



What are the features of different models of teacher education?

A review of the evidence

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2026

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This report was commissioned by a UCLC-IOE consultancy project entitled *Shaping the Education Cluster of the Academic City in Armenia* led by Professor Norbert Pachler, UCL Institute of Education, and forms part of a technical report for that project.

Suggested citation:

Mutton, T. (2026) What are the features of different models of teacher education? A review of the evidence. London: UCL Consultants

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Introduction

It is important to acknowledge, at the outset, that there is no general agreement as to how we should educate the teachers of the future, with particular positions often determined by broader conceptualisations of the nature of teaching and of teacher knowledge, that is to say, what teachers need to know and be able to do (Darling-Hammond *et al.*, 2007). This might appear to be a relatively straightforward question to address, suggesting that it should be relatively simple to identify an appropriate professional knowledge base and the specific technical skills that teachers require in order to become effective classroom practitioners. The answer to the question is, however, not at all straightforward and is dependent on a range of important factors, including (but not limited to): philosophical considerations around the nature and purpose of both teaching and teachers; an understanding of the complex knowledge base that underpins teaching and an awareness of the inter-relationship between these different forms of knowledge; an understanding of the way in which children and young people learn; and the role of national educational policies in determining the nature of professional practice. These considerations will, in turn, inform the approaches taken in respect of teacher education, and in particular, initial teacher education (ITE). These approaches are likewise dependent on a huge range of inter-related factors. The purpose of this review of the literature is to examine the evidence in relation to some of these factors and to consider the implications of the analysis for the development of an effective and sustainable model of initial teacher education.

This review aims to bring together some of the international evidence around what makes for effective programmes of initial teacher education (ITE). Teacher education is a highly complex field and comprises a number of different but closely related areas, covering structures, programme content and curriculum, pedagogy, assessment etc. The report begins by looking at more generic issues around the professional education of teachers, along with wider conceptual approaches, before going on to look at the knowledge base of teaching and how this is reflected in different theories of professional learning. The next section examines the key models that are likely to underpin the approaches to be found in many contexts across the globe. The review then focuses on the perennial issue of the relationship between theory and practice and how this influences

particular conceptualisations of ITE partnership working. School-university partnerships (SUPs) are at the heart of effective ITE provision and the review examines a number of related issues, including general questions around the structure and organisation of partnerships, a brief overview of how SUPs operate in various international contexts, and some consideration of the conceptualisation of the role of the school-based mentor within the SUP. The final section discusses issues around the sustainability of SUP working and examines some of the risks to this sustainability. The report concludes with a section that summarises the key findings from the review of the literature.

Methods

The literature review is based on searches using various international education-specific databases (namely ERIC, ProQuest and Google Scholar) along with the University of Oxford's SOLO database. The search focussed on peer-reviewed journal articles, books and reports published in English over the past 25 years, although some earlier works with particular relevance that emerged from citations in the publications that were read were also included where appropriate. Initial teacher education is a vast area and initial searchers produced tens of thousand of results, so the field was narrowed by searching more specific terms aligned with the heading for each section of the literature review. Publications from Anglophone countries inevitably made up a significant proportion of those reviewed, although specific searches were made in relation to those parts of the review that focus on specific international contexts (such as policy and practice in some individual European countries). Finally, publications identified through previous research activity were also looked at if deemed to be relevant.

Search terms included combinations of the following: initial teacher education; teacher knowledge; initial teacher training; models of initial teacher education; preservice teacher preparation; theory; theory and practice; partnership; school university partnerships; quality; student teacher preparation, mentor; mentoring; teacher education policy; standards for qualified teachers.

Following the initial search the titles and abstracts of each of the identified publications were looked at in relation to their relevance to the over-arching research question and a decision taken as to which were the most pertinent. These studies were then read and an assessment was made as to which were to inform the current review. Around 150 publications were then selected for inclusion in the review.

Conceptual approaches

Winch, Oancea and Orchard (2015) argue, from a philosophical perspective, that different aspects of teachers' professional knowledge are reflected in three distinct conceptualisations of teaching (they describe these as teaching as a craft; teaching as the application of technical protocols; and teaching as a professional endeavour). These three conceptualisations work together, albeit in distinctive ways, to inform teachers' professional practice, with each conceptualisation dependent on a particular view of what knowledge teachers need in order to teach effectively. In relation to the first of these conceptions, seeing teaching as a craft privileges an approach to teacher education whose primary aim is to develop beginning teachers' situated understanding, with an emphasis on providing opportunities to acquire appropriate 'practical wisdom' (Winch, Oancea & Orchard, 2015, p. 205). ITE programmes will therefore focus on student teachers observation of experienced practitioners and, in order to develop the 'capacity to grasp the salient features of a situation, deliberate imaginatively and holistically and to make ethically and practically sound judgments in specific situations' (2015, p. 205). The second of these conceptions, teaching as the application of technical protocols, views learning to teach as primarily the accumulation of technical know-how – for example, the management of classrooms and/or pupil behaviour, knowledge of the curriculum and the stages of progression within it, and knowledge of assessment approaches and techniques. Teacher education, therefore, entails the demonstration of these skills by an experienced practitioner, and then opportunities for the new teacher to practise these skills until they become proficient as an “*executive technician*” (2015, p. 209). Winch, Oancea & Orchard go on to argue, however, that whilst teaching as craft and

teaching as technical know-how are both necessary, neither is in itself sufficient, and that teaching has to be seen as a professional endeavour, with teachers being able to reflect critically on different sources of professional knowledge (both from research and from practice) in order to come to a judgement as to what is needed within a specific context.

Shulman (2005), in his elaboration of the idea of signature pedagogies, argued that the purpose of any professional education (not just the education of teachers) is to ensure that ‘novices are instructed in critical aspects of the three fundamental elements of professional work - to *think*, to *perform*, and to *act with integrity*’ (2005, p. 52). Furthermore, Shulman sees any signature pedagogy as being made up of:

- ‘a *surface structure*: the recognisable acts of teaching and learning how to perform as a professional.
- a *deep structure*, a shared understanding how best to convey the knowledge and thinking of that profession.
- an *implicit structure*, a shared sense of attitudes, values, and dispositions characterising the morals underpinning the profession’. (Shulman, 2005, p. 54-55)

In terms of teacher education, this translates to a position that values not just the demonstrable (and, it could be argued, the more easily observable and assessable) aspects of professional practice, but also the deeper and more implicit structures which are rooted in an understanding of what is required to promote teaching as a professional endeavour. Consequently, giving due regard to the knowledge base of teaching has to be an important fact in determining the content of any ITE programme.

The knowledge base of teaching

Darling-Hammond (2006a) talks about ‘a spectacular array of things that teachers should know and be able to do in their work’ (p. 300) In terms of the ‘knowledge question’ (Cochran Smith, 2001, p. 529), this has been at the forefront of teacher education research for many decades, focussing on the question (posed above) as to what teachers need to know and be able to do. Cochran-

Smith argues that this question previously drove the design of teacher education programmes so as to ensure that codified teacher knowledge was at their centre, and that this also had implications for an understanding of the role of the different contexts in which teacher learning took place, which in turn led to developments in school university partnerships (SUPs), such as professional development schools (PDS) in the USA (see below).

Shulman (1986) discusses the way in which, in the US context, the award of an academic qualification in a specific subject discipline was at one time considered sufficient to enable one to teach, thus emphasising the dominance of subject knowledge. He then goes on to discuss a time when there was a shift to placing the emphasis on pedagogic competences (often at the expense of subject knowledge) and with a 'sharp distinction between knowledge and pedagogy' (p.6).

Shulman then addresses what he refers to as the 'missing paradigm' (1986, p.6), that is to say, the way in which the teacher transforms subject matter into knowledge that has meaning for the student.

Shulman (1987) describes this specific knowledge, as 'pedagogical content knowledge', one of seven categories of teacher knowledge that he identifies (the others being: content knowledge; general pedagogical knowledge; curriculum knowledge; knowledge of learners and their characteristics; knowledge of educational contexts; and knowledge of educational ends purposes and values). Subject (content) knowledge, whilst an essential aspect of the knowledge required for teaching, is therefore not in itself sufficient. Shulman emphasises the importance of PCK as being 'the category most likely to distinguish the understanding of the content specialist from that of the pedagogue' (p. 8) and argues that it encompasses: an understanding of common learner misconceptions related to the subject in question; an awareness of how to sequence content to support progression in learning; and an ability to make the learning accessible through the use of analogies, examples, and demonstrations etc. While Shulman's conceptualisation has remained influential, the idea of PCK has been widely developed, adapted and challenged (see for example, Grossman, 1990; Magnusson, Krajcik & Borko, 1999; Loewenberg Ball, Thames & Phelps, 2008; Rowland, Huckstep & Thwaites, 2003). Moreover, as Shulman himself also acknowledged, '(a) knowledge base for teaching is not fixed and final' (1987, p. 12) and, useful as the conceptualisation of PCK might be, it does not remove the sense of a significant divide between what is described as theory and what is seen as practice (Tatto, 2022). PCK has been examined

extensively in science and mathematics education where a significant amount of the focus has been on the difficulties that learners experience in the subject, along with their conceptions and misconceptions. Although there are also examples of PCK research in arts, humanities and social science subjects this is less prevalent than in science and mathematics education, perhaps because the notion of generalisable misconceptions applies less well to subjects where sociocultural and personal factors have a stronger role to play in the difficulties that learners might face (Philpott, 2014).

