

Scottish Council of the Deans of Education  
Attainment Challenge Project

Developing pedagogies that work for Pre-Service and Early Career Teachers to reduce the Attainment Gap in Literacy, Numeracy and Health and Wellbeing.

### Research Question 3:

**What other practice or research might assist us in our purpose?**

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## Contents

Executive summary .....	3
Project members:.....	5
Abbreviations:.....	6
Introduction .....	7
Links to previous reports .....	8
Approach.....	9
1. Teacher preparation in effective pedagogies .....	11
2. Preparation in literacy pedagogies. ....	15
3. Preparation in numeracy pedagogies .....	18
Integrating social justice within mathematics education .....	18
Programmatic models.....	19
4. Preparation in health & wellbeing pedagogies.....	22
Frameworks for health and wellbeing pedagogies.....	23
Addressing Adverse Childhood Experiences (ACEs).....	24
5. Reframing schooling.....	26
Building student teachers' pedagogical knowledge of learning spaces. ....	27
Drama as a means of rethinking learning spaces .....	28
6. Knowledge of the student and their communities .....	30
Service learning.....	30
Time and status allocated to community-based experience.....	31
Nature and extent of staging .....	32
Reciprocity framing.....	33
7. Deep professional dispositions .....	35
Social justice dispositions and values .....	35
Inquiry as stance: Practitioner Research in ITE.....	38
8. Targeted teacher education programmes .....	43
Teach For .....	43
NETDS (National Exceptional Teaching for Disadvantaged Schools) .....	44
NEXUS – community-engaged secondary ITE by internship.....	45
9. Mentoring and induction .....	49
Professional learning through the mentor/mentee relationship .....	49
Peer mentoring and networking approaches .....	50
Quality Teaching rounds. ....	50
10. COVID 19 research .....	54

## Executive summary

This report contributes to the Scottish Council of Deans of Education project related to the Scottish Attainment Challenge. It presents a literature review that responds to the third research question of the SCDE collaborative project: *What other practice or research might assist us in our purpose?* The purpose of this phase was to resource professional conversations and thinking in the teacher education sector, and to inform the final trial phase of the project.

A literature search was undertaken using a range of strategies, to identify published accounts of innovative work from beyond Scotland in the following fields: initial teacher education for high poverty settings; pedagogies in literacy, numeracy and health and wellbeing; mentoring and induction. Each group of studies is summarised under the following themes with their potential for the SAC, ITE programmes and professional learning noted.

**Teacher preparation in effective pedagogies:** This section reviews different attempts to distil effective classroom pedagogies and strategies that make a difference in school outcomes for disadvantaged groups. The three approaches profiled are the Education Endowment Foundation's 'Teaching and Learning Toolkit', the Queensland set of 'Productive Pedagogies' and Alexander's dialogic teaching.

**Preparation in literacy pedagogies:** noting the debates within the literacy field, this section profiles the 'Four Resources Model' for a rich conceptualization of literacy learning to overcome polarized debates, 'Reading Recovery' as a well researched intervention for poor readers in the early year, family literacy programmes for migrant and disadvantaged groups, and the genre approach for literacy learning across curriculum disciplines into secondary education.

**Preparation in numeracy pedagogies:** This sections profiled: 'Creative action methods' as an ITE strategies to engage ITE students with issues of social justice and equity in mathematics classes; a similar model for STEM teachers; Maths Recovery as an intensive intervention for low achieving pupils in early childhood; and the 'Primarily Maths' programmes that supports collegial learning in ITE.

**Preparation in health and wellbeing pedagogies:** This field is diverse, with strong contributions from Scottish researchers. Other resources such as 'culturally responsive pedagogy' and a 'relational' model of schooling highlight the importance of building strong relationships with the most vulnerable children. A valuable resource summarising the research around 'trauma-informed' practice was identified with links to potential ITE resources on addressing Adverse Childhood Experiences (ACEs).

**Reframing schooling:** This group of studies question the business-as-usual of schooling curriculum and pedagogy, which is timely given the impact of COVID-19. Approaches

profiled include 'Learning for sustainability', rethinking the spaces, sites and designs of schooling, including the use of drama in education to cultivate engagement and learning.

**Knowledge of the student and their communities:** Building from findings of the previous research phase, this section considers the research and debates around service learning in ITE. This is an immersive experience to give students more understanding and empathy with high poverty communities. Other models of 'apprenticing', 'community inquiry' and 'community partnership' are also considered for their differently configured relations between ITE student and community.

**Deep professional dispositions:** This section summarises different approaches and processes for cultivating professional dispositions reflecting social justice values that would enable transformative practice in disadvantaged communities. The need for critical reflection on the ITE students' own assumptions is highlighted, and strategies such as scenario-based learning, are included. Then research on practitioner pedagogy is reviewed to explore ways of enriching it an ITE and NQT pedagogy for cultivating research as a professional stance. In both sets, collaboration with other human services students is raised as pertinent to the increasing cross-agency work done in schools.

**Targeted teacher education programmes:** This section reviews the literature on three ITE programmes designed specifically to prepare students for high poverty settings. The US 'Teach For' model of fast track ITE programmes has had mixed reports in the research, but global impact. In response to critiques of that programme, the Australian 'National Exceptional Teaching for Disadvantaged Schools' has developed an alternative model, embedded in a four year undergraduate degree with strong employment outcomes. The Nexus programme is another Australian model built around paid internships with graduate students.

**Mentoring and induction:** This section reviews studies outlining models of mentoring the NQT and ongoing professional learning, highlighting the value of more dialogic relations and shared enquiry that focuses more on pupils' learning rather than organizational processes. Then the rigorously researched model of Quality Teaching rounds is outlined as a structured process of mutual observations and conversations within a professional learning community in a school.

**COVID-19 research:** The project team was also asked to compile relevant research about the impact of COVID-19 on schools. Reports by UNESCO, the Education Endowment Foundation, the Institute of Fiscal Studies, the Sutton Trust, and a report to Scottish Government by University of Glasgow academics are reviewed, all flagging major concerns about the exacerbation of the poverty-related achievement gap over the lockdown period and beyond, and highlighting the need for thoughtful and equitable 'catch-up' strategies.

References are given for all sources to allow readers to pursue ideas.

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## Abbreviations:

ACE	Adverse childhood experiences
CLPL	Career-long professional learning
CPD	Continuing professional development
EEF	Education Endowment Foundation
GCSE	General Certificate of Secondary Education
IFS	Institute of Fiscal Studies
ITE	Initial teacher education
NETDS	National Exceptional Teaching for Disadvantaged Schools
NQT	Newly qualified teacher
PP	Productive pedagogies
PLC	Professional learning community
SCDE	Scottish Council of Deans of Education
SIMD	Scottish Index of Multiple Deprivation
SAC	Scottish Attainment Challenge
UCL	University College London
UNESCO	United Nations Educational, Scientific and Cultural Organization

## Introduction

In February 2015, the Scottish Government launched its Attainment Challenge to tackle the poverty-related attainment gap in Scotland, in particular to improve achievement in literacy, numeracy and health and wellbeing for pupils living in areas of high deprivation. As part of this effort, the Scottish Council of Deans of Education were invited to develop a research agenda in the field of teacher education. In early 2018, funding was secured from the Scottish Government for a three year research programme involving representatives of the eight Schools of Education providing initial teacher education (ITE) across Scotland at that time.

The broad aim informing the suite of projects is to research how the sector might better prepare early career teachers (understood as final year ITE and probationer year) to work more effectively to improve literacy and numeracy attainment and health and wellbeing outcomes in schools serving pupils from SIMD<sup>1</sup> 1-40 backgrounds. Under this common purpose, the research programme has three strands:

1. an overarching collaborative project to achieve a perspective across the national sector across phases of audit, evaluation, horizon scan and reform;
2. eight research projects conducted by individual Schools of Education reflecting their context and priorities;
3. three PhD studentships hosted in the Universities of Edinburgh, Glasgow and Stirling.

This document reports on the third 'horizon scan' question in the collaborative project:

**Research question 3:** What other practice or research might assist us in our purpose?

We will conduct searches of the research and professional literature, and mobilise national and international networks of teacher educators, to identify productive teacher education pedagogies that are not part of our current practice but show promise. This search for new practices will seek to identify pedagogies that can be trialled in Scotland.

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<sup>1</sup> SIMD is the Scottish Index of Multiple Deprivation – see <https://simd.scot/2016/#/simd2016/BTTTTT/9/-4.0000/55.9000/>

## [Links to previous reports](#)

This phase has been developed with consideration of findings from the preceding reports.

The report on Research Question 1 (December 2018) established that the teacher education sector in Scotland already invests considerable effort into cultivating social justice and equity values, professional knowledge and pedagogical skills to support pupil learning in areas of high deprivation. The audit revealed that ITE students engage with a wealth of academic and policy resources, on campus and placement experiences, assessment tasks and professional enquiries to this end, within the limited time and material constraints of their programmes. Professional learning is understood to continue beyond the ITE phase, thus responsibility is shared with employers of probationers. With this local expertise and professional continuum in mind, the literature review is interested in identifying well documented, innovative ITE models and pedagogies from elsewhere, that is, outwith Scotland. It should also be noted that in some of the universities' own projects and the associated PhD projects new approaches are being developed and trialled within Scottish ITE programmes.

The report on Research Question 2 (October 2019) analysed interviews about the strengths and weaknesses of existing ITE programmes with teacher education, headteachers and mentor teachers, newly qualified teachers and their Local Authority employers across Scotland. The findings highlighted the emerging need for: better data literacy; more strategies for working with pupils with additional or complex needs; better pedagogic content knowledge around teaching literacy and numeracy; and more 'life experience' to better understand and work with communities of deprivation. With these identified needs in mind, the literature review has purposefully searched for publications on 'service learning', literacy, numeracy and health and wellbeing pedagogies, and for teacher education models that are specifically designed to prepare teachers to work in poor, disadvantaged communities or 'underperforming' schools.



## Approach

To manage the proliferation of published research in education, systematic reviews attempt to carefully filter publications to meet particular criteria then synthesise the selected research to date. This approach was not considered appropriate for this review because of: a) the wide variety of terms used to express the key concern of poverty/deprivation/disadvantage/equity; b) the premise of multiple deprivation of which poverty may be a symptom or one contributing factor; c) the variety of contexts and regulative frames in the international field of ITE that embed any insights in a particular set of conditions, and d) the search for possible innovative ideas that could be adapted to Scotland's local contexts. In this way, this literature review is interested in collating divergent thinking, not achieving some convergent synthesis.

The search has been carried out through three major strategies:

- 1) inviting project members to suggest references to initiatives they are aware of in their own professional spheres and networks;
- 2) scanning the last five years of key international journals, such as *Teaching Education*, *Teaching and Teaching Education*, *Journal of Teacher Education*, and *European Journal of Teacher Education* for pertinent articles.
- 3) targeted subject searches using key terms such as 'service learning', 'practitioner enquiry', 'Teach First' then subsequent work following up pertinent references in such literature. These searches were undertaken in Google Scholar to access both research and 'grey' literature, with citation counts as a rough indicator of influence in the field.

This report collates and summarises the most pertinent studies in the literature identified under the following themes. The third column in the table indicates substantive foci and key resources identified.

