Marrun et al., 2021a), this situation is a cause for concern that warrants further investigation.

Second, strategies for diversifying teacher preparation in the Australian context may support attracting a greater diversity of teachers. Within the standards and expectations of Australian legislation and policy, hybrid models of teacher preparation grounded in shared accountability amongst higher education and school sectors may support the engagement of a range of different candidates that are not captured by current programs. Hybrid strategies move beyond the discourse of partnerships and related theory-practice binaries to develop hybrid models that see the academic and professional practice components of teacher preparation as fully immersive and integrative aspects of mutual benefit to the preparation of high-quality

beginning teachers. Two strategies already present in the international context could be hybridised for the Australian context; these are 'grow your own' (Darling-Hammond et al., 2019; Gist et al., 2019), and 'teacher residency' programs (Carver-Thomas, 2018; Podolsky et al., 2019).

There is significant potential for the development of purpose-built programs to support 'homegrown' candidates to meet the teaching and learning needs of schools across regional, rural and remote communities.

'Grow Your Own' programs typically identify under-represented cohorts of potential candidates to engage in teacher preparation through active recruitment within local school communities, particularly in hard-to-staff locations (Gist et al., 2019). Cadet programs, discussed earlier, are examples of 'grow your own' programs that target high school students (Darling-Hammond et al., 2019; Riley Institute, n.d.). Other 'grow your own' programs target non-teaching school personnel and other mid-career community members with demonstrated commitment to their local area and to social justice through education for local students (Gist et al., 2019, Oyen & Schweinle, 2021). Schools provide a package of financial, resourcing, spatial, experiential, and academic supports to mentor candidates through teacher preparation and into teaching within the school or community. Evidence shows that these programs are effective in providing access to teaching for candidates who do not traditionally apply to enter teacher preparation and work best when the provided supports are targeted to the needs of individuals within their community (Carver-Thomas, 2018; Gist et al., 2019).

This strategy has potential in the Australian context, where sectors, schools and higher education providers with mutually beneficial goals and missions can share accountability for teacher learning through preparation and into the profession. Small niche programs where schools support individual

paraprofessionals and other community members can be found in Australia. These programs are typically not formalised and little to no evidence is available about them. Purpose-built programs to support 'homegrown' candidates (Oyen & Schweinle, 2021) have significant potential to meet the teaching and learning needs of schools and communities across Australia's diverse regional, rural and remote communities.

'Teacher residency' programs are modelled on medical residencies to provide a range of supports through an internship period of co-teaching, typically with some guarantee of ongoing employment on attaining minimum standards (Darling-Hammond et al., 2019). Candidates are required to complete higher education studies, often with expectations of data and action planning and implementation in context and with the support of mentor teachers (Van Nuland et al., 2020). These programs offer a range of financial and employment incentives for teaching candidates alongside commitments to professional learning. They are typically competitive, targeting high achievers to contribute through altruistic motivations towards social justice in education.

Evidence from these programs indicates that they encourage high achievers using strategies that are likely to maintain a strong commitment to teaching from them into the longer term (Podolsky et al., 2019). Again, this strategy has potential for hybridisation within the Australian context and particularly in NSW where conditional accreditation allows for the employment of preservice teachers. These models might assist with immediate teacher shortages by progressing candidates to teaching in schools earlier. However, this would require the development of fit-for-purpose teacher preparation programs with mutual accountability to professional learning shared between participating sectors, schools and higher education providers. The work expectations and conditions of teachers in these programs will also need to be formalised to ensure adequate opportunity for candidates to complete their studies, as discussed earlier.

Beyond teacher preparation, professional learning in employment is equally critical to establishing school communities and cultures that are supportive of attracting teachers' positive career outlooks. Evidence shows that supportive leadership and learning communities can attract teachers to hard-to-staff schools and locations (Darling-Hammond et al., 2019; Lampert et al., 2021; See et al., 2020a). Two key components of ongoing professional learning are induction and ongoing professional development. Internationally, systems with high levels of teacher supply have formalised induction and mentoring programs lasting at least two years, providing support for early career teachers and pedagogically focused career pathways for expert teachers (Cordingley & Crisp, 2020; Van Nuland et al., 2020). These systems also facilitate quality collaborative professional learning based on the concerns and expertise of the teachers themselves (Cordingley & Crisp, 2020). On the other hand, evidence of specific professional development programs and applying for additional credentialling, comparable to highly accomplished and lead teacher status in Australia, have not been shown to be attractive to potential candidates (See et al., 2020b).

Social conditions incentives

The final group of social conditions incentives includes strategies used to respond to geographic and social isolation. Geographic isolation is associated with teaching in regional and remote schools and communities (Handal et al., 2018; Oyen & Schweinle, 2021). Social isolation may also be experienced in regional or remote locations. It may also be experienced by diverse candidates who experience identity isolation within any school community (Marrun et al., 2020a), including overseas-born teachers (Datta Roy & Lavery, 2017).

Strategies to provide social support to new teachers are described as important for attracting teachers to commit to new communities and become 'homegrown teachers by time' rather than temporarily

'transplanted' teachers (Oyen & Schweinle, 2021). Little to no evidence is available to demonstrate the usefulness of these strategies for attracting teachers as they are usually coupled with other strategies and are difficult to separate from the broader packages (See et al., 2020b). These are included here because issues of geographic and social isolation are known to be disincentives to potential teaching candidates that are particularly relevant in the Australian context (Burke & Buchanan, 2021; Handal et al., 2018; Lampert et al., 2021). The evidence shows that, by themselves, these strategies are insufficient to attract candidates into geographically and socially isolated contexts. However, they may contribute to supporting the attractiveness of other incentives, such as financial incentives, and may support retention, as discussed in a later section.

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