One important development of PCK was the introduction of a conceptual framework (Mishra & Koehler, 2006), commonly referred to as TPACK (Technological Pedagogical Content Knowledge), and which was designed to take account of the knowledge required by teachers to integrate technology into their practice. Wang, Schmidt-Crawford and Jin (2018) carried out an extensive review of the literature to provide a synthesis of the research specifically around preservice teachers' TPACK development and conclude that there are key aspects of ITE programmes that foster this development. First, 'modeling the use of technology within courses and K-12 classroom situations appears extremely critical' (2018, p.253); second, 'teacher educators should provide high-quality technology experiences for preservice teachers, and these experiences should occur throughout the entire teacher preparation program' (p.253); and finally, the integration of technology must extend into the practicum since 'key field experiences can shape and ultimately impact 'can shape and ultimately impact how preservice teachers use and integrate technology in their future classrooms' (p.243).

In terms of adaptations to and refinements of Shulman's concept of PCK, the work carried out by Rowland, Huckstep & Thwaites (2003) provides a potentially valuable way of understanding the different dimensions of teacher knowledge which can be used effectively to inform the development of beginning teachers. Their research focussed on the teaching of Mathematics in primary (Elementary) schools in England and resulted in the model that they refer to as the Knowledge Quartet.

The model comprises four key components. *Foundation knowledge* comprises subject matter knowledge and is seen as the knowledge a teacher possesses, but may not always utilise.

Transformation knowledge is more akin to Shulman's notion of PCK and represents knowledge in action. The final two components, *Connection knowledge* and *Contingency knowledge*, do not relate as closely to previous conceptualisations of teacher knowledge as the first two but add categories that are particularly useful when working with student teachers. Connection knowledge 'concerns the coherence of the planning or teaching displayed across an episode, lesson or series of lessons' (p.24, Rowland, 2013) and does have some resonance with Shulman's category of curricular knowledge. Contingency knowledge represents a teacher's ability to respond to unanticipated classroom events - events that could not be predicted when planning a lesson and requires teachers to think on their feet. Rowland, Thwaites and Jared (2015) define contingent responses as those that 'are legitimately connected to the intended focus of instruction, yet which nevertheless disturb the intended flow of teaching and learning' (2015, p.77). This might mean, for example, dealing with an unexpected question from a pupil that provides an opportunity (that had not been anticipated) to explore an issue further in order to enhance pupil learning. Contingency knowledge is not, however, intended to account for interventions by the teacher to deal with 'behaviour-rule violations or transitions between lesson segments' (2015, p.77).

Underpinning each of these four areas is a set of what Rowland, Huckstep & Thwaites (2003) refer to as contributory codes, one example of which is given below:

Transformation knowledge:

- Choice of example
- Choice of representations
- Use of instructional materials
- Teacher demonstrations (to explain a procedure)

The Knowledge Quartet is versatile in that it can be used in several ways: first, to support the development of teachers (and not just student teachers); second, it can be applied to all subjects and across different education phases and systems; and third, it is also a potentially useful tool to support the development of mentoring strategies (for example, providing a framework for providing

subject-specific feedback and developing a shared language between mentors and the student teachers with whom they are working.

The role of knowledge within theories of professional learning

Eraut (2013) outlines the way in which professional knowledge encompasses both codified knowledge (the sort of knowledge which is explicit and which can be retrieved and passed on to others) and practical knowledge, which represents the way in which codified knowledge is used. Both codified and practical knowledge are learnt in different ways, some of which teachers, as professionals, will acquire ‘through formal education, and some of which will be “implicit knowledge” (they will learn it from their family, community, on-the-job, etc.)’ (2013, p. 49). Furthermore, cultural knowledge also has a role to play in workplace learning, and this is ‘usually uncoded and acquired, for instance, through participation in working practices’ (p. 49). By contrast, personal knowledge ‘is defined as what a person brings into new situations that enables them to think and act in those situations’ (p. 49) and may be determined by a range of factors such as previous experiences, social interaction, beliefs and values. Professional learning encapsulates both formal and non-formal learning, with the latter dependent on several factors, including the degree of intentionality involved and when such learning (which may be implicit, reactive or deliberative) takes place. Eraut argues that implicit learning occurs without conscious effort and is linked to past experiences, whereas reactive learning is near-spontaneous, unplanned, and occurs in response to current situations. Deliberative learning, by contrast, is planned, involving time set aside for systematic reflection or decision-making. The time available to make decisions is also a salient factor. In some situations a fairly instant response is required, which is often characterised by ‘routinised behaviour that, at most, is semi-conscious’ (p. 52). What Eraut next calls the ‘rapid/intuitive mode of cognition’ shows a greater level of awareness and is characterised by ‘rapid decision-making within a period of continuous, semi-routinised action. Typically, it involves recognition of situations by comparison with similar situations previously

encountered, then responding to them with already learned procedures' (p. 52). Over time, expertise is developed in that precedents are identified which inform the response taken. The deliberative/analytic mode 'is characterised by explicit thinking of individuals or groups, possibly accompanied by consultation with others. It often involves the conscious use of different types of prior knowledge, and their application to new situations' (p.53)

What Eraut's analysis confirms is the complex, multi-faceted nature of teachers' knowledge and decision making. Walter Doyle summed up the nature of this complexity (and the challenges it poses for teachers) many decades ago, noting that, for the student teachers he observed as part of his role as a teacher educator and researcher in the USA, the most striking features of the classroom were its '*multi-dimensionality, simultaneity and unpredictability*' (Doyle 1977, p. 52). In essence, teachers need to be able to respond to the multiplicity of things happening in the classroom, often at the same time, and often arising from situations that could not have been anticipated in advance. Furthermore, teachers are constantly having to juggle and reconcile a number of different (and often competing) concerns. Mary Kennedy's research with experienced teachers, also in the USA, identified six general concerns: covering desirable content; fostering student learning; increasing students' willingness to participate; maintaining lesson momentum; creating a civil classroom community; and attending to their own cognitive and emotional needs. (adapted from Kennedy, 2004; 2005). Responding to these competing concerns also has an ethical dimension since the decisions the teacher makes need to be balanced and fair, and often depend not just on technical judgements about how to achieve a particular objective, but on moral choices about how to arbitrate between competing, but incompatible, priorities.

Given the extent of these competing objectives, beginning teachers quickly need to develop fluency in the use of practised routines, developing what Kennedy (2006, p. 206) calls 'rules of thumb'. Teachers need also, however, to be able to adapt to changes in circumstances such as changes of context, the introduction of new curricula but also teaching new groups of pupils from year to year. Whilst rules of thumb might be important, so too is the capacity to evaluate why these established practices may, sometimes, not work in changed contexts, and this requires an understanding of the theory that underpins them. In the context of the need for teachers to have

this capacity, Hammerness and her colleagues identify not only the need for efficiency in ‘acquiring and using well-learned schemas and routines’ (Hammerness *et al.* 2005, p. 374), but also to the importance of what Berliner (2001) has called ‘adaptive expertise’, that is to say, the capacity to ‘move beyond existing routines... to rethink key ideas, practices and even values in order to respond to novel situations’ (Hammerness *et al.* 2005, pp. 358-9). Practice alone is not sufficient; beginning teachers need some understanding of the basis of that practice so that they can adapt when required to do so.

Returning to the way in which knowledge for teaching has been conceptualised, Cochran-Smith and Lytle (1999) distinguish between three kinds of professional knowledge:

- ‘Knowledge-*for*-practice’: formal, codified knowledge about teaching which is passed down from expert to novice in a hierarchical relationship, albeit within a potentially supportive context.
- ‘Knowledge-*in*-practice’: the sort of practical knowledge that is embedded in the teacher’s craft and comes from direct experience of being in the classroom, together with reflection on that experience.
- ‘Knowledge-*of*-practice’: the knowledge which is ‘generated when teachers treat their own classrooms and schools as sites for intentional investigation at the same time that they treat the knowledge and theory produced by others as generative material for interrogation and interpretation’ (p. 250, original emphases).

In other words, in the third of these conceptualisations, neither ‘knowledge-*for*-practice’ nor ‘knowledge-*in*-practice’ is privileged; rather, teachers learn through opportunities to interrogate and critique the knowledge derived from both these sources, requiring them both to question their own practices in light of research and other evidence, and to question the validity of such evidence or its relevance to their own classroom contexts.

Models of teacher education

Various theoretical models of teacher education have had prominence at different times and in different contexts, exerting a direct influence on the way in which approaches to ITE are conceptualised. Each model has its own set of implicit values and a recognisable pedagogy, but with significant differences in terms of theoretical underpinnings. Examples of models that are prevalent within the literature include those discussed below.

i. Theory into practice models

Theory into practice models are predicated on the idea that student teachers need to be equipped with sound theoretical understandings before they engage in any form of practice. It is therefore the role of the university to provide the relevant theory, and the school to provide opportunities to apply this theory to practice. In some contexts, the model is structured in such a way as to ensure alignment between two distinct phases of professional preparation (in Germany, for example, a two-phase model is based on two years of study of theories and general pedagogy, followed by a second phase that is more oriented to practice, although recent changes have attempted to include some practical experience within the first phase – see below). Theory into practice models often assume an over-reliance on educational theory at the expense of practice. An example of the latter can be found in the approach that was common in England in the early 1980s, when university ITE programmes focussed on the teaching of the so-called foundational disciplines (psychology, sociology, and the philosophy and history of education), with much less emphasis placed on the role of schools. At the time, universities (whose role in the education of teachers had only just been fully secured) were fundamentally concerned with the professionalisation of teaching through the development of what they perceived as necessary disciplinary knowledge; with hindsight, however, this may now be seen ‘as a period when teacher education was over-academic and detached from the world of professional practice’ (Menter, Mutton & Burn, 2019, p. 67). Such a model is inherent in the way in which ITE was (and still is, in some cases) structured and is one that anticipates ‘neat continuities between decontextualized research-based claims about ‘what works’ and their implementation in highly diverse, individual contexts’ (Burn & Mutton,