	<b>Theme</b>	<b>Key resources</b>
1	Preparation in effective pedagogies	Education Endowment Foundation's 'Teaching and Learning Toolkit'; 'Productive Pedagogies'; dialogic teaching.
2	Preparation in literacy pedagogies	'Four resources model'; multiliteracies and pluri-literacies; International Literacy Association <i>What's Hot Report 2020</i> ; Reading Recovery; family literacy; genre approach.
3	Preparation in numeracy pedagogies	Creative action methods, Maths Recovery, 'Primarily Maths' programme.
4	Preparation in H&WB pedagogies	Culturally responsive pedagogy; relational model; Addressing adverse childhood experiences.
5	Reframing schooling	'Learning for sustainability'; rethinking learning spaces; outdoor education; drama in education
6	Knowledge of the student and their communities	Service learning, 'apprenticing', community inquiry, community partnership.

7	Deep professional dispositions	social justice and equity orientations; practitioner enquiry to cultivate research as stance.
8	Targeted teacher education programmes	Teach First; National Exceptional Teaching for Disadvantaged Schools; Nexus.
9	Mentoring and induction	Mentoring approaches, Quality Teaching rounds
10	COVID-19 research	UNESCO, IFS report, EEF review, Sutton Trust, Lundie & Law.

## 1. Teacher preparation in effective pedagogies

This section reviews different attempts to distil effective classroom pedagogies and strategies that make a difference in schooling outcomes for disadvantaged groups. Though coming from different research paradigms, these are resources for general pedagogic knowledge that could potentially inform a teacher education curriculum.

The Education Endowment Foundation (EEF) is a charitable body supported by UK government grants devoted to ‘breaking the link between family income and educational achievement’<sup>2</sup> with an emphasis on ‘evidence-based’ approaches to identify ‘what works’. They commission trials of promising innovations, conduct independent evaluations and prepare guidance that is accessible to teachers and school leaders.

Their online **Teaching and Learning Toolkit** (2018)<sup>3</sup> currently offers a list of 35 interventions that have been associated with claims of improved learning outcomes for ages 5-16, and a distillation of available research evidence to support or mitigate such claims. The interventions include changes at the level of school system (for example, Block Scheduling, Built Environment), class level (Setting or Streaming), teacher (Performance Pay) or the child (Aspiration Interventions, Small Group Tuition). Each intervention is reported with an indication of how costly such an innovation may be for a school, the strength of the evidence, and what size impact it is understood to make on learning (expressed as child months of progression). In this vein, Feedback is considered ‘high impact for very low cost, based on moderate evidence’ and Metacognition is considered ‘high impact for very low cost, based on extensive evidence.’ Behind each intervention there is more explanation and literature review.

The second concept of ‘**productive pedagogies**’ was developed in a large research programme undertaken in the Australian state of Queensland, 1998-2008, when there was a political push to address inequitable schooling outcomes and an effort to rethink curriculum and assessment for the 21<sup>st</sup> century. Building on work by Newmann and Associates on ‘authentic pedagogies’ in Wisconsin, USA, the Queensland work lists 20 productive pedagogies (Lingard, Hayes, & Mills, 2003) under 4 domains (intellectual quality; connectedness to the world; social support; and recognition of difference):

Intellectual quality	Connectedness to the world	Social support	Recognition of difference
Higher order thinking Deep knowledge Deep understanding Substantive conversation Knowledge as problematic Metalanguage	Knowledge integration Background knowledge Connectedness Problem-based curriculum	Student control Social support Engagement Explicit criteria Self-regulation	Cultural knowledges Representative participation Narrative Group identity Citizenship

<sup>2</sup> <https://educationendowmentfoundation.org.uk/about/>

<sup>3</sup> <https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/>

Through extensive coding of the strength of these 20 dimensions in nearly 1000 classes across Queensland, it was established that ‘teachers score more highly on supportive classroom environment than on intellectual quality, connectedness and recognition of difference’ (Lingard, B. et al., 2002, *School Reform Longitudinal Study: Final Report*, Vol. 1, para. 1.14). This research was then followed by large scale systemic reform and investment in professional learning to improve pedagogical practices and therefore student outcomes. This framework has been taken up and adapted in other settings, including NSW and Singapore, and its outcomes carefully evaluated (Ladwig, 2007; Lingard, Hayes, Mills, & Christie, 2003; Lingard et al., 2002; Luke, Freebody, Cazden, & Lin, 2007; Luke, Freebody, Shun, & Gopinathan, 2005). This work has also been used in teacher education programmes (Gore, Griffiths & Ladwig, 2004; Zyngier, 2007) to provide a comprehensive frame and common vocabulary for teachers’ practice that is focused on promoting successful pupil learning, especially for those from disadvantaged or marginalised backgrounds:

the PP framework ... requires a deep commitment to ensuring that both the teacher education program itself and the preparation it provides for beginning teachers are serious about deep understanding of important concepts through meaningful learning experiences that occur in an environment that supports learning and values diversity. (Gore et al, 2004, p. 376)

A third promising approach is Alexander’s (2018) **dialogic teaching**. This is a multidisciplinary approach ‘to energise classroom talk and thereby enhance students’ engagement, learning and attainment in contexts of social and educational disadvantage’ (p. 561) developed by Alexander in England, then submitted to a large scale randomised control trial in schools serving disadvantaged children in four UK cities. Dialogic teaching entails professional development that develops ‘a broad repertoire of talk-based pedagogical skills and strategies’ (p. 563) applied at the teacher’s discretion to enrich spoken interactions in class, particularly early years. The approach attends to teacher and pupil talk, and talk amongst pupils:

although student talk must be our ultimate preoccupation because of its role in the shaping of thinking, learning and understanding, it is largely through the teacher’s talk that the student’s talk is facilitated, mediated, probed and extended – or not, as the case may be (p. 563)

The attention to talk is situated in a model of teaching that is conceptualised through frame, form and act. In this framework, talk can be generated for a variety of reasons and purposes. The approach outlines a wealth of designs for/on talk, but highlights quality and the ultimate importance of cognitive work achieved through dialogue. The deep resource is summarised as aiming to cultivate:

- *interactions* which encourage students to think, and to think in different ways;
- *questions* which invite more than simple recall;
- *answers* which are justified, followed up and built upon rather than merely received;
- *feedback* which, as well as evaluating, leads thinking forward;
- *contributions* which are extended rather than fragmented or prematurely closed;

- *exchanges* which chain together into coherent and deepening lines of enquiry;
- *discussion and argumentation* which probe and challenge rather than unquestioningly accept;
- *scaffolding* which provides appropriate linguistic and/or conceptual tools to bridge the gap between present and intended understanding;
- *professional mastery of subject matter* which is of the depth necessary to liberate classroom talk from the safe and conventional;
- *time, space, organisation and relationships* which are so disposed and orchestrated as to make all this possible. (pp. 570-571)

The sequences of trials and evaluations conducted by EEF reported that children eligible for free school meals made the equivalent of two additional months' progress in core subjects compared to their peers in control schools, and professional leaders and teachers reported better pupil confidence and engagement. This is very encouraging work that would enrich all learning across any school that invests in the professional development. Similarly its insights could enrich the general pedagogic knowledge in the ITE curriculum.

For the purposes of the Scottish Attainment Challenge, these resources offer

- rich and rigorously researched information on effective pedagogies as potential curricular resources for ITE and professional learning;
- general pedagogic knowledge applicable to any subject area and age group;
- approaches found to be of particular relevance and value to disadvantaged students.

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## 2. Preparation in literacy pedagogies.

Improving literacy outcomes for students in communities of high deprivation is a key priority in the Scottish Attainment Challenge. However, as suggested in the Research Question 1 report for this project, literacy is now a rather complex and contested concept with growing understanding of multi-literacies in other semiotic modes, particularly digital literacy and visual literacy (Cope & Kalantzis, 2009), pluri-literacies across different languages (Garcia, Bartlett, & Kleifgen, 2007), and literacy as social practice rather than just a cognitive process (Street, 1995). There is also the additional distinction between what was historically known as ‘functional’ literacy and more recent treatments of critical literacy, being the capacity to comprehend the ideological investments informing the text, now considered essential in a post-truth world of proliferating digital texts. Beyond different types and understandings of literacy, there have also been significant politicised debates (Ellis & Moss, 2013) around early literacy pedagogies with ‘literacy wars’ (Snyder, 2008) pitting advocates of phonics and ‘basic skills’ against others using more psycholinguistic cuing approaches, ‘whole language’ approaches, genre-based pedagogy or literature-based approaches.

The ‘**Four Resources Model**’ (Freebody & Luke, 1990) was an influential attempt to manage and reconcile these different approaches to literacy into a heuristic composite – each ‘resource’ being considered necessary but not sufficient in itself: ‘A successful reader in our society needs to develop and sustain the resources to adopt four related roles: code breaker (“how do I crack this?”), text participant (“what does this mean?”), text user (“what do I do within this, here and now?”) and text analyst (“what does all this do to me?”)’ (p.7). The authors argued that there is no necessary developmental sequence among the roles. Rather, literacy programmes should seek to build all four roles at any stage of literacy instruction. Public concerns about low levels of literacy achievement, however, tend to reference the code breaker role in early years, and perhaps the text participant role in later years.

Marie Clay’s ‘**Reading Recovery**’ is perhaps the best known, most widely used, and most researched programme for intervening in poor early literacy achievement in Anglophone nations. Developed in the 1970s, Reading Recovery preceded the new literacy studies mentioned above, and concentrates on alphabetic decoding, comprehension and fluency (Lipp & Helfrich, 2016), that is, the ‘code breaker’ role. The programme involves daily individualised lessons of 30 minutes with a specialist teacher over approximately 20 weeks in the first years of schooling<sup>4</sup>. Large scale evaluations (Gray, Goldsworthy, May, & Sirinides, 2017) and meta-analyses (D’Agostino & Harmey, 2016) report strong evidence of significant impact on participating students’ literacy levels.

The Reading Recovery programme depends on branded training of specialist teachers in a one year part-time course. This raises the question of whether such knowledge and strategies might benefit mainstream classroom teachers (Lipp & Helfrich, 2016) in Attainment Challenge settings. UCL hosts the Reading Recovery Europe centre<sup>5</sup> which maintains a network of training centres, including some listed in Scotland. The International Literacy Association (2020) reports on a large scale survey of its members from 65 different

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<sup>4</sup>for more information see <https://www.ucl.ac.uk/reading-recovery-europe/reading-recovery>

<sup>5</sup> <https://www.ucl.ac.uk/reading-recovery-europe/reading-recovery>

countries in its *'What's hot in literacy'* report, and highlights that 'According to respondents, the greatest barrier to equity is the variability of teacher knowledge and teaching effectiveness. Throughout the report, respondents cite differences in teacher preparation programmes and the availability of and support for ongoing professional learning and development' (p.7). This could be understood to reflect the diversity of respondents' contexts, but also the contested nature of the concept of literacy and its pedagogies. The majority of their respondents endorsed a 'balanced' approach to literacy pedagogy, drawing from the variety of pedagogical approaches, rather than buying into polarised debates.

Another response to address poor literacy outcomes has been **Family Literacy** programmes (Tett & Crowther, 1998). These initiatives work to increase parent's and children's voluntary engagement in reading and related activities such as reading at home and visiting the library (Kim & Byington, 2016). They also aim to address the 'vocabulary gap' between more and less educated strata of society (Quigley, 2018). These are typically offered in poorer and/or migrant communities for pre-schoolers and resonate with Education Scotland's (2018) 'Family Learning Framework'.

As schooling proceeds, literacy learning has to address the particular demands of content areas and disciplines. The **genre approach** (Christie, 2008; Derewianka, 1990; Martin, 2009) was developed by the Systemic Functionalist school of linguistics as a pedagogy to help students recognise, understand and construct the different kinds of texts required across the curriculum in terms of their different structures, styles and language choices. It involves the 'genre cycle' pedagogy (Rose & Martin, 2012) which consists of: building knowledge in the topic field, modelling the kind of text, deconstructing its elements and structure together, jointly constructing a new text discussing what kinds of choices may be better than others, then students independently constructing a text. This attention to disciplinary language and literacy is considered important knowledge for secondary teachers in any subject area (Love, 2010). This sociolinguistic approach is also highly relevant to the needs of ESL learners.