2015: 220). The theory into practice model has been critiqued as an outmoded and ineffectual approach (see, for example. Hagger and McIntyre, 2006: Korthagen, 2010).

ii. Apprenticeship (or craft) models

Apprenticeship models promote the idea that learning to teach is best achieved through the practice of teaching, under the supervision of an expert practitioner. Learning is assumed to involve observation, imitation and practice, with instructional feedback given by the more experienced colleague, and little attention (if any) given to educational theory. Apprenticeship models have often been promoted (particularly in England and the USA) by those who are critical of the role of universities in teacher education, who condemn what they see as the teaching of what was seen to be irrelevant educational theory. For these critics (see Loughran and Menter, 2019, for examples from England) university-based elements are entirely unnecessary since they argue that all one needs to teach is strong subject knowledge and the opportunity to practise. In many contexts a limited understanding of the practicum leads to it being seen as the embodiment of an apprenticeship experience, with the novice teacher learning from an expert (i.e. a mentor or co-operating teacher) in the classroom setting. The model has been criticised by, among others, Winch, Oancea and Orchard (2015) (see above) who argue that the conceptualisation of the teacher as a craft worker ‘overplays the value of situated professional knowledge at the expense of technical know-how and critical reflection’ (2015, p. 208). Buitink (2009) argues that, within the apprenticeship model, ‘all too often, what is learned is an everyday pedagogy of “showing and telling”, in which the underlying principles are not made explicit and learning occurs through imitation and adaptation’ (Buitink, 2009, p.118). The apprenticeship model seeks to reduce the complexity of teaching in order to make learning to teach more accessible for new entrants to the profession and, as a result, risks ignoring ‘the complexity of all of the interconnections available within a school environment’ (Collins & Ting, 2017, p. 8); it has also been criticised for the hierarchical nature of the model (Smith & Avetisian, 2011), in which an expert hands down ‘recipes’ that will work’ to a novice (Maynard & Furlong, 1994, p. 23). Whilst some may argue that apprenticeship models offer fewer opportunities for critical reflection, others contend that

beginning teachers need to have models that they can emulate in order to develop confidence with their current practice so as then to be able to be more reflective or innovative.

One of the most significant iterations of the apprenticeship model in recent years has been the development of programmes within the ‘Teach for ...’ movement. To take England as one example, this route into teaching is through Teach First (see Elliott, 2018; Tillin, 2023), which focuses on the development of the technical skills of teaching through a ‘what works’ approach. Teach First is clear about its achievements over the past 20 years in terms of its role in improving teacher recruitment and retention, the way in which it has become a pathway to educational leadership, the improved outcomes of pupils in schools which Teach First operates etc. (Teach First, 2023) but, as an employment-based apprenticeship model, has been characterised as ‘a technology which limits the intellectual engagement trainee teachers have with education theory, by focusing their attention on ‘what works’ in the classroom’ (Spicksley, 2019).

iii. Stage theory models

Models associated with stage theory promote the idea that beginning teachers go through a series of separate stages of development. Widely recognised examples of stage theory include:

- moving from novice to expert as suggested by Berliner (1988) who identified five distinct stages, categorised as novice, advanced beginner, competent, proficient and expert;
- changes in the nature of the teacher’s concerns (Fuller and Bown, 1975), starting with self-survival, moving to concerns with task (enacting particular teaching strategies) and finally to concerns with impact (student learning);
- stages which reflect distinct learner positions over time, characterised as early idealism, survival, recognising difficulties, hitting a plateau, and moving on (Maynard and Furlong, 1994; Furlong & Maynard, 1995).

Stage theory is also associated with specific approaches to mentoring which are seen as being aligned with each stage of the model. The theory has, however, been criticised for failing to acknowledge that not all beginning teachers will necessarily follow these distinct stages (Burn, Hagger, Mutton & Everton, 2000). Conway and Clark (2003) discuss the way in which the stage theory model the model has endured because ‘the normative expectation that teachers’ ultimate concern ought to be about students and student learning rather than self or situations seems to blend description of what development is like with a prescriptive template for teacher development’ (p.467) The model therefore becomes one that has led programmes to be structured around these anticipated stages of development and, crucially, places an emphasis on supporting beginning teachers through these stages. Development in learning is understood as a process of working through expected concerns as beginning teachers gain more experience of teaching itself. As a result, mentoring within the model becomes focussed on identifying and responding to these concerns (Maynard and Furlong, 1994) which may limit the scope for mentors to identify and respond to different stages of development of the individual beginning teacher.

iv. Clinical practice models

Clinical practice models recognise the essential role of schools in creating the opportunity for beginning teachers to develop their abilities through critical engagement with practice. Within such models, it is not sufficient, for beginning teachers merely to be placed in schools on the assumption that they will learn from the observation of others and their own practice (Darling-Hammond, 2000). Their engagement with practice needs to be both ‘intentionally planned and well supervised’ (Dresden & Thompson, 2021, p. 10). Clinical practice models (or what have also been referred to as research-informed clinical practice models) have been a key feature of many innovative programmes internationally (see Burn & Mutton, 2015). One such programme is the Oxford Internship Scheme (Benton, 1990) developed as a response to what were judged at the time to be ineffectual theory into practice models that characterised many of the teacher education programmes within universities. The model was underpinned by a set of clearly articulated principles which had been agreed between the university and its school partners. These principles

focussed on the effective integration of the contributions of both the school and the university within the ITE programme, in an attempt to bring research-informed perspectives to bear on clinical practice, thus seeking to address the problems associated with the perceived ‘discontinuities between university and school components of the programme or with poor conditions for student-teachers’ professional learning in the schools’ (McIntyre, 1990, p. 29). The principles of the OIS encapsulate what the programme designers so as the essential aspects of a collaborative partnership, and it is, perhaps, worthwhile to reproduce them here in some detail:

- Concentration of student teachers in particular schools, so as to raise the profile of initial teacher education in these schools, and to make it a significant task for the teachers involved.
- Extended involvement of the student-teachers as ‘interns’ in the school, so that they can become established, with situational knowledge of the students, teachers, resources, norms and ethos of the schools, and have more of the status of junior members of staff.
- Partnership between university and school staff in joint planning of the programme, with agreement on issues to be dealt with, their ordering, and the respective tasks to be undertaken by staff and interns in school and university.
- Integration of the programme so that there are clear, explicit relationships and relatively short time intervals, connecting university classes, workshops, reading and assignments with school observations, discussions, teaching and other tasks. In effect there is one coherent programme, with closely interconnected elements in school and university.
- Secure learning environments, with learning tasks (especially those of teaching in school) being carefully graduated in a flexible way so that interns are not overwhelmed by the complexity or other anxiety-provoking characteristics of the tasks, but can instead approach them in calm, rational, analytic ways.
- Explicit encouragement for interns to use ideas from diverse sources (in recognition that privately they will do so in any case), including their own personal histories as well as university and school sources, to inform their thinking and their teaching.

- Emphasis on testing all ideas against various criteria including ‘academic’ criteria of theoretical coherence, consistency with research evidence, consistency with espoused educational and social values, and ‘practical’ criteria of feasibility in relation to constraints of time, resources and expertise, acceptability to relevant others, and effectiveness in context. (McIntyre, 1990, pp 31-312)

These principles acknowledge the essential and yet distinctive contribution of both schools and university and commit to their effective integration.

The clinical practice model was also central to the development, in the United States, of what were known as Professional Development Schools (PDS), or clinical schools, following work from the mid-1980’s by researchers such as the Holmes Group (1986). The aim of these schools was to ‘connect teacher education reform with school reform’ (Zeichner, 2009, p. 26), serving as ‘a setting for clinical internships of pre-service teachers and for in-service professional development of practising teachers’ (Hallinan & Khmelkov, 2001, p. 180). Drawing on the terminology of medical education and the concept of the teaching hospital, in which the ‘results of research feed directly back to patient care and student preparation’ (Case, Lanier, & Miskel, 1986, p. 40), PDS were developed as sites where ‘practice-based and practice-sensitive research can be carried out collaboratively by teachers, teacher educators, and researchers’ (Darling-Hammond, 2006b, p. 162). Darling-Hammond draws on her study of seven exemplary programmes covering a range of different contexts in the US and it is worth listing in full what were found to be the common features of these programmes:

- a common, clear vision of good teaching that permeates all course work and clinical experiences, creating a coherent set of learning experiences;
- well-defined standards of professional practice and performance that are used to guide and evaluate course work and clinical work;

- a strong core curriculum taught in the context of practice and grounded in knowledge of child and adolescent development and learning, an understanding of social and cultural contexts, curriculum, assessment, and subject matter pedagogy;
- extended clinical experiences—at least 30 weeks of supervised practicum and student teaching opportunities in each program—that are carefully chosen to support the ideas presented in simultaneous, closely interwoven course work;
- extensive use of case methods, teacher research, performance assessments, and portfolio evaluation that apply learning to real problems of practice;
- explicit strategies to help students to confront their own deep-seated beliefs and assumptions about learning and students and to learn about the experiences of people different from themselves;
- strong relationships, common knowledge, and shared beliefs among school- and university-based faculty jointly engaged in transforming teaching, schooling, and teacher education (Darling-Hammond, 2006a, p. 305).

PDS schools were to become sites for research (by all parties) into effective teaching approaches that would improve the outcomes of those for whom prevailing educational policies did not appear to be working - particularly pupils of minority ethnic backgrounds attending large urban schools in areas of high socio-economic deprivation (Zeichner, 2009).