For the purposes of the Scottish Attainment Challenge, these resources offer:

- an elaborated model of literacy to help identify and articulate the dimension or literacy role most of concern;
- a model of a successful but resource intensive intervention programme with well researched credentials and professional training curriculum;
- possible ideas for integrating literacy learning in the Family Learning strategy;
- a pedagogy to continue learning about reading and writing texts across the curriculum in the secondary schools.

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### 3. Preparation in numeracy pedagogies

Numeracy is one of the key target areas for the Scottish Attainment Challenge and a body of research, though not a large one, does examine the integration of social justice or equity-oriented practice in this field. The *Journal of Mathematics Teacher Education* published two special issues on the subject in 2009 aimed at raising the engagement of researchers with the issue.

Turner and Drake (2016) offer a review of research of how ITE students learn about equity considerations in mathematics teaching. They argue that such preparation must explore cognitive understandings of children's mathematical thinking alongside cultural learning to appreciate children's 'cultural funds of knowledge' about maths that they will bring from their social settings. They argue that both these elements, the cognitive and the cultural, 'have been shown to support the learning, participation, and identities of diverse groups of students' (p. 32). In the same way, they acknowledge that ITE students also bring their own orientations, beliefs and practices from their past experiences, and thus build a complex picture of how these different communities of practice intersect in the maths classroom.

More examples below offer informative theoretical and practical dimensions that can be further explored but highlight the need for more sustained and better integrated approaches. Also highlighted in the literature review is the need to establish a shared and coherent theoretical framing among mathematics teacher educators in relation to their interpretations of equity (Lee et al., 2018) or decide whether aspirations are to achieve moderate, liberal or radical social justice, as Gates and Jorgensen (2009) frame it. Swanson et al. (2017) set this as a direct challenge to mathematics educators in Scotland and internationally, to recognise the sociocultural basis of constructions of ability endemic within maths and their profound exclusionary implications (see also Gutstein, 2006; Ernest et al., 2016; Bartell, 2018).

#### Integrating social justice within mathematics education

Boylan (2009) explored how a relational approach to integrating social justice within mathematics teaching helped to open up an emotional space for teaching students that could impact on their view of teaching and learning, and how they intended to teach. The process made use of '**Creative action methods**' which involve dramatic, interactive and experiential tools to promote high levels of engagement and embodied learning. Students took part in four participative enactments: 1) different styles of maths classroom and 2) different maths teacher, 3) an account of a painful individual history of maths education, and 4) case histories of a diversity of pupils in one classroom. The ITE students then undertook shared and individual critical reflections. While the overall change in students' attitudes and perceptions was positive, he also notes that a minority of students were resistant to the process and did not accept its connection to maths teaching. He interprets this as a conflict with pre-existing maths identities that would also warrant examination. De Freitas and Zolkower (2009) offer another study of specific approaches to addressing maths identities in the context of teacher education.

Boylan does not make transformative claims for the intervention in terms of the depth of social justice understanding developed but offers it as an initial stage. This chimes with Garii and Rule (2009) who examined a social justice intervention across the wider STEM subjects. Students produced posters following an intervention requiring them to develop a set of STEM lessons that integrated one of three aspects of social justice (diversity, system disparities in human communities and stewardship of the earth). They found a surface level of change but proposed that more systemic integration of social justice practice within STEM (and/or mathematics) content development is necessary to engender real change.

#### Programmatic models

By way of complete contrast, an alternative perspective is offered by **'Maths Recovery'**. This is a programme, initially developed in Australia, that is explicitly designed for students with low attainment rather than addressing attainment within any kind of social context. The name is quite explicit in constructing a learning deficit to be addressed and may be taken as differing in approach to the shared ethos of Scottish teacher education identified in Research Report 1 focused on positive inclusion rather than a difference or deficit-oriented stance. It is based around an intensive programme of 1 to 1 instruction by specially trained tutors who are not classroom-based and generally work with around 20% of pupils in a class, identified through an individual testing scheme. In this way it mirrors aspects of 'Reading Recovery' profiled in the section above.

Maths Recovery is designed for children aged around 6 years old and aims to bring identified 'low attaining' pupils 'up' to a level at which they can function effectively in a 'regular' class setting and appears determinedly neutral on wider pupil circumstances<sup>6</sup>. While Smith et al. (2013) did find some positive impact of the programme after one year, this had disappeared by the second year after the intervention which was concerning given the intensive nature of the programme and expense. The researchers further noted a difference in impact recorded through the programme's own evaluation scheme and externally validated methods with the internal methods showing stronger impact than the external methods after one year but neither of the two approaches demonstrating any sustained impact after two years. The 'fade-out' of effects may not be surprising in itself but undermines the central tenet of the programme that the focused 1-1 interaction and development of transferable strategies at a crucial stage in development will eliminate the need for longer term sustained support. They note that a similar set of findings are evident for the similar 'Reading Recovery' approach focused on literacy. One line of enquiry proposed from these finding centres around the lack of coordination or integration with teaching and learning in the regular classroom setting but, in light of the approaches outlined above, the sense of disassociation of skill from child and social context should also be considered. The work by Smith et al. (2013) does suggest strongly that more systematic investigation should be undertaken if the Maths Recovery programme is considered.

Finally, the **'Primarily Maths'** programme described by Shizu Kutaka et al. (2017) was not specifically designed for disadvantaged children or pre-service teachers, but rather for

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<sup>6</sup> Smith et al (2013) note that some ad hoc contact between the tutor and the class teacher on curricular matters does appear to take place.

practicing teachers. However, as well as an innovative programme that integrates university-based pedagogical training and practice-based intervention, it offers a very clear delineation and examination of the parameters that teacher education programmes could consider in their preparation of students. These include subject content knowledge, maths anxiety in teachers, and the importance of collegiate relationships and practice. It also addresses the complexity of establishing the impact of such programmes, including the consideration of appropriate timeframes for such assessment and usefully examines how a research intervention may interact with concurrent policy and practice changes.

Other issues pertinent to the teaching of Mathematics include dealing with maths anxiety for pupils, ITE students and teachers (Oppermann, Anders, & Hachfeld, 2016; Schmidt et al., 2018; Stoehr, 2016) and the use of out-of-area teachers to cover Maths classes (Ní Ríordáin, Paolucci & O'Dwyer, 2017).

For the purposes of the SAC project, these sources provide ideas and possibilities around:

- creative ways to integrate consideration of social justice and equity in the preparation of STEM teachers;
- evaluated models of interventions for learners achieving poorly in early childhood Maths. There is perhaps a possibility of inviting ITE students to serve as tutors in such support to mutual benefit;
- a strategy to support and improve the teaching of maths through teacher collaboration.

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#### 4. Preparation in health & wellbeing pedagogies

Under the Scottish Attainment Challenge (SAC), 'Health & Wellbeing' is one of the three core focus areas, alongside Literacy and Numeracy. The 'Health and Wellbeing' Experiences and Outcomes in Curriculum for Excellence cover six areas and are supplemented by Benchmarking guidance in three areas<sup>7</sup>. 'Health & Wellbeing' is also a responsibility of all staff, cutting across the curriculum and reflecting the commitment to enabling children to develop as Confident Individuals, Effective Contributors and Responsible Citizens as well as Successful Learners. The centrality of these 'four capacities' has been restated in the recent 'Refreshed Curriculum for Excellence Narrative'<sup>8</sup>. The SAC is also underpinned by Scotland's rights-based approach to children's wellbeing, GIRFEC<sup>9</sup>, and the National Improvement Framework<sup>10</sup>, which has improvement in children's Health and Wellbeing as one of four key priorities<sup>11</sup>.

There was little evidence of the combined term 'Health and Wellbeing' in the literature. There is other work particularly by Noddings (2015) on 'ethics of care' that shares some common interests and concerns. There is also work that is somewhat critical of the 'therapeutic' turn (Ecclestone & Hayes, 2009).

Spratt and Thorburn are Scottish exemplars in this field. Thorburn (2014) traces the development of Scotland's curricular focus on health and wellbeing and its associated curricular guidelines, then its philosophical underpinnings. The author notes both the ambition and the potential of the initiative. Spratt (2016) offers a discourse analysis of how the Scottish policy embedding health and wellbeing across the curriculum is interpreted variously within policy documents and then by policy actors and teachers to demonstrate the chicken and egg relationship between wellbeing and learning. Thorburn (2017) offers a similar design of policy analysis and interviews with policy stakeholders in secondary school contexts to conclude that there was at that stage 'little policy contestation' but 'variable engagement' (p. 737).

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<sup>7</sup> Note: It is beyond the scope of this review to address these individually. (Es&Os: Mental, emotional, social and physical wellbeing, Planning for choices and changes, Physical education, physical activity and sport, Food and health, Substance misuse, Relationships, sexual health and parenthood. <https://education.gov.scot/Documents/health-and-wellbeing-eo.pdf>; Benchmarking: Food and health, Personal and social education, Physical Education. <https://education.gov.scot/improvement/learning-resources/curriculum-for-excellence-benchmarks/>)

<sup>8</sup> <https://scotlandscurriculum.scot/>

<sup>9</sup> <https://www.gov.scot/policies/girfec/wellbeing-indicators-shanarri/>

<sup>10</sup> <https://www.gov.scot/policies/schools/national-improvement-framework/>

<sup>11</sup> Further context in this category is provided by Scottish Government's revised policy guidance on ethos, culture, relationships and behaviour ( June 2018 <https://www.gov.scot/publications/developing-positive-whole-school-ethos-culture-relationships-learning-behaviour/>) and review of Personal and Social Education (January 2019 <https://www.gov.scot/publications/review-personal-social-education-preparing-scotlands-children-young-people-learning-work-life/>) and an NHS Health Scotland review of health and wellbeing interventions in a school setting that could contribute to reducing inequalities in educational outcomes (February 2018 <http://www.healthscotland.scot/media/1694/reducing-the-attainment-gap-the-role-of-health-and-wellbeing-interventions-in-schools.pdf>)

Other relevant approaches were evident coalescing around the cultivation of an ethic of care, 'whole child' approaches and relational and affective involvement in teaching and learning. These are by no means new or innovative approaches; there was more a sense of them having become lost to view within current neoliberal manifestations of education (Conklin and Hughes, 2016). The recent literature then, rather than proposing new approaches, was focused on providing pedagogical frameworks within which current teacher education programmes might better assess and evidence how such approaches are being, or could be, effectively implemented. This chimes with Thorburn's (2017) finding of an array of valuable but disparate and uncollected practice among secondary schools following the introduction of Curriculum for Excellence after 2010.

### Frameworks for health and wellbeing pedagogies

Conklin & Hughes (2016) site their work specifically within the context of attempts to address social justice issues within education, such as the SAC, with the aim of identifying the key features of 'compassionate, critical, justice-oriented' teacher education' (p. 47). They draw on a qualitative study across two university-based teacher education programmes in urban settings in the USA to suggest a framework of dimensions that need to be addressed in teacher education: 1) the development of relationships and sense of community within classes; 2) engaging with student teachers' own experience and attitudes; 3) introducing student teachers to multiple perspectives on viewing the world; 4) providing a vision of 'equitable intellectually challenging teaching' (p. 50). While acknowledging the 'fundamentally messy, human, complex, relational practices' (p.50) they are attempting to systematize, they proceed in recognition that the gains of enabling more systematic and high profile practice addressing these issues are likely to be high. Within each dimension, they also provide a wealth of micro-practices that are likely to be recognisable to many working within initial teacher education in Scotland even if not particularly visible within the research literature.

Warren (2017) examines practice for fostering better relationships through extending student teachers' responsiveness to multiple contexts and perspectives beyond their own experience using a 'culturally responsive pedagogy'<sup>12</sup>. She proposes modelling and supporting students in developing 'empathy operationalised through perspective taking' (p. 169), again proposing a new focus within a combination of already common elements within teacher education programmes – field experiences, critical classroom discourse within taught elements, engaging with literature that centres race and equity across the full teacher education curriculum; and critical self –reflection.

In other studies, te Riele et al. (2017) emphasise a relational model of schooling explicitly framed by concepts of affective justice, affective labour, solidarity between teachers and marginalised young people, and an ethics of care. Importantly they are clear that this must be matched by high quality curriculum and pedagogical practice with both aspects cumulatively vital. They developed this model within an alternative education setting with experienced teachers who had also worked in mainstream settings. Working with student teachers, Fletcher & Baker (2013) found that while they explicitly recognised and valued the

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<sup>12</sup> This area is also drawn upon in section 6. Knowledge of the student and their communities.



impact of building a sense of community in the classroom on learning while in the context of their teacher education programme, only a few students carried this over into their school context in a meaningful way. The researchers emphasised the need to recognise the additional pressures that act against sustaining such practice. (cf Walker & Gleaves, 2016, who looked at different kinds of distorting effects, in their case on higher education lecturers some of whom, while they felt ‘compelled to care’, did not integrate this need within their pedagogical practice).

#### Addressing Adverse Childhood Experiences (ACEs).

In the interviews for the Research Question 2 report, some stakeholders felt ITE students could be better prepared in addressing Adverse Childhood Experiences (ACEs). This reflects the focus on ACEs in relation to the SHANARRI wellbeing indicators<sup>13</sup> at the heart of GIRFEC. This was not an area apparent in the literature reviewed, despite its recent high recent profile in Scotland. Again, it may be a matter of systematizing and researching Scottish practice in this area in order to better understand how it might be integrated within initial teacher education.

A report by Scottish Charity, IRISS, (Smith, 2018) reported that there is limited conclusive evidence on the success of trauma-informed practice, while noting the relevance of these issues to the SAC. The report proceeds to summarise what research has been done, and also gives links to valuable ITE resources<sup>14</sup> in the form of brief videos by Bath Spa University. These resources are based on the premise that ‘[e]ducators must establish attachment-like relationships with their students, particularly with challenging and vulnerable children and young people, in order to improve their chances of learning and achieving.’

For the purposes of the SAC, the above work documents

- the multiple disciplines and approaches contributing to this developing field;
- the importance of building strong relationships with the most vulnerable children;
- the possibility of modelling H&WB approaches in ITE programmes themselves;
- some valuable resources for use in ITE.

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<sup>13</sup> <https://www.gov.scot/policies/girfec/wellbeing-indicators-shanarri/> Safe, Healthy, Achieving, Nurtured, Active, Respected, Responsible, Included

<sup>14</sup> <https://www.iriss.org.uk/resources/esss-outlines/aces>



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## 5. Reframing schooling

Concerns and critiques of the performative agenda around schools have currently manifested widely across the world have been dominant in recent literature. Biesta (2019, p.657) exemplifies this in noting the heightened tensions within which schooling now operates:

the modern school is under a relentless pressure to perform and the standards for such performance are increasingly being set by the global education measurement industry. All this puts a pressure on schools, teachers and students but also on policy makers and politicians, who all seem to have been caught up in a global education rat race.

Reframing schooling is however a recurring theme in education research, with Scotland having been involved in many previous iterations of such debates, for example, on child-centred education as far back as the 1960s/70, and with the reframing inherent in the Curriculum for Excellence vision, and the rights-based approach enacted through GIRFEC having gained recognition more recently. Most recently, the impact of COVID-19 school closures has sparked conversations about how schooling will need to be done differently when schools return.

A current theme more within the immediate scope of preparing teachers to work effectively in communities of high deprivation relates to the role of education in the face of global crises of democracy, inequality, climate change and biodiversity loss. This is encompassed in Scottish education policy under the pupil entitlement to 'Learning for Sustainability' (e.g. Leask et al., 2019) which has also gained international profile<sup>15</sup>. In the context of this project this is important as, despite the increased mainstreaming, for example, of the concept of climate justice which recognises the disproportionate impact of climate change on communities of high deprivation, such issues are still sometimes perceived by teachers as primarily of interest to middle class students (Goren and Yemini, 2017).

Project members have highlighted environmental concerns<sup>16</sup> in particular, proposing a focus on siting schooling more firmly both within local places, and within nature and the outdoors as a means of enriching and enhancing pupil engagement within communities of high deprivation (Gray et al, 2019). This proposal is situated within a rich research literature of rethinking learning spaces, including physical school design<sup>17</sup>, which may be of interest in the context of social distancing measures under the global covid-19 pandemic<sup>18</sup>.

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<sup>15</sup> <https://sustainabledevelopment.un.org/content/documents/1682Shaping%20the%20future%20we%20want.pdf>

<sup>16</sup> The more social justice oriented aspects of 'Learning for Sustainability' - global citizenship, political literacy and rights-based education – being more salient in categories 4, 6 and 7 in the context of this review.

<sup>17</sup> School design is also addressed under 'Learning for Sustainability' and was the focus of a coordinated approach in England under the 'Building Schools for the Future' programme between 2004 and 2010

<sup>18</sup> Note that place-based schooling and awareness of, and interaction with, local community are explored in Section 6.

Notwithstanding this last point, students within university-based teacher education are unlikely to have a direct role in the redesign of the existing school spaces that they work in during their programme. Byers and Imms (2016) and Goodyear et al. (2018) demonstrate however that, whether a reconfiguration of space be radical or minimal, the impact of any physical changes depend upon developing teachers' capacity and pedagogical knowledge to maximize any space's potential, as well as their openness in the first place to the idea that space and how it might be used is an important variable in their teaching. An obvious corollary here is virtual learning and the opportunity it offers to reimagine how schooling is done.

#### Building student teachers' pedagogical knowledge of learning spaces.

As Kollar et al. (2014) point out, designers of new learning spaces should be aware that the promise of their new environment will not be spontaneously realized. (cf Skamp, 2009; Tan & Atencio, 2016, with regard to outdoor spaces). Goodyear et al. (2018) acknowledge that users, in this case pupils and teachers, mostly react unconsciously to their environment and elucidating that experience is complex. They offer a practice-oriented 'actionable knowledge' framework to better facilitate collaboration between users and designers, architects and researchers of learning spaces.

More directly transferable perhaps to the initial teacher education context is McNeil and Borg's (2018) systemic descriptive framework. This was developed through a grounded analysis of an existing body of literature on SCALE-UP and TEAL approaches<sup>19</sup> to understanding and using space in education with the aim of building a more coherent and cumulative research base. The framework articulates elements within three interacting categories: space (including sociopolitical as well as physical-temporal space); teaching approach; and context (including enabling transferability between contexts). While their aim is to support the impact and spread of innovation through a more unified research base, the framework provides a basis for interventions within teacher education programmes. McNeil and Borg (2018) highlight that their approach draws on and aligns with some established methods of language teaching.

Continuing the theme of negotiating space within education, Clark's (2010) MOSAIC framework offers a multi-stage iterative process of observation, reporting, reflecting, acting that is more directed at enriching the interactions in space between all actors (pupils, teachers, parents, communities) and , in the process of design and learning from design, with professionals in that sphere too<sup>20</sup>. Clark draws heavily on the Reggio-Emilia approach which has long been an important influence on the development of early years teacher education in Scotland so that a prime motivation is enabling a focus on the child's perspective. Her methods offer a means of deepening student teachers' understanding and practice with regard to pupil voice which has wide relevance beyond the immediate focus on space.

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<sup>19</sup> SCALE-UP (Student-Centred Active Learning Environment with Upside-down Pedagogies) and TEAL (Technology Enhanced Active Learning, a development out of SCALE-UP) were pioneered by Robert Beichner at North Carolina State University

<sup>20</sup> Goodyear et al (2018) are also clear that it is the ways that people interact within a space that define it.

## Drama as a means of rethinking learning spaces

In a similar vein, it is worth noting that drama in education has often been a space where classroom use is disrupted and a different ethos and emotional space can be developed within even traditional set-ups (for example, Prentki & Stinson, 2016). Existing work by drama specialists within teacher education programmes could be explored further as a resource in this context. For example, Goldstein (2008) and Goldstein et al. (2014) use research-informed plays as pedagogic tools to bring issues of minority groups and LGBTQ issues into the ITE curriculum and engage students with rich discussions. The Storylines approach, developed in Scotland, extends this creativity over an extended time-frame, using socio-emotional, as well as physical, spaces (e.g. Bell & Harkness, 2013; Mitchell & McNaughton, 2016; and Hoeg Karlsen et al, 2019, for its use with student teachers in Norway). Evidence suggests it can have a particular relevance for pupils disengaged from the education process (e.g. Steingrimsdottir, 2016).

For the purposes of the Scottish Attainment Challenge, this set of resources offer:

- provocative models of how school learning might be otherwise;
- ways to make space and its design a visible variable in ITE programmes to4 enrich learning;
- innovative ITE pedagogies to engage students with social justice and equity issues.

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## 6. Knowledge of the student and their communities

This theme reflects the finding from the Report on Research Question 2<sup>21</sup> that in some stakeholders' opinion, students might be better prepared through the provision of direct experience and involvement within communities of multiple deprivation. This was viewed as one way to broaden the 'life experience' and worldview of those unfamiliar with such circumstances, as well as increasing empathetic understandings.

### Service learning

Service learning is a well documented pedagogy in teacher education that potentially offers such direct, immersive experience within the localities of schools. It requires student teachers to:

- a) participate in an organized service activity that meets identified community needs, and
- b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility. (Bringle & Hatcher, 1995, cited in Barnes, 2017, p. 221)

It is seen as having particular relevance in preparing student teachers to work in communities of deprivation.

The literature review indicated current issues around the idea of 'service' and the degree to which it implies perceived need that is to be met through resources external to the community, that is, an implicitly deficit view. It might be contrasted with more active, empowered framings of 'civic responsibility' or citizenship (Biesta, 2008) centred within communities themselves. In relation to teacher education, this view might favour a 'strength-based pedagogy' of community engagement that brings the lived experience of pupils and their families to the heart of teaching (Borrero & Sanchez, 2017) with the implication that student teachers are not thinking 'about' pupil's communities as a 'backdrop' to the teacher 'delivering' education but about the implications of teaching and learning taking place within and through communities of deprivation and about the place of the teacher within that complex, dynamic system (Vass, 2017). This issue aligns with the possibility of early career teacher experience within communities of deprivation exemplifying for them the distinction between a 'responsive' stance (awareness, understanding and empathy) or a 'proactive' stance (critical perspective on structural contexts, social justice orientation) stances ( see Report on Research Question 1).

The review thus focused on a range of approaches focused on community engagement including and beyond service learning. Insights from research highlighting community-sited interventions addressing 'intersectionality' and 'culturally responsive teaching' also proved relevant. While these bodies of work vary in the extent to which they entail direct experience 'serving' communities of deprivation, they share a powerful focus on

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<sup>21</sup> <http://www.scde.ac.uk/wp-content/uploads/2020/01/SCDE-SAC-project-report-Oct-2019.pdf>

transforming the world view of student teachers<sup>22</sup> and strengthening recognition of their pupils' wider lived experience in disadvantaged communities as intrinsic to how they learn.