Another influential model of research-informed clinical practice, developed in Australia, is the Melbourne Master of Teaching (MTeach) programme (see McLean Davies *et al.*, 2013) which is based on a:

clinical practice model in which pre-service teachers are immersed into classrooms in partner schools from the first few weeks of semester where they are supported by a network of school experts ('teaching fellows') and university-based experts ('clinical

specialists’) who make connections between school field experiences and academic coursework. (Kriewaldt & Turnidge, 2013, p. 104)

Kriewaldt and Turnidge describe clinical reasoning as being akin to ‘clinical judgment or decision-making in medical literature’ and encompasses the ‘analytical and intuitive cognitive processes that professionals use to arrive at a best judged ethical response in a specific practice-based context’ (2013, p. 106)

The attempt to achieve greater integration is evident in the development of what is known as realistic (or authentic) teacher education, which was developed by Korthagen and his colleagues in the Netherlands (see Korthagen, with Kessels, Koster, Lagerwerf, & Wubbels, 2001). The model was developed as a means of addressing the perennial issues at the time around the theory/practice divide, which was seen as the cause of the well-documented phenomenon of ‘reality shock’ (Britzman, 1986; Veenman, 1984). This ‘shock’ was experienced by beginning teachers entering the profession who felt that their experiences of learning to teach (often involving theory into practice models) had not prepared them sufficiently well for the realities of the classroom. The ‘realistic approach’, developed at Utrecht University, is built on extensive research (see Koestier 1995; Korthagen, with Kessels, Koster, Lagerwerf, & Wubbels, 2001; Tigchelaar & Korthagen, 2004) around the way in which beginning teachers might bring relevant theory to bear upon the particular concerns within their practice. In some iterations of the programme, these teachers are prompted to articulate insights from what they achieve in the classroom as rules of thumb, and then to examine and compare them with theories encountered at the university, gradually validating and extending their repertoire of such theories (Janssen, de Hullu, & Tigelaar, 2008).

Like other models, RTE is underpinned by a set of core principles, including: an holistic view of teachers’ professional learning, shaped by beliefs, values, and experiences; an understanding that teachers’ behaviour is influenced not just by rational approaches but also by emotions and intuition; the integration of theory and practice; the importance of starting from real-life concerns that teachers; the key role of reflection (adapted from Korthagen, 2017).

Korthagen and Kessels (1999) argue that the immediacy of many teaching situations, makes it difficult to separate perception, interpretation and reaction and that an amalgamation of teachers' images, thoughts, feelings, needs and values is likely to influence a teacher's behaviour in any given situation. Korthagen and Kessels (1999) refer to this as a *gestalt*. Starting from teachers' authentic teaching experiences, RTE 'amounts to turning the world upside down' (Korthagen and Lagerwerf, 1996, p. 183) so that teacher education is dependent on a view of knowledge as a subject to be created by the learner, rather than as a created subject (Korthagen, Loughran & Russell, 2006). Finally, central to the RTE approach is the development of teacher reflection, guided by a structured model (Korthagen and Kessels, 1999) that involves reflection around classroom teaching experiences, as well as theorising about practice. Korthagen (2017) argues that teacher educators need to raise awareness of *gestalt* elements, again within a structured framework, moving through a number of stages (or levels) beginning with teachers' intuitive actions influenced by their emotions, beliefs, preconceptions, values etc. The next stage is to form mental frameworks in order to organise their experiences of practice. Then, approaching the level of theory, teachers begin to make connections between their practical knowledge and broader theoretical concepts. Reflection drives the model and, as teachers' practical knowledge develops, they start to build their own theoretical knowledge. Thus theory develops *from* practice, rather than theory being applied to practice.

v. Core practices models

Core practices have been defined as the 'identifiable components (fundamental to teaching and grounded in disciplinary goals) that teachers enact to support learning. Core practices consist of strategies, routines, and moves that can be unpacked and learned by teachers' (Grossman, Kavanagh & Pupik Dean, 2018, p. 4). Core practice models are characterised by an 'intense focus on particular, well-specified practices' (Forzani, 2014, p. 358) and seek to combine 'attention to technical skill with attention to professional judgment and improvisational capability' (p. 367). While core practice models have some similarities to clinical practice models, and are sometimes referred to as 'practice-based' teacher education, Forzani insists that not all forms of 'practice-

based' teacher education are the same, and that the distinctions between different iterations need to be carefully understood. Consequently, extended time spent in a school placement 'observing and participating in practice' does not necessarily equate to learning 'directed at acquiring skill at specific practices' (p. 358). The development of core practice models was consistent with the call from the Blue Ribbon panel report of the National Council for Accreditation of Teacher Education [NCATE] in the USA that aimed to promote a national strategy for the clinical preparation of teachers. It argued for the need to turn teacher education 'upside down' (NCATE, 2010, p. 2) and presented ten design principles for clinical preparation and a strategy for implementation strategy, involving suggested changes both to the ITE curriculum in order to strengthen partnership and secure a stronger research base. These design principles include: the centrality of school pupils' learning as the focus of any programme; programme integration; the use of core teaching standards; interactive professional communities as sites for student teacher learning; intensive embedded clinical school experiences that are structured, staffed, and financed to support beginning teachers' learning and (school) pupils' achievement; the effective use of technology; data-driven evaluation of effectiveness; strategic partnerships seen as being imperative for powerful clinical preparation (adapted from NCATE, 2010). Core practices, or 'high-leverage' teaching practices are those that have been identified as necessary to ensure that beginning teachers are adequately prepared to function independently in the classroom (Loewenberg Ball & Forzani, 2009; McDonald, Kazemi, & Kavanagh, 2013). In terms of teacher education, this requires the systematic development of specific pedagogical approaches within three related areas, namely representations of practice, decomposition of practice and approximations of practice. Some have argued, however, that the proliferation of approaches within the model in recent years has led to a lack of conceptual clarity (Grosser-Clarkson & Neel, 2020), but also that the approach is restrictive rather than expansive, since it 'limits opportunities for novice teachers to learn the relational aspects of teaching' (Philip, 2019, p.1) and whilst promoting notions of inclusivity, can actually be 'exclusionary' (2019, p. 27).

vi. Communities of practice models

The notion of communities of practice was first developed by Lave and Wenger (1991) but is frequently referred to as an appropriate model of professional learning for teachers. Whilst often being used to designate the context in which professionals learn both individually collectively, there are different interpretations of the way in which the model operates (Philpott, 2014). At its heart, the model sees learning as being situated in a particular sociocultural context, with the learner a participant in a process that focuses on the development of self, identity, relationships and practices rather than the acquisition of content. Lave and Wenger referred to the process of learning in this way as legitimate peripheral participation. Later versions of the model (see, for example, Wenger, McDermott & Snyder, 2002) moved away from a focus on the development of individuals within communities of practice to a consideration of the way in which communities of practice might contribute to the development of wider groups, such as school departments, whole schools, or groups of schools. Wenger, McDermott and Snyder (2002) define communities of practice in this way as ‘groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an on-going basis’ (p. 4).

In terms of ITE, the communities of practice can be seen to align other models, although issues around the clarity of what is meant by the term itself can lead to it being appropriated in different ways at different times. Thus, situated learning involving legitimate peripheral participation might be envisaged as being integral to a model of apprenticeship, whereas communities of practice might also reflect the notion of a whole ITE partnership operating within a clinical practice model.

Summary

The models discussed above are all underpinned by pedagogical assumptions about the nature of school and university contributions to beginning teachers’ learning that need to be made explicit but, as has been seen, not all readily allow for development of the kind of contextualised understanding that supports the informed professional judgement required of teachers. Furthermore, these models assume a particular perspective in relation to the teacher as learner. In their analysis of some of the above models, as part of a wider consideration of signature

pedagogies within ITE, Brooks, McIntyre and Mutton (2023) characterise each model as either a ‘knowledge first’ or a ‘person first’ approach (p. 5). In models where knowledge first is dominant, ‘the knowledge that teachers need is foregrounded, but situated externally to them’ (p. 5), whereas in person first approaches ‘the new teacher is positioned as a competent but as yet uninitiated member of the teaching community. The approach assumes that the knowledge and skills required to be a teacher are developmentally within reach of the new teacher, and the pedagogy is designed to enable it to come to the fore’ pp. 5-6). Models which fall into the ‘knowledge first’ category are, for example, stage theory, theory into practice models, core practice models and the apprenticeship model, since each is predicated on the idea that the knowledge required to be a teacher has to be acquired by the teacher in order for them to develop further as a professional. ‘Person first’ approaches might include communities of practice, or clinical practice models, where ‘learning how to perform as a professional requires the new teacher to question and challenge themselves and their actions, as well as to build on the work of the community’ (p. 6).

The relationship between theory and practice

Korthagen, Loughran & Russell (2006) examined three teacher education programmes in Australia, Canada and the Netherlands respectively with a view to determining a set of core principles for teacher education that would go beyond a focus on either a ‘research-based’ or a ‘practice-oriented approach, but which might rather seek to ‘integrate these two perspectives to arrive at a pedagogy of teacher education that is both empirically based and practically oriented’ (2006, p. 1022). The seven principles that the researchers arrive at are, again, worth reproducing here in full:

Principle 1: Learning about teaching involves continuously conflicting and competing demands.

Principle 2: Learning about teaching requires a view of knowledge as a subject to be created rather than as a created subject.

Principle 3: Learning about teaching requires a shift in focus from the curriculum to the learner.

Principle 4: Learning about teaching is enhanced through (student) teacher research.

Principle 5: Learning about teaching requires an emphasis on those learning to teach working closely with their peers.

Principle 6: Learning about teaching requires meaningful relationships between schools, universities and student teachers.

Principle 7: Learning about teaching is enhanced when the teaching and learning approaches advocated in the program are modeled by the teacher educators in their own practice. (2006, pp. 1025-1036, original emphasis).