Evidence from across these related approaches suggest their increased knowledge of the students and communities has multiple impacts: enhanced school-community relations; changed beliefs and practices related to teacher and pupil roles and potentialities; heightened awareness of out-of-school lives and interest in the goals, interests, experiences and resources of pupil and their families and communities; development in classroom management strategies; stronger engagement with the socio-political contexts of teaching and learning; understanding of diverse others; enhanced reflective practice; increased confidence in dealing with needs of diverse learners; diminished deficit thinking; increased competence in creating nurturing classroom environments; changed beliefs about the causes of low academic achievement; student teachers better able to consider multiple perspectives; and finally, sustained increased interactions and mutual learning between community members, teacher educators and student teachers.

However, whether such impacts are achieved or not is mediated by a set of factors that could be taken into consideration with regard to Scottish teacher education programmes. These factors are the time and status allocated to community-based experience, nature and extent of staging and of reciprocity framing.

#### Time and status allocated to community-based experience

In order for change to take place in pre-service teachers' knowledge of the student and their communities, sufficient time must be devoted to the experience. Barnes (2017) and Seidl et al. (2015) cite evidence that short experiences can reinforce rather than disrupt assumptions, generalisations and stereotypical thinking about communities of deprivation and the pupils living in them. Similarly, insufficient time may consolidate a sense among students that they are there to 'help out' communities rather than to open themselves up to being in, and learning from, the community. Both studies offer exemplars of extended engagement, covered in more detail below, that achieve shifts in attitude and practice.

The effectiveness of community-based learning within teacher education programmes, especially in relation to the practicum, can also be undermined by its perceived low status. That is, if it appears to students to be an add-on or interesting-but-peripheral aspect of the programme then it is unlikely to achieve any lasting influence. Lasen et al. (2015) demonstrated that linking community-based learning specifically to issues of social justice and environmental sustainability tended to validate the experience from students' perspectives. Harfill and Ling Chow's (2018) approach gave community project-based learning the same programme weight and status as the practicum. They found that such project work resulted in a greater increase in the targeted teacher attributes, such as confidence in dealing with diverse learners, than the school practicum.

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<sup>22</sup> It is worth noting caution against teacher educators making their own deficit assumptions about students' perspectives (Seidl, 2015) and/or neglecting to interrogate their own frameworks of reference – both as individuals and to ensure coherence of approach across programme teams (Guðjónsdóttir & Óskarsdóttir, 2020).



## Nature and extent of staging

Effective staging threading a community-based element through a teacher education programme to consolidate learning is also highlighted. A number of researchers explored methods to open up or 'disrupt' processes with student teachers as a means of ensuring community-based learning truly transformed their understanding and practice. Such methods apply before, during and after the community-sited experience. As Seidl et al. (2015) argue, there is 'no quick fix to unlearning ideas, beliefs, and biases' (p. 295).

Seidl et al.'s '**apprenticeships**' model integrates critical reflection throughout both the experience and programme elements. This recommendation was motivated by findings that when students are out of their comfort zones in community settings, they can respond with resistance, entrenching rather than confronting biases. Instead, the mediation of the process through shared and individual reflective processes worked to hold and examine moments of tension and discomfort to support transformative change (cf. Messiou & Ainscow, 2015).

Barnes (2017) uses a '**community inquiry**' approach, particularly focused on disrupting student teachers' conceptions of school as a place within the community providing order and a sense of control, and opening them up to conceiving of it as an evolving space of children, their families and wider society, as capable of replicating inequity in society as addressing it. She contends that it is only once students have made this kind of transformative leap in their thinking that they can realistically make use of the understanding gained through community-based learning.

Harfill and Ling Chow (2018) argue that it isn't necessarily a question of moving students from a disinterested stance with regard to community-based experience. They noted that a proportion of student teachers (and teacher educators) actively challenged the idea that community-based learning was a necessary part of becoming a teacher. Their process addressed this need to build student understanding of why it was important.

Similar to Barnes' (2017) similar 'funds of knowledge' framing, asset mapping, and place-based approaches that counteract deficit-thinking about communities of deprivation were also proposed as ways of prompting student readiness to benefit from community-based experience (e.g. Borrero & Sanchez, 2017, Tan & Atencio, 2016). Asset mapping is common practice in wider community empowerment work and engages positively with the lived experience of people within disadvantaged communities, recognising, for example, that their personal qualities and support networks can reflect the resilience and strength that is often assumed missing or in need of 'fixing' amongst people experiencing multiple deprivation. Asset mapping approaches also replace entrenched narratives of pity and blame with narratives around social justice challenging the structural bases of marginalisation.

Intrinsic to Barnes' approach is that sustained impact of community engagement can be maximised when student teachers learn to view the tools of research and enquiry developed in community engagement as an extension of their own professional education repertoire. That is, students will learn from the methods of inquiry and action in community



settings as well as any findings. Studies by Hickling-Hudson and Hepple (2020) and Bowman and Gottesman (2017) similarly offer examples extending professional repertoire, respectively in relation to 'public pedagogy', where student teachers engaged in the development of learning in and through community spaces, and to 'seeing place', through a combination of data use, experience, and place-making methods.

Other researchers propose practices aimed more directly at revealing and disrupting students' underlying assumptions and expectations of pupils in communities of deprivation, and about the role of schooling and teachers within such communities. Gomez and Lachuk's (2019) approach, offering multiple guided opportunities for students to critically talk about their interactions with children and families aims to jolt students into confronting and working with rather than suppressing the messy realities of life (cf Shelton & Barnes, 2016).

### Reciprocity framing

Seidl et al. (2015) note the potential for in-community experience to figure as a version of cultural, or in this case, deprivation 'tourism'. While this can be addressed through time, status and staging, Barnes (2017) highlights a guiding requirement for community experience to be set within a reciprocity framework. This means engagement that is mutually beneficial to student and community grouping, aimed at partnership, building 'relationships ... that are based on connections rather than difference' (Barnes 2017, p. 220), not hands-off exploration.

Hardy and Grootenboer (2016) focused their study on one Primary school serving a low SES community to propose a model for how teacher education might cultivate effective '**community partnerships**' that enable students to understand teaching 'as ecologically arranged with other practices within and beyond the physical boundary of the school' (p. 35). This acknowledges complexity but extracts a framework of activities, dialogues and relationship-building across stakeholders within which to situate such work. Messiou and Ainscow's (2015) programme was based within schools rather than university teacher education. However it offers an innovative model where placing the voice of young people at the centre of teacher development could be pivotal in developing genuinely reciprocal relationships across schools and their communities.

The various approaches summarised above raise the following considerations and possibilities of particular relevance to the SAC:

- the benefit of substantial and sustained involvement in community organisations on the basis of reciprocity and partnership;
- the delicate politics around the cultivation of an assets-based approach rather than a deficit approach to communities of high deprivation;
- the importance of carefully guided reflections to process such learning;
- the need to work through student resistance so they understand why they are participating.

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## 7. Deep professional dispositions

This section considers studies concerned with cultivating teacher attitudes as the deep generative principles, values and dispositions that teachers might bring to their work in schools serving communities of high deprivation or poverty. Two relevant dispositions are considered: the cultivation of social justice values, and the cultivation of research as stance for teachers.

### Social justice dispositions and values

In a large US-centric review of teacher preparation research as historically situated practice, Cochran-Smith and Villegas (2015) mapped the field into three distinct programmes emerging over a changing global economy, the emergence of new theory, and demographic changes. They argue that the third broad programme, 'research on teacher preparation for diversity and equity', has developed in response to the trend of 'increasingly diverse student population and growing school inequality' (p. 10), and increasing concern about the achievement gap: 'While the achievement gap is not new, policy makers' attention to the problem is unprecedented, which is not surprising given the assumption that school achievement corresponds to economic growth' (p.11). In the second part of this review (Cochran-Smith et al., 2015), the authors observed that the driving concern in the majority of studies within this programme was how to interrogate and shift students' deficit views of disadvantaged or diverse groups: 'Many of the studies in this cluster assumed that replacing teacher candidates' deficit views about diversity with affirming or asset-oriented views was an essential step in the process of learning to teach' (p. 114).

In the UK, Wrigley (2012, 2019) offers an historical account of how teachers have understood working-class children and their families as less able and less motivated, then explains how the damage of such low expectations and inequitable practice in effect produces poor achievement. He recommends a cascade of interventions that teachers can pursue in and beyond the classroom informed by social justice values rather than overly moralised actions infused by deficit notions.

Mills et al. (2019) distinguish between 'affirmative' and 'transformative' social justice dispositions of teachers to conclude that 'the challenge for redressing educational inequalities is how to foster a transformative activism in teachers' practices, particularly ... by those who work in schools that are educationally and materially advantaged' (p. 615). They understand disposition as 'the tendencies, inclinations and leanings that provide unthought or pre-thought guidance for social practices' (p. 615). While affirmative activist dispositions seek the amelioration of injustice, a transformative activist disposition seeks to change' the deep structures that generate injustice' (p. 617). Next, they distinguish between activism concerned with internal changes in education system, and activism oriented to external conditions, and acknowledge that the transformative external activist teacher is rare. In regard to the internal-transformative orientation:

to have a more transformative effect in schools, pedagogies need to be informed by the belief that all students bring something of value to the learning environment ...

That is, students and families should be regarded as vibrant and richly resourced, rather than as bundles of pathologies to be remedied or rectified. (p.628)

In related work (Gale, Mills & Cross, 2017), this team conceptualise pedagogic work of both teachers and teacher educators through three interweaving elements - belief, design and action - to argue for 'socially inclusive pedagogy developed from the social justice dispositions of teachers and teacher educators' (p. 346). Such pedagogy is underpinned by a disposition characterised by '(a) a belief that all students bring something of value to the learning environment; (b) a design that values difference while also providing access to, and enabling engagement with, dominance; and (c) actions that work with students and their communities' (p. 348). They task teacher education with the job of cultivating such a disposition.

In their review of Anglophone literature on how teacher education might prepare teachers in such social justice values, Mills and Ballantyne (2016) note that the empirical base is limited to typically small scale, qualitative case studies typically exploring the impact of one course. Their analysis revealed a diversity of approaches to social justice and mixed outcomes of intentional effort to instil social justice values. The review notes a multitude of strategies, such as excursions, reflections, service learning, mentoring programmes, field placements, and how such learning continues across the transition to newly qualified teacher. They highlight the powerful combination of 'experiential approaches to learning combined with reflective tasks' (p. 272) but also the risk of such experiences reinforcing stereotypes and paternalistic attitudes unless the reflection is adequately scaffolded. Similarly, some studies suggest 'participatory [experiences] in which students arrive at their own conclusions by interrogating their own lives and experiences, propelled by educators' ongoing questioning' (p. 273), rather than an overly overt attempt to indoctrinate. Another study supported diversity in ITE placements as formative. They suggest that a significant change can be achieved 'where a coherent approach to addressing social justice issues is central to a teacher education program' (p. 270), but also acknowledge the limited capacity of teacher education to make a difference to student attitudes.

In the US, Agarwal et al. (2010) followed their ITE students into their first years of teaching to see whether the commitment to social justice cultivated in their ITE programme translated into professional practice. Their programme involved:

critical autobiographical analysis, which asks preservice teachers to reflect on their identities and social locations to critique the implicit values, long-held assumptions, and biases that underlie their ways of understanding children, communities, and knowledge ... coursework, literature, and assignments designed to explore issues of power, oppression, equity, and social change. Finally, our preservice teachers are asked to design curricula and lesson plans that integrate marginalized knowledge, allow for civic participation, and provoke students to question discriminatory social norms. (pp. 2-3)

Agarwal et al. followed 12 motivated beginning teachers into their different NQT settings. They reported how their participants felt compromised by the strictures and structures of their settings and the demands of their first year of teaching. The authors recommend that,

rather than invoke unrealistic, idealised examples, ITE programmes offer accounts of beginning teachers' efforts and challenges in enacting social justice in their classrooms: 'These programs might also invite a panel of recent graduates to speak candidly with students about both their trials and their successes' (p.9). They also suggest 1) that in their reflections student teachers be encouraged 'take careful stock of what the students learned and accomplished' (p. 10), not just criticize their own practice against some ideal standard; 2) that ITE curricula expose students to relevant texts, experiences informed by social justice values, and jointly develop lesson plans to show how social justice can be enacted in the classroom.

Boylan and Woolsey (2015), teacher educators in England, discuss the pedagogies found in social justice teacher education, 'principally focused on discomforting taken for granted beliefs and dispositions through challenge and inquiry' (p. 63). The pedagogy of discomfort confronts and unsettles student assumptions about their own position and the reproduction of inequities. The pedagogy of inquiry can similarly unsettle student assumptions as they explore the social premises and injustice. Their study profiles four beginning Mathematics teachers in terms of how they understand and express a position on social justice values in irregular and unpredictable ways. They argue for additional pedagogies of respect and compassion as ways to engage ITE students in more complex, contingent and ongoing processes of negotiating a professional identity in relation to social justice values:

compassion because the identity work needed to negotiate changing identity is uncomfortable and challenging, and respect because identity is rooted in personal histories and given that some of the underlying fixed positions are deeply held ethical positions. By engaging with these ethical stances a deeper dialogue about social justice may be enacted. (p. 63)

A large Scottish mixed methods study by Pantić, Taiwo and Martindale (2019), explored 'the links between student teachers' perceptions of their roles as agents of social justice, and their contextualised practices' (p. 221) on the understanding that professional agency will be refracted and conditioned by context. Their analysis of survey and interview data reported that the student teachers were keen to be agents of social justice but felt unsure about their own competence to do so. The participants could identify both potential actions and potential constraints to progress their social justice values in school contexts (pp. 231-232). The conclusion recommended more treatment on how to act on the theory of social justice, 'opportunities for student teachers to work with other professionals and with diverse families during their preparation could be helpful towards building relevant collaborative skills' (p. 234), the possibility of ITE students collaborating with health or social work students, and the use of 'scenario-based learning' and 'simulation interviews based on real-life social justice scenarios' (p. 234).

This collection of studies and their like reinforce the importance given to this work but also paint a complex picture of whether and how ITE might challenge deficit assumptions that students might bring to their work with disadvantaged communities and cultivate a confident and competent expression of social justice values. For the purposes of the Scottish Attainment Challenge, these resources offer:

- strong emerging consensus that social justice starts with work on self-awareness and reflection on one's own positionality through a pedagogy of 'discomfort';
- awareness that such learning continues on placements and over the transition to NQT status across different contextual settings.
- pedagogic attention also to compassion, and respect of other communities' knowledges and ways of knowing;
- greater confidence in the treatment of social justice across a programme, not just in isolated courses;
- recommendation of practical examples or scenarios pitched at a level appropriate to beginning teachers, rather than more ambitious idealised accounts.

#### Inquiry as stance: Practitioner Research in ITE

Practitioner enquiry (or professional enquiry) is now a well established pedagogy in ITE programmes and probationary year in Scotland (Dickson, 2011) and elsewhere (Cochran-Smith, Barnatt, Friedman, & Pine, 2012), justified under a variety of logics. As research in the service of practice, it is considered an essential tool for ongoing professional learning at any career stage producing 'useful knowledge' and fostering teacher meta-cognition devoted to constant improvement (Hall & Wall, 2019, p. 9). It is also considered a valuable path to nurture the profession's engagement with research (Wall, 2018), critical reflection and professional learning communities. Practitioner enquiry can be individual or a collaborative enterprise exploring shared problems (Ermeling, 2010). It has been associated with the move to Masters level ITE qualifications (Dickson, 2011; Gray, 2013) and with teacher professionalisation agendas (Torrance & Forde, 2017). In ITE, the practitioner enquiry has served to model inquiry-based learning as an alternative to knowledge transmission (Gray, 2013), and to cultivate moral dispositions (Lachuk, Gísladóttir & DeGraff, 2019).

A comparative study conducted in the Netherlands and Australia by van Katwijk, Berry, Jansen and van Veen (2019) reported that the ITE students in both countries appreciated the learning they accrued from their practitioner enquiry and value 'the inquiry habit of mind', but 'they did not expect to conduct research in their future teaching jobs' (p. 8). In Scotland, professional enquiry has been embedded in probationer induction programmes (Hulme, Baumfield, & Payne, 2009), constructing inquiry as an ongoing professional stance not just a preparatory exercise:

The emphasis here is on professional education that is about posing, not just answering, questions, interrogating one's own and others' practices and assumptions, and making classrooms sites for inquiry—that is, learning how to teach and improve one's teaching by collecting and analyzing the 'data' of daily life in school. (Cochrane-Smith and Lytle, 1999, p. 17)

Cochran-Smith, Barnatt, Friedman and Pine (2012) explored 'how and what teacher candidates learned when they were required to conduct classroom inquiry focused on

student learning outcomes' (p. 17) in the context of a US sector keen to tie teacher education quality to pupil outcomes. This focus resonates with this project's relation to the Scottish Attainment Challenge. Their study involved careful analysis of a diverse sample of student inquiries 'to explore how candidates posed questions, reflected on and analyzed classroom data, and fostered student learning in their classrooms' (p. 21). They found that stronger enquiries posed questions that built from classroom tensions, then 'thoughtfully integrated experience, beliefs, and theories/research into a conceptual framework, rather than simply raising questions about the impact of a particular technique' (p. 22). They characterise this as the difference between asking 'what' and 'why', not just 'how', thus enabling bigger questions about learners and the classroom context that connected with larger theoretical frames:

What consistently distinguished stronger from weaker inquiry papers was the former's capturing the complexity in student learning, matching teaching strategies and measures to broad learning goals, and using the inquiry experience as a springboard for further learning about learning. (p.25)

For Cochrane-Smith et al., the emphasis on student outcomes risked displacing more critical and reflexive questions of social justice and diversity. They judged the stronger papers to have managed both, with a richer, more recursive approach to inquiry compared to the more technical-rationality of the weaker inquiries and their quasi-scientific approach. The authors then turn their findings back on themselves as teacher educators to reflect on their ITE programme and consider how inquiry was presented more as a project for assessment than as a professional disposition. In addition, an overly analytic assessment rubric artificially split the social justice orientation from pupils' learning.

Willegems, Consuegra, Struyven and Engels (2017) conducted a systematic review of 14 English language studies of the empirical case for practitioner research undertaken by ITE students in collaboration with their placement teachers. The majority of studies were from the US, but others from Australia, Canada and Turkey, all typically small scale qualitative studies. They argue that such collaboration relies ultimately on the partnership between school and ITE university. Across the studies, collaboration was usually between mentor teacher and ITE student, but the authors argue that the 'preservice teachers appear to learn more in studies where the collaboration ... follows a design of shared inquiry ... characterized by a less hierarchical collaboration' (p. 242). They also note that the transfer of learning from inquiry to practice needs to be explicitly supported and modelled by the mentor teacher. They note the risk of the ITE student acquiring negative attitudes towards professional inquiry from their mentor teacher. From their review, they conclude that 'the involvement of multiple actors (e.g., teacher educators, social workers) in a non-hierarchical level (shared inquiry) is the most promising for PTs learning' (p. 243), with the teacher educator taking responsibility for creating the sense of 'we': 'If teacher education has the ambition to contribute to equity, we need collaborating teachers who are able to adapt to diverse pupils' needs and make decisions based on inquiry into their pupils' learning.'

Hulme, Cracknell and Owens (2009) report on a hybrid form of practitioner enquiry undertaken through 'trans-professional' collaboration under a policy agenda of integrating children's services in north England. The authors describe the collaborations as 'generative

dialogue' in a 'third space' which enables 'reflections on one's own practice, reflection on the practice of others, and reflection on policy' (p. 538), and challenges disciplinary boundaries and orthodoxies. From their examples of mid-career professionals in health, social work, criminal justice and education collaborating in a shared context of practice, the authors conclude: 'Collaborative multi-professional practitioner enquiry offers a way forward in the development of the shared language and common understandings from which a "trans-professional knowledge base" might grow' (p. 538). They acknowledge the extra difficulty of bringing professionals together, and the need for shared space for groups to develop their questions about practice. This is a promising if ambitious idea that could be of great potential for the Scottish Attainment Challenge given: the multiple forms of contributing deprivation in the communities of interest; schools increasingly engaged in inter-agency work; and stakeholders' recommendation that ITE students would benefit from some exposure to such inter-agency work in this project's previous phase.

For the purposes of the Scottish Attainment Challenge, this literature probes the pedagogic potential of practitioner research for cultivating research as a professional stance and considerations such as:

- carefully shaping enquiries to synthesise larger social justice understandings with the goal of increasing student outcomes to avoid overly technicist approaches to professional enquiry;
- the possibility of using more collaborative models working with the mentor teachers on placement while minimising the hierarchical nature of the relationship;
- considering collaboration with other professionals working with children in high deprivation communities.

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## 8. Targeted teacher education programmes

Teacher education in many national settings has become a site of increasing political scrutiny and experimentation as nations seek to both raise standards and address inequitable outcomes under mechanisms of accountability (Cochran-Smith, 2005). This trend has encouraged experimentation in new ITE programme models, new routes into teacher education, and new providers (Kennedy, 2018; Whiting et al., 2018). This section reviews some of the published accounts of teacher education programmes that are explicitly designed to prepare teachers to work in schools in disadvantaged communities.

### Teach For ...

Teach For America emerged as a major game-changer in teacher education, with its moral zeal and truncated provision (Darling-Hammond, 1994) managed by 'a heterogenous mix of public institutions and private sector organisations' (Olmedo et al., 2013, p. 492). It started as a charity in the US in 1990s, backed by business interests which was devoted to improving schooling for the most disadvantaged children. It has since expanded a 'Teach for All' model across the globe, including England and Wales, but is not recognised for registration purposes in Scotland. Teach First (2018, p. 1), the organisation for the UK version, explains its mission as:

- Finding and developing talented people to teach in schools where the need is greatest.
- Supporting schools to access innovations and partnerships that accelerate their pupils' progress.
- Providing professional development opportunities to teachers, leaders and schools so they can increase their impact on pupils.
- Building a movement of teachers, school leaders, social entrepreneurs, policymakers and business people committed to ending education inequality across all areas of society.

These programmes typically recruit a 'corps' of high-achieving students with undergraduate degrees from elite universities, give them five or six weeks preparation before placing them in highly disadvantaged schools to learn on the job while receiving a salary, supported by a certified programme undertaken at a partner university with no associated fee, and the option to continue on to a Masters. The programme incorporates a focus on developing leadership skills as well as professional learning (Muijs, Chapman & Armstrong, 2013).