Korthagen, Loughran & Russell went on to group these principles into three separate categories which they identified as ‘components of programs and program change’, these being ‘I. Views of knowledge and learning: Principles 1, 2 and 3; II. Program structures and practices: Principles, 4 and 5; III. Quality of Staff and Organization: Principles 6 and 7’ (2006, p. 1037).

Student teacher learning

Whilst much of the focus of ITE research in the past 30 years has been around models of teacher education; the integration of theory and practice; school-university partnership arrangements; the practicum experience; and approaches to mentoring, there has also been research that focuses on student teacher learning, much of which complements the above areas. It was not until the latter years of the 20th Century that a growing body of research started to identify the student teachers themselves as the key players in their professional education (see, for example, Lacey, 1977; Bullough, Knowles & Crow, 1991; Putnam & Borko, 1997; Sugrue, 1997). This research began to focus on student teachers’ values and their preconceptions, ideals and beliefs, and the importance for teacher educators in being away of who the learners were, and what they were

bringing with them to the process of learning to teach. Furthermore, student teacher learning is a complex process (Calderhead & Shorrock, 1997) involving an interplay between the content to be learnt, the context in which this learning takes place and particular attributes of the learners themselves. So, the key question is not 'How do student teachers learn?' but 'How do particular student teachers learn x in context y?'. (Calderhead & Shorrock, 1997, p. 193).

One predominant approach to student teacher learning (and, in fact, to the professional learning of all teachers) has been that of reflective practice, emanating from the work of Donald Schön and his concept of the reflective practitioner (Schön, 1983, 1987). Schön's distinguishes between reflection-in-action (for example, the thinking that takes place whilst teaching that takes into account what is happening in the classroom in the moment) and reflection-on-action (involving retrospective consideration of what has happened and how such reflection might inform future practice). Reflective practice contrasts with a technical rational approach to teaching in that, rather than assuming that there are ready made solutions to teaching issues and protocols to apply in any given situations, reflective practice instead requires individuals, themselves, to generate solutions which take into account the diversity and complexity of the contexts in which they are working. Whilst adopted as a learning model that underpins many ITE programmes internationally, it is not without its critics (Beauchamp, 2015). Beauchamp, in her review of the literature, analyses these critiques, some of which she sees as having always been present and some of which are newly emerging. In relation to the former she cites 'the problem of understanding reflection due to the multiple definitions of it that exist, the shifting terminology used to describe it, the variations in epistemological approaches to it, and the overall question as to whether reflection actually holds value for teaching' (2015, p.126). With regard to emerging critiques Beauchamp points out that 'reflection may be talked about more than practised, and that it may not be as deeply or effectively instilled in teaching practice as is sometimes suggested' (2015, p.127). The message from her analysis is that we should not view reflection merely as a useful tool in teacher education, but rather we need to understand better the concept itself and its potential for enhancing professional learning.

More than 30 years ago, McIntyre (1993) was similarly wary of the rhetoric around the notion of reflective practice in ITE and highlighted the way in which it might be more appropriate for experienced teachers than for beginning teachers who had limited experience on which to reflect. He suggested that the ‘beginning teacher is more able to learn through deliberating about the nature of the expertise that he or she *wants* to develop’ than through reflecting on what is after all their very limited experience (McIntyre, 1993, p. 43). For McIntyre reflection is a much more important way of learning for experienced teachers than for beginning teachers, who need to access and evaluate ideas from different sources beyond their own limited practice. McIntyre instead promotes the idea that beginning teachers need to be engaged in ‘theorising’ rather than reflection, saying that reflection ‘concerns one’s present practices, but theorising concerns the whole world of possibilities for the future’ (1993, p.47).

Developing the idea of ‘practical theorising’ (as distinct from reflection), Hagger and McIntyre (2006) point to what is distinctive about the term and the way in which it has the potential to enhance student teachers’ learning:

Beginning teachers need primarily to learn in their practice from other people’s ideas, both those of experienced practitioners and those of educational researchers and scholars; and they need to submit all these ideas, and of course their own, to a critical examination that goes well beyond commonsense. It is for this much more demanding kind of reflective practice that we use the term ‘practical theorising’. (Hagger & McIntyre, 2006, p.58)

McIntyre’s concept of ‘practical theorising’ has been developed and researched within the Oxford Internship Scheme (Burn, Mutton & Thompson, 2022) but can be seen to have wider significance since it represents a way of bringing theory and practice together within ITE programmes.

Highlighting problems that arise from the discontinuities between the university and school-based components of teacher education courses is nothing new, but McIntyre argued that the likelihood of these discontinuities between highly contextualised craft knowledge on the one hand and more abstract kinds of knowledge on the other should be explicitly acknowledged. Central to the notion of practical theorising is the idea that student teachers need to be encouraged to test all the ideas they encounter (from either practical or theoretical sources) against various criteria: testing ideas

for practice, for example, against the academic criteria of theoretical coherence and consistency with research evidence, or testing more theoretical ideas against the practical criteria of feasibility and effectiveness in a particular school context (McIntyre, 1990).

Such an approach lies at the heart of the model of research-informed clinical practice (discussed above) and represents an approach to student teacher learning that has the potential to breach the ubiquitous and unhelpful theory-practice divide.

Conceptualisations of ITE partnerships

Brisard, Menter and Smith (2005) suggest that in the context of ITE, partnership can be conceptualised in one of two ways. It can be used either to “carry certain theories about the nature of learning to become a teacher...[which] concern the pedagogy and curriculum of ITE” (2005, p. 5), or to describe arrangements for the delivery of ITE programmes. The latter include logistical concerns such as “the resourcing of initial teacher education, particular balances of responsibility between different roles or the placing of and arrangements for particular forms of school experience” (2005, p. 5) Emphasis in this second conceptualisation is thus placed on organisational and structural matters related to the partnership, rather than on teacher education pedagogy, as in the first.

The importance of effective school-university partnership working

Effective School-University Partnerships (SUPs) are an essential feature of programmes in initial teacher education (ITE) that seek to integrate theory and practice in a coherent way. Bills *et al.* (2008) noted in their systematic review of the literature on international perspectives on quality in initial teacher education that:

there is widespread agreement that effective school experience, and by extension the strength of the partnership between the provider and the schools, is central to the quality of initial teacher education. (2008, p 14).

This assertion is backed up by much of the research evidence over the past twenty-five years that has focussed on what makes for effective SUPs. Darling-Hammond (2006a; 2006b) draws on research into PDS schools (see above) and identifies the model as having brought about ‘stronger more effective ‘ programmes (2006a, p. 300) because of the way they brought about better integration of theory and practice within innovative approaches to SUPs. Key elements of successful programmes were identified as having extensive connected clinical experiences; an enquiry approach; strong SUPs; assessment based on professional standards, and ‘at least 30 weeks of mentored clinical practice under the direct supervision of one or more expert veteran teachers’ (2006b, p. 153).

In terms of a focus more specifically on SUPs, Le Cornu and Ewing (2008) - writing in the context of Australia where a recent inquiry at the time had deemed the practicum as a ‘key persistent problem area’ (2008, p. 1800) - argue for a reconceptualisation of the way in which universities work in partnership in schools and for the development of ‘learning communities’ (p. 1799). They outline what they see as being required in order for SUPs to move towards being learning communities, including: ‘changes in nomenclature and roles’ (p. 1805); ‘changes in how professional experiences are structured’ (p.1806); ‘new supervisory practices’ (p. 1807); and ‘ongoing professional learning amongst professional experience staff’ (p. 1807). At around the same time in Australia, research carried out into what makes for effective and sustainable SUPs concluded that sustainability only comes where there is ‘trust, mutuality and reciprocity among stakeholders’ (Kruger, Davies, Eckersley, Newell & Cherednichenko, 2009, p. 97) and argued that ‘teacher education can be re-invigorated if it takes as a starting point the formation of partnerships with schools and their students and teachers’ (p. 95). Studies carried out in New Zealand have also confirmed the value of strong SUPs, with Grudnoff & Williams (2010) study leading them to conclude that ‘the practicum can be re-conceptualised to become a site for collaborative

endeavour to support student teacher learning in practice.’ (p. 42) with both school and university staff working collaboratively to bridge the theory-practice gap.

That is not to say, however, that all arrangements described under the banner of ‘partnership working’ necessarily demonstrate the integration necessary to achieve such coherence. Indeed, failure to do so has been something of a perennial problem. Over 40 years ago, Robin Alexander warned not only that partnership was “difficult to promote” because of the differing conceptions of professional learning held by universities and schools respectively, but also that the “comfortable language of partnership”, was likely to mask potentially damaging “intractable issues” (1984, p. 142). Likewise, Bloomfield (2009) warns that an overly positive view of partnership working can mask some of the complexity of partnerships and their inherent contradictions. Unless there is a clear conceptual framing of the way in which SUPs are to operate, there are likely to be difficulties (Farrell, 2021). A recent study in Ireland (Sloan & Dolan, 2025) highlights how some of these difficulties persist because of the misalignment between government policies aimed at promoting stronger ITE partnership working and what happens in practice, including vagueness in terms of the understanding of what partnership means, the conflicting priorities of schools and the universities, and issues around inadequate resourcing.

In the late 1980’s and early 1990’s large-scale research was carried out in England and Wales into the different approaches to SUPs that were in operation at the time. The Modes of Teacher Education (MOTE) (Furlong *et al.*, 1996; Furlong, Barton, Miles, Whiting & Whitty, 2000) examined the impact of various government policies on existing models of ITE and identified three predominant models: collaborative partnerships; partnerships led fairly extensively by an HEI (Higher Education Institution, or university); and separatist (or complementary) partnerships.