Research and evaluations of Teach For programmes tend to fall into two groups: those conducted by the organisations and their affiliates; and those conducted by external parties (Parker & Gale, 2017). As an example of the former, Allen and Allnut (2017) report a small but significant positive effect of Teach First graduates on student GCSE grades (p. 627), though acknowledge mitigating factors in the labour market for 'hard to staff' schools. Similarly, Blanford (2014) gives a celebratory account of the programme's partnerships, its ethos and the ambition of its recruits. As an example of the latter external studies, Crawford-Garrett (2017) explores how TeachFirst New Zealand graduates struggle with the

maverick expectations placed on them as novice teachers to redress deeply structural issues and histories. A second study (Crawford-Garrett, 2018) highlights the programmes' overreliance on the psychological concept of 'grit' as an inadequate response to social and historical inequity: 'A disproportionate focus on grit and resilience has the potential to reinforce narratives of meritocracy and exceptionalism while eliding the complex, sociopolitical context in which schooling is nested' (p. 1070). This concern about the nature of the professional learning and the kind of corporate dispositions it cultivates is echoed by others (Hramiak, 2014; Olmedo et al. 2013; Rice et al., 2015; Southern, 2018).

There is a growing literature monitoring Teach For All programmes. In numbers Teach First constitutes an expensive boutique programme in the UK with recurring concerns over retention of its graduates in the profession (Spicksley, 2019). Nevertheless, the effects of such programmes' implicit critique of conventional higher education programmes are evident in the political interest in fast track preparation of teachers in high shortage categories, and in the public discourse around the need to raise the entry level requirements for ITE as the predictor of future quality.

#### NETDS (National Exceptional Teaching for Disadvantaged Schools)

The National Exceptional Teaching for Disadvantaged Schools (NETDS) programme has been expanding since 2009 and is now in seven ITE sites across Australia as a strategy to prepare, recruit and retain high quality teachers in high poverty settings (Burnett & Lampert, 2019). It recruits high-achieving pre-service teachers after the second year of their four year undergraduate ITE. These students are recruited not at entry point but on the basis of their grade point average achieved across the first two years of their course. This serves as evidence of strong content knowledge. These students take an on-campus subject dealing with critical theories of education, poverty and socially just pedagogies, then undertake their placements in partnered schools in highly disadvantaged communities. The student cohort and partner schools build a strong collaborative network and employment pathway with the result that 'about 90% of NETDS graduates have been offered teaching positions in low SES schools on graduation' (Burnett & Lampert, 2019, p.41) with good career retention.

The programme was a purposeful response to a) the emergence of alternative routes such as Teach for Australia in the ITE field (Burnett & Lampert, 2019) and their implicit critique of mainstream ITE; and b) the marked tendency of high-achieving ITE graduates to work in more advantaged schools after graduation. NETDS thus differs significantly from the Teach For design in its recruitment, its careful nuanced preparation, its critical sensibilities, and its approach to why quality teaching matters: 'high quality teachers, including those with strong knowledge of their teaching areas, remain crucial to a social justice agenda that provides strong teachers for students who have been historically underserved' (Scholes et al., 2017, p. 22). It offers a value-adding specialism embedded within a mainstream ITE programme. Other researchers have documented the formation of a shared professional identity: 'their sense of selves as emerging professionals planning to work with socially and economically disadvantaged students' (Ailwood and Ford, 2017, p. 66). The development of the NETDS initiative has been supported by philanthropic funding (Lampert & Burnett, 2017).

The NETDS programme has developed an international network with other innovative ITE programmes across Canada, US, Spain, Chile, South Africa and the UK targeting poverty-related disadvantage in the particularities of their own settings. In their edited book, Burnett and Lampert (2016) and chapter authors profile the variety of theoretical approaches to deficit constructions of such students, deal with confounding issues of race and colonialism, focus on literacy, relationships with parents and community, ethnographic explorations of local communities, and structured reflection to challenge teachers' own preconceptions.

Another article (Lampert, Ball, Garcia-Carrion, & Burnett, 2019) contrasts the specific contextualised and intersectional dimensions of 'poverties' in sites in US, Spain and Australia and responsive ITE approaches to create more 'hopeful spaces' (p.62). The US case highlights a process of reflective writing and guided introspection and action-research projects in ITE to generate change in practice. The Spanish 'Schools as learning communities' case concentrates on the improved outcomes for the Roma population after improving interactions and a dialogic approach with the community and in the classroom.

#### NEXUS – community-engaged secondary ITE by internship

Following the successful uptake of the NETDS programme, one of the principal researchers relocated and, with state and Federal Government funding, has collaborated with community organisations to develop a prototype of 'a highly mentored, scaffolded employment-based teacher education program' called NEXUS (Lampert, Dommers, de Loma-Osario Ricon, & Browne, in press, p. 16). Students are selected on grade point average and by demonstrated commitment to social justice principles. Students of diverse backgrounds are encouraged to apply. The course is designed as a salaried internship over the life of an accelerated 1.5 year Masters programme to prepare secondary teachers with the dispositions, skills and commitment to work in disadvantaged settings: 'It is an internship where carefully selected participants work as Education Support Workers (teachers' aides) in low socio-economic schools while they complete their Master of Teaching (Secondary).'<sup>23</sup> In their second year, students transition to become full-time teachers in their school with a near full teaching load while completing their course. There are yet to be studies of the programme's outcomes and impacts.

This phased programme is built from an immersive community-engaged approach which embeds teacher education in community services serving marginalised disengaged youth: 'If new teachers are prepared from the beginning to work holistically with communities, new models can emerge that support the most vulnerable students' (Lampert et al., in press, p. 14). The community-engaged approach comes from the work of Zygmunt, Clark and colleagues (Zygmunt, Clark, Clausen, Mucherah, & Tancock, 2016) in the US, whose approach is similar but much more ambitious than that of service learning. By situating teacher education within the community of a high poverty school, and building collaborative, culturally responsive relations between university ITE provider, local school and its community, community-engaged teacher education allows community members to mentor the ITE student and help them understand the funds of knowledge in communities

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<sup>23</sup> <https://www.latrobe.edu.au/school-education/nexus-program>

which may be unlike those the student knows. This approach is more activist, more critical and more engaged at the grassroots of community development.

This section has presented three contemporary models of teacher education specifically designed to prepare teachers for high poverty settings. They offer:

- different templates to consider how such ITE is designed and funded;
- examples of how different parties and interest might differently frame what teachers need to know and do to be good teachers of students in high poverty settings;
- different examples of how to build partnerships and who might contribute to teacher preparation;
- provocations to think about who or what makes for 'quality' teaching in these settings.

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## 9. Mentoring and induction

When the ITE graduate moves into their Probationer year, their process of becoming a teacher and professional learning continues. This section profiles innovative approaches to mentoring, induction and professional learning. The elements included in this section reflect the recommendations of the Donaldson (2011) review that teacher education in Scotland could be better understood as a career-long continuum rather than as discrete phases, with initial teacher education and the induction year better integrated through sustained connections between university, school and local authority employers. Continuing professional development (CPD) was re-conceived as career-long professional learning (CLPL). Webster-Wright (2009, p. 703) explains the difference between the latter two terms by positioning professional learning as ‘continuing, active, social, and related to practice.’

In Scotland, the mentoring role is a formal component within the probationer year but in the international field, a mentor may be appointed within teacher education programmes in a variety of ways and stages. The examples drawn therefore focus on general aspects of the mentor/mentee relationship that may be useful, both in induction and in other mentoring interactions that may occur between student teachers and teacher educators, placement teachers or school leaders.

Mentoring is generally understood as having three general dimensions: supporting the adjustment process of the first teaching post; helping new teachers tackle specific problems that may arise in that first year; enhancing their continuing learning, for example, through observation and feedback (Beek et al., 2019). Without sufficient preparation and effective mentoring support, the ‘reality shock’ of this first transition may be magnified for new teachers working within communities of high deprivation, both in terms of the specific context, and in terms of the requirements of the Attainment Challenge. The reviewed literature did not offer a focus on the particularity of mentoring within such contexts so the examples below are more reflective of generic mentoring innovations that may be seen as relevant by virtue of enhancing effective preparation overall.

### Professional learning through the mentor/mentee relationship

Beek et al. (2019) and Hoffman et al. (2015) highlight that the mentor’s role of enhancing professional learning appears to be the more limited aspect in practice. Trevethan and Sandretto (2017) note this lack not only in relation to the mentee. They contend that a lack of awareness, or at least lack of formalisation, of the learning offered by being a mentor marks a missed opportunity for the development of teacher education through praxis.

Wetzel et al. (2017) exemplifies a reflective practice approach used to move from a transmission model of mentoring to one where the development of both participants is enriched by the mentor also putting themselves within the learning frame. The authors propose a dialogue focused ‘CARE’ model:

- C. the critical conscious examination of our beliefs and practices;
- A. the appreciative stances towards mentees and students;
- R. reflection to learn, make decisions and plan for action; and
- E. experiential learning through genuine teaching that matters for learners. (p. 408)

Wetzel et al. (2017) then conducted a case study within an innovative teacher education programme that pairs ITE students with in-service teachers undergoing more advanced masters study. The model enabled pre- and post- discussions around an observation of classroom practice which was used by the mentor to reframe and sustain the relationship between them as co-learners and co-teachers rather than expert/novice. This design resonates with the collaborative professional enquiries suggested in Section 7. The study also acknowledges how external factors, such as the need to perform an evaluative as well as mentoring role, often mitigate against the development of a more equal relationship and suggests means of countering this through interrogating these issues within the mentoring intervention (see also Naidoo & Kirch, 2016).

Helgevold et al. (2015) note the tendency of mentoring relationships to focus on instructions and organisation, then examine how to shift such relationships from a 'doing' focus to one that is more centred on pupils and their learning. Lesson study (e.g. Dudley 2013) was seen as an effective tool for enabling this reorientation within mentoring practice. Lesson study privileges an inquiry stance within lesson planning but also embeds collaboration among teachers in its process. This resonates with the Quality Teaching rounds discussed below.

#### Peer mentoring and networking approaches

Alternative approaches to mentoring applicable to both initial teacher education and induction include the development of peer mentoring and teacher networks. Behizadeh and Behm Cross (2017) situate their work specifically within the context of 'urban schools with historically underserved youth' (p 280). They examined the impacts of '**Critical Friendship Groups**' in which all participants in the groups articulated benefits from the process. A key change noted was student teachers within their individual contexts moving to reframe deficit views towards their pupils as pedagogical or teacher/pupil relationship issues.

Korhonen et al. (2017) outlines a new Finnish model of teacher education employing a **peer-group mentoring** approach. Their results were mixed with some students dismissive of the approach while others valued it in different ways: for providing peer support, a means of developing one's teacher identity, or seeing themselves within a community of professionals. These researchers were focused on developing better integration of theory and practice through their design. As a new approach, it would be worth tracking its development for lessons for Scottish ITE. Another study of this model (Geeraerts et al., 2015) produced self-reported impacts on students' development of skills and knowledge, strengthening of professional identity, and development of a work community. Ahn (2016) similarly outlines a communal approach to teacher development in Japan.

#### Quality Teaching rounds.

Working from Newmann and Associates (1996) authentic pedagogy categories and the medical pedagogy of clinical rounds, Gore and colleagues have developed, trialled and rigorously evaluated the concept and practice of collaborative '**Quality Teaching rounds**' for professional learning (Bowe and Gore, 2017). Quality Teaching Rounds are a structured

sequence of mutual observations and professional conversations shared by a professional learning community (PLC) being a group of teachers of mixed experience including novice teachers. Each round has three elements:

1. discussion of a professional reading, chosen by a PLC member, which is designed to support the group in developing a shared basis for their professional conversations, learning more about each other's beliefs and values as they pertain to teaching and learning, and exploring implications of policy and school initiatives for their practice (typically 1 hr);
2. classroom observation, in which one PLC member teaches a lesson that is observed by all other members of the PLC (a full lesson length, typically 40–80 min); and
3. individual coding (usually 30 min) followed by group discussion of the lesson by all PLC members, including the teacher (typically 1 to 2 hr), using the Quality Teaching pedagogical framework (see below).