The researchers describe collaborative partnerships as being those which demonstrate a ‘commitment to develop a training programme where students are exposed to different forms of educational knowledge, some of which come from school, some of which come from HE or elsewhere’ (Furlong *et al.*, 1996, p. 44). What makes a collaborative partnership distinctive is that all those involved in the planning and delivery of ITE programmes (including both university and school partners) ‘engage mutually in negotiating the meaning of a shared agenda in which neither

party's meaning is privileged' (Edwards, Tsui & Stimpson, 2009. P. 13). Collaborative partnerships therefore require an agreed curriculum and a way of working which enable preservice teachers to 'build up their own body of professional knowledge' (Furlong *et al.*, 1996, p. 44), but this sort of partnership was not widely evident from the study.

By contrast, the HEI-led model of partnership is driven predominantly by a university-designed ITE curriculum in which the role of schools is to act as a resource to provide appropriate placement opportunities for student teachers. Responsibilities of both HEI and school staff (particularly ITE mentors), in relation to the delivery of the programme (including the school-based practicum experience) are set out by the university, which sees its role as maintaining the quality of provision throughout the partnership in order to ensure that student teachers receive comparable school-based experiences. Quality assurance thus features strongly in HEI-led models.

The separatist (or complementary) partnership is one in which 'school and HE are seen as having separate and complementary responsibilities but where there is no systematic attempt to bring these two dimensions into dialogue' (Furlong *et al.*, 1996, p. 47). In such models, little is done to achieve integration of the separate elements of the programme, and it is generally left to the student teacher to make sense of what they are learning from the two different contexts.

The MOTE study found that various aspects of each model might be present within any ITE programme, leading to a range of different permutations; although there were frequent references by ITE providers to the collaborative aspect of their partnership, this was often at the level of rhetoric, with the HEI-led model being the one that was predominant overall. What all three models have in common, however, is an acknowledgement of the necessity of schools and universities to work together in partnership, whatever that partnership might look like. In order for preservice to be able to access different forms of knowledge, which Neither the HEI nor the school alone is in a position to provide student teachers with the range of learning resources that they need (Hagger and McIntyre, 2006).

The above considerations of the nature of ITE partnership working emanate mainly from researchers working in a range of Anglophone contexts. In some European contexts, partnership is viewed in similar ways – for example, the European Union (EU) (2025) is clear that '(w)ell-planned

partnerships between schools and initial teacher education (ITE) institutes are essential to training future teachers’ and that ‘(s)chool-based experiences offer a realistic view of the teaching role and an initial contact with the wider professional community. Successful teaching practice builds on theory and gives student teachers key experiences to bring back to their universities’. Although there is variance in the range of experiences that could be grouped under the heading of practicum (also referred to as school placements, or field experiences) (Heinz, 2022), there has been a general acceptance that the practicum is an important aspect of any ITE programme, a trend which has been characterised variously as a ‘practicum turn in teacher education’ (Mattsson, Eilertson & Rorrison, 2011, p. 17), the ‘(re)turn to the practical’ (Beauchamp, Clarke, Hulme & Murray, 2015, p. 214) and ‘the turn toward practice’ (Zeichner & Bier, 2014, p. 103). In Wales, for example, the notion of collaborative partnerships (see Furlong, Barton, Miles, Whiting & Whitty, 2000) between universities and schools has driven the most recent reform agenda (see Glover *et al.*, 2023; Mutton & Breeze, 2024; Furlong, 2020), with partnership working being the key principle that underpins the Welsh government’s ITE accreditation criteria (Welsh Government, 2023). The significant change in policy was brought about by a review of provision in light of the best available international evidence. The review was carried out by John Furlong, who drew on the evidence of the British Educational Research Association (BERA)/Royal Society of the Arts (RSA) Inquiry (2014) into the role of research in the teaching profession. It is worth reproducing here what the final report of the review (Furlong, 2015) concluded from this body of evidence:

As a result of their inquiry, BERA-RSA argue that there is robust evidence to suggest that high quality initial teacher education has the following five core features.

The best programmes internationally:

- ensure that ITE programmes attract the best and most suitable candidates into the teaching profession;
- offer academic awards that are competitive, practice-focused and built on relevant educational research;

- develop strong links between theory and practice, in a way that helps students to understand and explore the interconnectedness of educational theories and classroom practices;
- establish strong links between initial teacher education and continuing professional development of teachers in schools;
- ensure that all of the above principles are underpinned by a clear understanding of evidence about how student teachers learn to teach and that courses themselves are the constant subject of research and development.

This would suggest that in order to be of the highest quality, initial teacher education needs its universities to provide strong, research led courses; it needs a school system that is willing to take responsibility and provide leadership in key parts of all programmes; and it needs to ensure that both university and school components are carefully integrated with each other. (Furlong, 2015, p.8)

The above approach would appear to exemplify an attempt to secure coherence across all aspects of the ITE programme driven by a set of clear principles that ‘operate as guidelines or criteria for developing the means for attaining goals, for making decisions about curriculum, pedagogy, and even institutional structures’ (Kroll *et al.* 2005, p. 144).

Partnership working across other international contexts

Elsewhere in Europe, there has, in the past, been considerable variance in the amount of time allocated to the practicum experience within ITE programmes (Eurydice, 2015), although moves towards increasing both the length and relevance of the practicum has been an ongoing trend in many countries in recent years, even if this has not necessarily been within as defined a notion of partnership as in some of the cases noted above. In Germany, there has been a greater focus on

the role of the practicum during the ‘first phase’ of teacher education programmes, where traditionally more emphasis was placed on the knowledge constructed from theories during university-based academic study (Waine & Wiborg, 2021). Nevertheless, it could be argued that the first phase still prioritises academic learning, rooted in disciplinary and theoretical knowledge, and that the second emphasises practical classroom skills, perhaps as a result of the traditional institutional cultures and expectations of universities and schools that still persist: universities are seen as focussing primarily on theoretical knowledge and research, whilst schools focus primarily on teaching and student learning outcomes.

In France, reform over the past two decades has resulted in a greater emphasis on the role of SUPs in teacher education. In 2019 the French government created new Instituts Nationaux Supérieurs du Professorat et de l’Éducation (INSPE) which are incorporated into universities and which offer Master’s level programmes. An emphasis in the new programmes on integrating theoretical knowledge with professional practice (which had previously been lacking in ITE programmes) includes opportunities for extensive practicum experience, although evidence suggests that further work is needed to ensure that the actual learning experiences within the practicum equip beginning teachers to engage in meaningful reflection (Maleyrot and Peyrez-Roux, 2025), echoing Zeichner’s reminder 30 years ago that:

Unless the practicum helps to teach prospective teachers how to take control of their own professional development and to learn how to continue learning, it is miseducative, no matter how successful the teacher might be in the short run (Zeichner 1996, p.217) .

Merely increasing the time that student teachers spend in schools will not, in itself, be sufficient to ensure that they have appropriate learning opportunities; the latter requires research-informed collaborations among school teachers, university staff and student teachers in order to develop capacity within the system ‘for critically examining the meaning of experience in order to develop professional knowledge (Ellis, 2010, p. 105).

In the Nordic countries (particularly Finland, Norway, Sweden, and Denmark), SUPs are a strong feature of models that prioritise integration between universities, schools, and educational research. The practicum experience therefore goes beyond being a placement, or merely an

opportunity to gain direct experience in schools and classrooms. Here, programmes seek integration between different elements of the programme and across the different learning contexts where research understandings play a key role. The model has been described as being scientifically designed teacher education, where student teachers are trained to engage critically with research and to use research to inform their developing practice (Sahlberg, 2011; Aspfors *et al.*, 2021).

In Finland, university-affiliated training schools serve as key sites for teaching practice and pedagogical experimentation, where experienced teachers work closely with university teacher educators. Research has shown that such settings facilitate closer integration between coursework and practical teaching experiences, supporting the development of pedagogical content knowledge and reflective practice among student teachers (Lavonen, Henning, Petersen, Loukomies & Myllyviita, 2019).

Similarly, in Norway, SUPs are built around the need to strengthen student teachers' learning experiences during the practicum through collaborative approaches, although research suggests that implementing such collaboration remains a challenge. For example, a study of Norwegian school-based teacher educators found that mentors reported limited opportunities to collaborate with university staff, highlighting the need for stronger organisational support and shared professional spaces (Dille, Sandvik & Einum, 2025), echoing Elstad's (2010) earlier call for mentoring and university teaching to become more closely aligned.

One country that has enjoyed recent success in terms of PISA outcomes has been Estonia, which has a particular approach to teacher education, drawing on specific principles and clearly defined professional standards and with a focus on pedagogy at its core (cite book). Subject teachers obtain an initial Bachelor's degree in a specialised subject and then undertake a master's level degree to prepare them to teach that subject. The development of research-informed practice is a key feature of these programmes, although only 20% of time is spent in schools. Estonia's future-oriented Education Strategy 2035 affirms both the role of universities in ITE and looks to the further development of research-informed teacher education.

In Ontario, Canada, new requirements for ITE set out in the *Accreditation of Teacher Education Programs* (Council of the Ontario College of Teachers, 2014) increased the minimum required length of the practicum to 80 days with the aim of enhancing opportunities for practice-based learning, although research within this context indicated that across universities in Ontario there was nevertheless a wide variety in the way in which the practicum was organised and delivered (Kitchen & Petrarcha, 2015).

Looking to another very different context, it is worth noting that in South Africa, SUPs are an important component of teacher education, particularly in efforts to address historical inequalities and within the education system, although here also research has indicated that there needs to be stronger collaboration between universities and schools (Zondo & Adu, 2024). The introduction of in 2011 of the 'Integrated Strategic Planning Framework for Teacher Education and Development in South Africa' led to the setting up of designated 'teaching schools' and 'professional practice schools' to encourage the development of student teachers' research-informed teaching. Whilst student teachers are potentially able, in these settings, to observe effective teaching practices, engage in reflective inquiry, and receive structured mentoring from experienced educators, research indicates that this is not always the case and that these schools need to function not just as locations for the practicum but as spaces where research, coursework, and practice are fully integrated (Gravett & Ramsaroop, 2017).

The structure and organisation of ITE partnerships

Whilst new conceptualisations of ITE partnership working that emerged in the 1980s across many international contexts resulted in what were celebrated, at the time, as positive developments (Smedley, 2001), there remained an acknowledgement that not all partnerships operated in the same way. Lillejord and Børte's (2016) research mapping of ITE partnerships identifies three distinct characteristics of partnership working: organisation and management of partnership;

relations and collaboration in partnership; and challenges and mechanisms for successful partnerships. Each of these characteristics has the potential to give rise to complex arrangements, dependent not only on different conceptions of partnership, but also on a range of contextual factors, including, for example, those related to the cultures underpinning historic practices, along with more tangible questions of logistics, resources and distributed expertise.

Within England, over the past fifty years, considerable attention has been focused on structural considerations and related contractual relationships (see Mutton, Burn & Molway, 2024). As noted above, the MOTE researchers (Furlong *et al.*, 1996; Furlong, Barton, Miles, Whiting & Whitty, 2000) found the dominant model in England to be that of HEI-led partnerships – an essentially bureaucratic model. Its dominance is perhaps understandable, in that it does not essentially divert schools from their primary focus, which will always be pupil learning. If partnership structures are considered through the lens of activity theory, and in particular Engström's (2000) mapping of activity systems (i.e. systems which have as their focus a shared object) then the complexity is evident. In ITE partnerships, a primary contradiction, in Engeström's terms, is that ITE is clearly not the *main* focus of a school's activity. By engaging in ITE partnership working, schools are taking on an additional, and potentially contradictory, focus on student teachers as learners. If such contradictions arise, it is unlikely that schools will readily choose to prioritise the needs of the student-teacher.

ITE partnership working is, therefore, always likely to be complex because it depends on bringing together two very distinct contexts (i.e. the university and the school) within one structural relationship. Furthermore, the nature of any ITE partnership is usually determined not as a bilateral relationship between a university and a single school, but rather as multiple bilateral relationships between the university and a number of individual schools, albeit within a common partnership structure.

The role of mentors in ITE partnerships

Whilst there may be generic approaches to mentoring, such as those encapsulated in the *National Standards for school-based initial teacher training (ITT) mentors* (DfE, 2016) in England, such approaches say little about the way in which mentors actually work with beginning teachers. Generic approaches are likely to be a characteristic of what (McIntyre & Hagger, 1994) referred to as ‘zero level’ mentoring (p. 86), which is very different to the concept of ‘developed mentoring’ (p.94). The latter requires the mentor to have a detailed understanding of the nature of beginning teachers’ learning, as well as a range of mentoring strategies that provide appropriate learning opportunities within the practicum context and which enable beginning teachers to develop their professional knowledge ‘through interpretation, application and reflection on experience’ (Loughran, 2019, p. 527). Trevethan (2017) argues that the nature of the mentor’s role depends very much on the particular model of initial teacher education (ITE) within which they are working. She sees these models as falling into three broad categories (pp. 220-222):

- The ‘traditional model’ (also referred to as the ‘dominant’ model), reflecting aspects of a more hierarchical relationship and dependent upon the notion of teaching as a craft, best learned from an expert (p. 220).
- The ‘teaching as reflective practice model’, which assumes an approach to mentoring which is characterised by informed conversations, in which the role of the mentor is to ‘support student teachers to develop their own personal philosophy of teaching and to set and achieve personal goals rather than following the teacher model without question’ (p. 221).
- The ‘learning in partnership model’, which Trevethan equates to ‘educative mentoring’ (see Feiman-Nemser, 2012; Langdon & Ward, 2015). An educative mentor ‘establishes the prior conceptions, skills and knowledge of the student teacher and provides learning opportunities through experiences and professional conversations, which support and challenge student teachers to ask questions and grow’ (p. 222).

Kemmis and his colleagues (Kemmis, Heikkinen, Fransson, Aspfors & Edwards-Groves, 2014) argue that mentoring can take different forms, in which it is ‘understood and conceptualized in different ways (sayings), enacted in different ways (doings), and (...) people relate to one another differently (relatings)’ (p.155). They go on to say that:

... there are contested purposes between (a) assisting newly qualified teachers to pass through the formal juridical requirements for probation, which we describe as mentoring as supervision, and/or (b) supporting new teachers in the development of their professional practices by more experienced teachers, which we describe as mentoring as support, and/or (c) assisting new teachers collectively to develop their professional identities, which we describe as mentoring as collaborative self-development (2014, p.155).

Teacher Standards

Research indicates that even within differing education systems, there has been a move, in many countries, towards developing professional standards that emphasise practical skills and competences (Page, 2015). Often these are at national level but can also occur at sub-national/state level within federal government structures. Understandably, any such formulation of standards cannot encompass in a sophisticated and nuanced way all the contextual challenges teachers may face. It has been argued that differences between these various sets of standards ‘denote differing interpretations of what is valued rather than what is inherently ‘better’’ (Brooks, 2021, p.132). The OECD define standards as representing ‘what someone should know and be able to do to be considered competent in a particular (professional or educational) domain’ (OECD, 2013, p. 14) and goes on to identify four purposes of defining standards for teachers, namely:

- To support the improvement of teacher performance;
- To certify teachers who are new to the teaching profession or who have attained a certain status as teachers;

- To assess teacher performance; and
- To evaluate and accredit teacher training institutions (p.32)

The report indicates that teaching standards are a common feature in many countries internationally, notwithstanding a few notable exceptions such as Norway and South Korea. What these standards cover is also fairly consistent from one country to another, generally focussing on knowledge and understanding of the subject, along with teacher competencies around planning, implementation and assessment. The capacity to reflect on practice is also a central feature. In some systems wider aspects of professional practice are expected, such as an understanding of education policy, guidelines for ethical behaviour and a commitment to the wider school community. The following three examples from English-speaking contexts serve to illustrate these commonalities and differences.

In Australia, the Professional Standards for Teachers are grouped around three areas (Figure 1)

Professional Knowledge 1. <i>Know students and how they learn.</i> 2. <i>Know the content and how to teach it.</i> Professional practice 3. <i>Plan for and implement effective teaching and learning.</i> 4. <i>Create and maintain supportive and safe learning environments.</i> 5. <i>Assess, provide feedback and report on student learning.</i> Professional engagement 6. <i>Engage in professional learning.</i> 7. <i>Engage professionally with colleagues, parents/carers and the community.</i>
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Figure 1: Australian Professional Standards for Teachers (AITSL, 2011, np).

In the United States, whilst each state is responsible for the accreditation of new teachers, the country-wide Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards (Figure 2) are likewise grouped into key areas, encompassing ‘essential

knowledge’, which highlights ‘the role of declarative and procedural knowledge as necessary for effective practice’ and ‘critical dispositions’, which indicate the ‘habits of professional action and moral commitments that underlie the performances play a key role in how teachers do, in fact, act in practice’ (Council of Chief State School Officers (CCSSO), 2013).

<i>The Learner and Learning</i> <i>1 and 2: Learner Development and Learning Differences</i> <i>3: Learning Environments</i> <i>Content Knowledge</i> <i>4: Content Knowledge</i> <i>5: Application of Content</i> <i>Instructional Practice</i> <i>6: Assessment</i> <i>7: Planning for Instruction</i> <i>8: Instructional Strategies</i> <i>Professional Responsibility</i> <i>9: Professional Learning and Ethical Practice</i> <i>10: Leadership and Collaboration</i>
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Figure 2: (InTASC Model Core Teaching Standards (CCSSO, 2013))

In England the Teachers’ Standards (Figure 3) are grouped around eight key areas of knowledge and competence, each area accompanied by further exemplification (not reproduced here). These standards apply to teachers at all stages of their development.

<i>Part one: Teaching</i> <i>A teacher must:</i> <i>1 Set high expectations which inspire, motivate and challenge pupils.</i> <i>2 Promote good progress and outcomes by pupils.</i>

3 Demonstrate good subject and curriculum knowledge.

4 Plan and teach well-structured lessons.

5 Adapt teaching to respond to the strengths and needs of all pupils.

6 Make accurate and productive use of assessment.

7 Manage behaviour effectively to ensure a good and safe learning environment.

8 Fulfil wider professional responsibilities.

Part two: Personal and professional conduct

- *Teachers uphold public trust in the profession and maintain high standards of ethics and behaviour, within and outside school by:*
 - *treating pupils with dignity, building relationships rooted in mutual respect, and at all times observing proper boundaries appropriate to a teacher's professional position*
 - *having regard for the need to safeguard pupils' well-being, in accordance with statutory provisions*
 - *showing tolerance of and respect for the rights of others*
 - *not undermining fundamental British values, including democracy, the rule of law, individual liberty and mutual respect, and tolerance of those with different faiths and beliefs*
 - *ensuring that personal beliefs are not expressed in ways which exploit pupils' vulnerability or might lead them to break the law.*
- *Teachers must have proper and professional regard for the ethos, policies and practices of the school in which they teach, and maintain high standards in their own attendance and punctuality.*
- *Teachers must have an understanding of, and always act within, the statutory frameworks which set out their professional duties and responsibilities.*

Figure 3: The Teachers Standards in England (DfE, 2011, np)

Whilst teaching standards have become fairly pervasive, there are critiques of the way in which they have been adopted. Ryan and Bourke (2013), for example, in their analysis of the teacher standards in England and Australia, argue that these standards are reductive and characterised by the discourses of ‘managerialism and regulation’ (p.420). Ryan and Bourke promote instead the idea of the teacher as a ‘reflexive professional’ as being one who ‘is more likely to enact and sustain the discourses of quality teaching than one who simply follows government mandated standards with a tick-box mentality’ (p.420). Furthermore, the very different contexts in which teaching takes place mean that one defined set of competences cannot take into account the complexity of teaching and can never be applicable to all contexts (Eaude, 2014). Moore and Atkinson likewise highlight the risks of such decontextualization and argue that teacher standards give rise to ‘a reductive, mechanistic approach ... which ignores the idiosyncratic, contingent aspects of teaching and learning’ (Moore & Atkinson, 1998, p.171). A recent study of the use of teacher induction standards in Indonesia revealed how established models within some cultures may not translate to different cultures (Tatik, Nguyen, & Loughland, 2024) concluded that the use of teacher standards within a national teacher education reform agenda ‘cannot be successfully achieved due to lack of readiness of the school communities and the conflict with social, managerial and local cultural values and practices’ (p.44).