Every PLC member takes their turn to teach an observed lesson. In each round, teachers are encouraged to reflect not only on that lesson, but how it relates to their own practice and to teaching at their school in general. (Gore & Bowe, 2015, p. 78)

The coding involves scoring the observed class against 5-point measures of 18 pedagogic dimensions similar to the Productive Pedagogies reviewed earlier. These dimensions are organised in three categories: 'Intellectual quality', 'quality learning environment' and 'significance'. The exercise of coding someone else's practice is not to evaluate that teacher's practice, but rather for members to articulate and share their own understanding and thinking with the group, then come to a shared understanding about how that dimension works. Having multiple dimensions 'avoids reducing the complex, multi-dimensional enterprise of teaching to a set of teaching skills or practices' (Gore, Lloyd, Smith, Bowe, & Ellis, 2017, p. 101).

Gore and Bowe (2015) report on an interview study with 39 new teachers who participated in Quality Teaching rounds. The participants report increased confidence, greater capacity to participate in professional learning with colleagues and 'moving from survivor to teacher, with greater confidence and a growing sense of being a colleague, of belonging' (p. 83).

In subsequent work, this team conducted a cluster randomised controlled trial involving 192 teachers in 24 schools that had participated in Quality Teaching rounds (Gore, Lloyd, Smith, Bowe, & Ellis, 2017; Gore et al., 2015). Schools were randomly allocated to trial or control groups in carefully stratified samples. They observed two lessons per teacher prior to their participation in rounds, immediately after the rounds for the treatment group, and again six months later. They found a significant and sustained positive effect on teaching quality regardless of type of school or years of teaching experience. This is strong evidence of improved quality rarely available to support investment in a professional learning initiative.

For the purposes of this project, the studies reviewed in this section offer:

- ideas to reorient mentoring conversations to pupils' learning, not just teaching process;

- enhanced role for supervising/mentor teachers in SAC settings in mentee's professional learning to embed professional learning in the particular context;
- bring different sets of people into mentoring conversations, such as peer-group and critical friendship groups;
- a rigorously tested model of professional learning that accommodates and supports novice teachers;
- a design, vocabulary and resource for professional conversations around teaching quality.

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## 10. COVID 19 research

At the time of writing, the COVID-19 virus has placed most of the world under lockdown, closing the physical space of schools, nurseries, colleges and universities for months. Education has been pushed into online mode as possible and/or home learning supported by parents, while a few schools have remained open for the most vulnerable children and children of key workers. Exam schedules have been disrupted with flow on effects in university entrance processes, creating much anxiety and uncertainty. Preparations for the eventual return of all students have considered shorter school weeks and smaller class sizes to accommodate social distancing. These changes will inevitably impact on pedagogy and curriculum and stretch school resources in a time of potential economic crisis.

As lockdown has continued, and the return to school postponed for most, the media discourse has highlighted how the more disadvantaged members of society are the least equipped to participate in online learning or home learning, and the strong likelihood that the existing attainment gap will be exacerbated. While much research has been suspended during the lockdown, 'rapid response' studies about the impact of COVID-19 are the exception. The following section reviews relevant studies that are available at this stage.

At the global scale, **UNESCO's International Commission on the Futures of Education** (2020) has released a report, 'Education in a post-COVID world: Nine ideas for public action' which takes the opportunity to revisit core principles so these are not lost in any pragmatic response to the virus. These principles include global solidarity, the rejection of gross inequalities, and the responsibility of the wealthier to support the poorer as investment in the common good. They appreciate that schools provide more than learning for children living in poverty, and fear that the hard progress made in the last decades may be lost. The reports offers nine key ideas for action, including: education is a common good that should be protected; access to education is a right; resources should be free, not controlled by profit-making interests; teachers need autonomy to respond; students should contribute to decisions; any domestic or international funding for education should be protected; scientific literacy should be prioritized; technology is a tool but not a panacea, and can exacerbate inequalities. 'It is an illusion to think that online learning is the way forward for all' (p. 8). In this way, the report puts a moral frame around any question of how to respond.

In England, the **Education Endowment Foundation (EEF)** has undertaken systematic literature reviews of what evidence is available on the impact of school closure on the attainment gap. These reviews are being updated on an ongoing basis<sup>24</sup>. The research available prior to COVID-19 typically pertained to the 'loss' of learning in reading and mathematics for young children over protracted US summer holidays, so are an 'imperfect guide' (p. 18) to the more troubling effects of the global virus event for all students and their families.

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<sup>24</sup> <https://educationendowmentfoundation.org.uk/covid-19-resources/best-evidence-on-impact-of-school-closures-on-the-attainment-gap/#closeSignup>

The review published in June 2020 (Education Endowment Foundation, 2020, p.4) reports three key findings:

1. School closures are likely to reverse progress made to narrow the gap in the last decade;
2. Supporting effective remote learning will mitigate the extent to which the gap widens;
3. Sustained support will be needed to help disadvantaged pupils catch up.

They also highlight the likelihood of high levels of absence after schools return, and the greater risk in that for more disadvantaged pupils. The review carefully considers how the impact on the gap may be overestimated or underestimated, but concludes:

However, while efforts to support remote learning are likely to have been of considerable benefit to many children, and are likely to have reduced the overall amount of learning loss due to closures, there are indications that, overall, the remote learning that has taken place during school closures is likely to have further widened rather than narrowed the gap. (p. 18)

The report discusses implications and possible responses to help student 'regain' learning, including the need for sustained support using a variety of strategies once schools return, such as the UK government's announcement on 19 June 2020 of funding tutoring for the most disadvantaged pupils in England.

The **Institute of Fiscal Studies**, an independent economics research body in London that contributes to public policy debates, issued a briefing note in May 2020 (IFS, 2020) and full report (Andrew et al., 2020) which received wide media coverage. In partnership with the Institute of Education UCL, they conducted a survey of over 4000 parents of children aged from 4 to 15 across social strata in mid-May 2020. The survey was focused on home learning activities, the home learning resources available in different families, and 'how families and children spend their time on a term-time weekday' (Andrew et al, 2020, p.5). Though limited to simple time-on-task measures, their finds painted a stark contrast between the richest and poorer children's experience of home learning:

School closures are almost certain to increase educational inequalities. Pupils from better-off families are spending longer on home learning; they have access to more individualised resources such as private tutoring or chats with teachers; they have a better home set-up for distance learning; and their parents report feeling more able to support them. Policymakers should already be thinking about how to address the gaps in education that the crisis is widening. (IFS, 2020)

Further, the survey results found that low income parents are less likely to send their children when schools resume: 'This risks a situation where the children struggling the most to cope with home learning remain at home while their better-off classmates are back in the classroom' (IFS 2020).

Another important finding was that 'Almost 60% of the parents of primary school children and almost half of the parents of secondary school children report that they are finding it

quite or very hard to support their children's learning at home' (Andrew et al., 2020, p. 15). The difficulty could reflect either time challenges or task difficulty. This allowed the authors to claim as early as May that 'it is already clear that the COVID-19 crisis is very likely to exacerbate pre-existing inequalities in educational attainment by children's economic backgrounds' (p. 17). The conclusion reflects on how home learning might be made more equal, and which students should be given priority in a staggered return.

**The Sutton Trust** undertakes research and policy advocacy devoted to increasing social mobility in the UK. They have been active in documenting the impact of COVID-19 on young people's life chances in schools, apprenticeships and university access. In April 2020, they issued a report (Cullinane & Montacute, 2020) and a briefing (Sutton Trust 2020) regarding the impact of COVID-19 and school closures on schooling practices. Their treatment uses survey data from teachers in different education sectors to make evident the stark differences in provision for home learning, in particular, the enriched online resources and established online learning platforms provided by private schools compared to reliance on worksheets and workbooks in the most deprived schools, given the reduced access to online resources in the home. Teachers report variable levels and quality of schoolwork returned, with poorer sectors returning less work, and work of poorer quality. More affluent schools were able to provide more devices to support home learning, though less affluent schools reported greater need of such support. In addition, 'schools in the poorest areas are facing a situation where many of their pupils have profound challenges, including access to food, so the provision of such basic needs may be taking precedence' (p. 9).

Children in more privileged homes were reported to be spending more time in home learning and have more money spent on their learning. Private tutoring, usually the privilege of well-off families, suffered a sharp drop given social distancing, but is likely to increase as online services develop to meet demand: 'The overall effect of these changes has been to narrow the 'tuition gap', but this is likely to be temporary, as parents and tuition companies adapt to the new environment' (Cullinane & Montacute, 2020, p. 7). They document the free use of Bramble for such online provision during the lockdown. Across the various types of support schools can give students for home learning, the report draws the same conclusion: 'While children from disadvantaged students will likely need the most help at this time, they are the least likely to have access to the help and resources needed' (Cullinane & Montacute, 2020, p.2). They advocate for 'catch up' provision when schools resume, or in anticipation of schools opening, and also the very basic consideration of meal vouchers.

While the above reports are centred on English education systems, **Lundie and Law** (2020) prepared a report for Scottish Government which presented the findings and policy implications from a survey of 704 teachers, 80% of whom were teachers in Scotland. The survey explored teachers' expectations and concerns about the re-opening of schools post COVID-19 lockdown and the likelihood of various mooted measures. An important finding that has not been explored in the reports above, is the expectation by 85% of respondents that 'much of first term will be spent addressing the social and emotional impacts of social distancing and the COVID-19 pandemic' (p. 4). Here, there is an existing body of relevant



research and practice, in Scotland<sup>25</sup> and further afield, supporting teachers to address through education the impacts of a broad range of ‘controversial issues’, such as natural disasters, climate change, migration, war and terrorism (e.g. Oxfam 2018, Rosenberg et al., 2018, O’Toole and Freisen, 2016, Bautista et al., 2018; Mutch, 2015).

The report raises other concerns if schools remain closed or socially distanced, such as the importance of interaction with peers for early childhood socialisation, better integration with mental health services, and the provision of meaningful pastoral care. Teachers expressed their concern over children’s wellbeing and safety while in lockdown and the fear that many pupils will have lost someone to COVID-19. Such experiences are expected to present as health and emotional wellbeing concerns on return to school which the majority of teachers expect to mitigate the past focus and priority on test results. Analysis of responses by school community (least deprived/most deprived) shows a much greater level of concern about physical and emotional health of students in the most deprived communities. In a similar vein, the level of concerns about home learning were much higher for ‘low attaining’ pupils, compared to their ‘high attaining’ peers (p.11). Other questions revealed high expectations amongst all teachers that the future of schooling will bring major changes, for example, in terms of embedded technology,

This is fast moving territory with new reports and recommendations emerging in the press daily. Combining the evidence of these four reports to date, all give grounds for serious concern about the impact of COVID-19 school closures on the Attainment Gap going forwards, both in the immediate home learning phase, and longer term. They provide food for thought about:

- how school might be done differently after lockdown;
- whose learning should be prioritised;
- strategies to achieve a more equitable distribution of educational resources if home learning continues so disadvantaged sectors of the community are not further disadvantaged;
- how Education Scotland might think about ‘catch up’ strategies for the most vulnerable students. There is perhaps a possibility for ITE students to be involved in tutoring disadvantaged students, to mutual benefit;
- the pastoral care needs precipitated by the pandemic and its economic impact on families;
- how fears about health and safety might be addressed and allayed to encourage timely return by the most vulnerable to schooling;
- renewing efforts and political momentum to address the Attainment gap and its contributing disparities.

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<sup>25</sup> See for example <https://scotdec.org.uk/projects/global-issues-global-subjects/>. A European Commission funded project, ‘Global issues – Global Subjects’, working with Secondary teachers across 10 countries.

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