It is important to recognise that having a set of teaching standards *per se* is, in itself, no guarantee that these standards will be effective in improving the quality of teaching. As Darling-Hammond (2017) notes ‘robust standards weakly applied can be expected to have much less effect than those that are used, as in other professions, as an effectively endorsed expectation for candidates and institutions to meet’ (p.297).

In contrast to much of the literature, Adoniou and Gallagher (2017), in their qualitative study, carried out with 36 teachers and principals and focussing on the implementation of the Australian Professional Standards for Teachers found that new teachers, their mentors, and school principals were generally positive about their experience of working with these standards, although the researchers acknowledge the perception of an increased workload associated with providing evidence that a teacher had met the required standard.

This leads to the question as to how teacher education programmes assess the competences of new entrants to the teaching profession in relation to defined teaching standards. Internationally, different approaches are adopted by different governments, ranging from standardised testing (for example, in some state administrations in the United States) to portfolio evidence, or combinations of both (OECD, 2013). For Dinham, Ingvarson and Kleinheinz (2008), in a report for the Business Council of Australia focussing on developing quality education in Australia, using teacher professional standards to assess teacher competence is a relatively straightforward process with three key components:

1. Standards that define what accomplished teachers know and do (i.e. what counts as accomplished teaching and, therefore, what is to be assessed).
2. Assessment methods – structured tasks that describe how teachers can provide valid evidence of their practice and thinking in relation to all the standards.
3. Methods for setting standards and training peer assessors to judge the evidence against the standards consistently and fairly. (2008, p.39)

Recent research (Souza & Talbot, 2025) into the implementation of the Australian Professional Standards for Teachers and the assessment of beginning teacher competencies at one Australian university has, however, highlighted that this is not so straightforward, and reveals some key tensions. The researchers discuss the way in which the use of teacher standards may be driven by positive aims but nevertheless can result in dialogic tensions, in that they are both:

- i. a guide for planning and developing quality programs and an element that makes the work of academic staff more complex;
- ii. a reference for the adoption of a common language for the cohesion and effectiveness of the course and a gap in the definition and a choice of educative concepts more appropriate for the development of teaching skills; and
- iii. an instrument for the conformity of the theory-practice articulation for the development of professional skills of preservice teachers and a hologram of the

perspective of readiness for teaching designed for these same preservice teachers at the time of their qualification (2025, p.14).

Challenges to sustainability

In light of the complex range of factors that determine the way in which SUPs operate, it is inevitable that they will encounter a range of challenges, most obviously related to the extent to which they are compatible with the educational policies – particularly ITE policies – enacted at national or federal level. ITE policy reform has been a consistent feature of many international contexts in recent years (Darling-Hammond and Lieberman, 2012; Menter, 2019), as governments see teacher education as a key driver of educational improvement (which, in turn, is considered to be essential for any nation’s future economic prosperity). What frequently precipitates policy reform is a perceived need to improve the country’s performance in international tests, most noticeably the OECD’s Programme for International Student Assessment (PISA). Improvements to teacher education will, it is argued, lead to better teaching and so to better test results.

The specific focus of reform will obviously reflect particular national priorities, but research has shown a fairly consistent series of approaches, identified by Kosnik, Beck & Goodwin (2016) as including: the increased use of standards; minimum programme requirements; ‘research-based’ teacher education; increased assessment and accountability; diversification of routes; subject knowledge emphasis; relating theory to practice; and emphasis on continuing professional development. The implementation of reforms in one or more of these areas will inevitably have an impact on ITE partnerships, and may lead to contestation of the policy and of the ideological perspectives that underpin it. In England, for example, competing positions, on the one side advocating for the deregulation of university-based teacher education and, on the other advancing “a defense of professionalism grounded in the academy” (Darling-Hammond and Lieberman, 2012, p. 154) have characterised debates over ITE policy reform for the past twenty years. Driven by neoliberal policy makers who have favoured a market-driven model (Menter & Childs, 2013; Ellis & Childs, 2023), successive reforms have provided greater opportunity for alternative

provision and the rapid expansion growth of school-centred initial teacher training (SCITT) provision, accompanied by a reduced role for universities.

Not only are SUPs subject to particular sets of challenges at the macro (policy) level – particularly in the context of ITE policy reform – they also encounter micro-level challenges in terms of aligning the ITE curriculum with established policies and practices at school level. Green, Tindall-Ford and Eady (2020), in their review of SUPs in Australia, highlight the challenge of “adjusting to a partnership that required different approaches and interactions to what had been the norm”, as well as “the logistics associated with the implementation of the partnership, and the complex task of achieving the intended goals” (2020, p. 422).

For SUPs to become sustainable, some argue that it is essential to develop “trust, mutuality and reciprocity among stakeholders” within the context of pursuing these common goals (Kruger, Davies, Eckersley, Newell, & Cherednichenko, 2009, p. 97). Others take a more conceptual approach and advocate for what Zeichner (2010, p. 92) refers to as a “third space”, as a way of addressing the potential disconnect between what is learnt at the university and what is learnt during the school practicum and representing a rejection of the perceived binary between different forms of knowledge. In their review of the literature around ITE partnerships as third spaces, Daza, Gudmundsdottir and Lund (2021) examine the way in which the concept has been used to reconceptualise the relationship between universities and schools as an arena in which different epistemologies are made explicit and interrogated, by all stakeholders, as a means of securing greater levels of coherence and integration.

The concept of a third space is not, however, an automatic guarantee that preservice teachers will be afforded all the learning opportunities that they might require. Whilst the notion of third space working may bring schools and the university together within a non-hierarchical framework, and may facilitate the necessary task of “bringing research-based understandings of teaching and learning into dialogue with the professional understandings of experienced teachers” (Burn & Mutton, 2015, p. 219).

Conclusions

The review has focussed on a number of key areas but can by no means be seen to have covered the vast array of literature and research around approaches to teacher education, either at the conceptual level or in terms of practice. From the evidence available it is, however, possible to draw some general conclusions.

First, it has to be acknowledged that learning to teach is dependent on an extensive knowledge base and that the different sources of knowledge involved need to be articulated effectively so that their role within any ITE programme is clearly understood. This will then inform the way in which these sources of knowledge are prioritised within specific programmes and how beginning teachers will gain access to them. All of the models examined have a view as to what knowledge is important and the way in which this is then used to inform the design of specific ITE programmes. The evidence suggests that, in order to produce teachers who have the capacity to become full professionals, beginning teachers need to be provided with the opportunity to reflect critically on a diverse range of *different* sources of learning (some theoretical, others more practice-oriented). Identifying these sources of learning is not, however, enough; in order to be effective, ITE programmes need to be designed in such a way as to allow for the integration of these different sources of knowledge, and to provide opportunities for beginning teachers to interrogate them so as to develop strong rationales for their own practice. Integration, in turn, depends, on effective partnership between the school and the university with both sites of learning being validated for the distinct contribution that each makes. Central to this is a developed understanding of the nature and role of the practicum experience, including the role of mentors as school-based teacher educators. Underpinning all of the above is the need for there to be clearly articulated design principles that act as a secure point of reference when planning or adapting any aspect of the programme. Placing the beginning teacher as learner at the core, these principles reflect how the preferred model addresses the complexities in relation to course design, curriculum content, pedagogy, the relationship between theory and practice, roles and responsibilities within the partnership, the nature and purpose of the practicum etc. The literature provides evidence to support the formulation of the following design principles:

- Student teachers' professional learning is central to the design and implementation of all ITE programmes
- All aspects of the programme relating to pedagogy will be research-informed
- Teaching approaches that are advocated in the programme are modelled by teacher educators in their own practice
- Student teachers are provided with the opportunity to reflect critically, learning from a diverse range of *different* sources of knowledge
- ITE programmes allow for the integration of these different sources of knowledge, and to provide opportunities for student teachers to interrogate them so as to develop strong rationales for their own practice.
- Integration is built on effective collaborative partnership between the school and the university, with both sites of learning being validated for the distinct contribution that each makes.
- Roles and responsibilities are made explicit within partnership agreements.
- Intensive and extensive practicum experiences that are structured, staffed, and financed to support beginning teachers' learning
- A developed understanding of the nature and role of the practicum experience, including the role of mentors as school-based teacher educators.
- A set of core competencies that reflect the knowledge and skills that teachers require
- Integrated models of formative assessment
- Processes and structures for ongoing evaluation of programmes and their outcomes

Finally, as noted, given the scale of the literature available, the review is by no means fully comprehensive, neither in terms of what has been presented within each category nor within the identification of the categories themselves. As well as looking in greater depth at some of the issues identified, subsequent work might also need to focus on research that focusses on issues

that are touched upon but not examined in detail in this review, such as research around student teacher learning, assessment, resources, the nature and use of teaching standards/standards for accreditation etc.

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