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'It's an impossible job': pre-service primary teachers' beliefs and attitudes towards differentiation within Scottish ITE

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ABSTRACT

Differentiation is a major challenge within education. To explore the beliefs and attitudes of Pre-Service Teachers (PSTs) towards differentiation, an interpretivist methodology was deployed with PSTs working through a Professional Graduate Diploma in Education (PGDE) within Scotland. Unstructured focus group interviews were conducted and elements of grounded theory and thematic analysis were used for data analysis. From the data, PSTs shared a willingness to differentiate to work towards making teaching and learning accessible for all. However, the three most significant negative themes generated demonstrate tensions PSTs encounter with differentiation: the role of 'ability'; pressure and stress; and conflicting messages.

To support diversity in heterogeneous classrooms, differentiation has, over the last 40 years, become commonplace theoretically and practically (Hamilton and O'Hara 2011; Graham et al. 2021; GTCS, 2021a, 2021b). Frequently, it links to inclusion (Cremin and Arthur 2014, 276) according to Articles 28 and 29 of the United Nations Convention on the Rights of the Child (UN 1989) to affirm that all children, without discrimination, have the right to an appropriate education which concurs with societal and educational expansion to increase the number of children, historically educated separately, within 'mainstream' schools (Chopra 2008).

While perceived student ability traditionally dominates differentiation theory, the practice has developed significantly. The 1994 Salamanca Statement consolidated 'mainstreaming' stating that children commonly labelled ASN (Additional Support Needs), SEN (Special Educational Needs) or LD (Learning Difficulties) should be educated alongside 'mainstream peers' to better ensure the active engagement of all in a wider society (Monsen, Ewing, and Kwoka 2014; UNESCO 1994). Differentiation neither 'just happens' nor is 'innate'; it must be learnt and developed. As with other professional aspects, teacher beliefs, attitudes and values significantly influence differentiation views and practice. Although commonly linked to inclusion for all, for many teachers, students and qualified alike, differentiation is professionally taxing.

This paper examines instances in the development of pre-service teachers' (PSTs) beliefs and attitudes about differentiation in the context of a partnership-focused initial teacher education (ITE) course by focusing on connections between student university and placement experiences. To

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start, we assume that avowed intentions and aims for differentiation and its support in Scottish schools, mark it out as 'good professional practice'. Importantly, achieving equity for all is a priority within Scotland's National Improvement Framework (NIF) which seeks to ensure that ' … every child has the same opportunity to succeed' (Scottish Government 2023a, 2). This paper's originality lies in its focus on the development of PST beliefs about differentiation in situ rather than the activities with which they engaged. We examine their beliefs and experiences, rather than the actual activities by which they attempted to differentiate. In this regard, the work's originality lies in its consideration of differentiation positioning, rather than differentiation enactment.

The paper is in three parts. First, it examines differentiation generally, followed by a discussion of the Scottish policy context and relationships with initial teacher education (ITE). Second, it analyses focus group data with ITE students on a one-year Professional Graduate Diploma in Education (PGDE) at a Scottish university during the academic year 2018/2019. Finally, the paper concludes by detailing possible ways differentiation might feature in ITE to engender positive PST beliefs; policy implications are thus foregrounded.

Differentiation and inclusive education

Within an inclusive education framework, differentiation is positioned as a professionally attainable, learner-centred approach. Focused on the provision of *different and appropriate* material, approaches, outcomes or tasks, differentiation concerns professional matters such as duty, care and education for all. However, over the last four decades, differentiation has been reported as the most difficult professional aspect, particularly for PSTs (Varcoe and Boyle 2014; Veenman 1984). Adopting the premise that teaching quality is an amalgam of 'doing', 'knowing' and 'identifying' teaching (Adams and McLennan 2021), underscores that PST beliefs are relevant to embed differentiation within professional practice. For PSTs to engage in high-quality differentiation, they must examine personal perspectives and experiences, and for these to be acknowledged by ITE-tutors.

Differentiation has issues: attempts to provide for heterogeneous pupil needs present PSTs and experienced professionals with tensions theoretically, ethically, conceptually and practically. As a marker of inclusive practice, differentiation is a broad church and consequently, some argue for a return to 'special education', 'streaming' or 'setting' as mechanisms to meet learner-need and craft 'workable' environments. Arguments originate differently but seem centred either on the belief that meeting everyone's needs is too difficult in busy classrooms (Tomlinson and Imbeau 2012) or that learners learn best when working with those of similar 'abilities' (Hamilton and O'Hara 2011).

Graham et al. (2021) highlight definitional inconsistency which may result in myriad differentiation practices. Associated are two dominant inclusive perspectives: rights-respecting-based versus needs-based. From the former, concerns emerge that differentiation by content and task may pre-determine and limit children's learning (Hart, Drummond, and Mcintyre 2013) and positionality. Conversely, practices in a needs-based approach give children different learning experiences, thus ensuring support and challenge for all (Tomlinson 2017). Differentiation by setting and/or streaming may be viewed as a form of segregation (Graham et al. 2021). Importantly, teaching or learning can often highlight differing inclusion perspectives.

Differentiation by student 'ability' is common across Scottish schools (Education Scotland 2015; Hamilton and O'Hara 2011); accordingly to develop differentiation practice, the Donaldson Report (2011) called for systematic change in ITE and highlighted the role differentiation plays in PST development. Donaldson's developments challenged traditional notions of pupil ability or intelligence and focused on wider professional understanding, such as how socio-economic background can and does influence learning. Furthermore, *How Good Is Our School 4* (Education Scotland (ES) 2015) a school self-evaluation tool, sets inclusive, equality and equity expectations for all learners (quality indicators 3.1 and 3.2).

Differentiation and practice

To plan differentiated teaching is an explicit expectation of the GTCS for provisional and full teacher registration across Scotland (GTCS 2021a, standard 3.1.1). The professional action of differentiation has previously been highlighted as a major theme of challenge for novice and experienced teachers (Varcoe and Boyle 2014; Veenman 1984). Furthermore, anecdotal evidence from interactions between one of the authors here and PSTs elevates that the most difficulty expressed by PSTs over several years in Scotland has been *how* to differentiate to meet the academic needs of all children within the diverse classroom. Against this backdrop, the research here presented shifts in discussions about PST differentiation skills and knowledge, of PST beliefs about differentiation as a precursor to developing actionable skills.

Even though Wan (2017) cites differentiation as one of the most effective tools to progress pupil learning and despite Tomlinson's (2017) view that differentiation should be based on the belief that *all* can varyingly succeed, accord does not exist. We argued above that differentiation seeks to meet the needs of predefined groups (for example, the 'less able') via task, outcome or support variations (Cremin and Arthur 2014; Pollard et al. 2014). This technical perspective originates from a desire to meet the needs of pre-defined 'homogeneous sub-groups': teachers offer provisions differentially matched to the assumption and presumption of pupil 'need'. This relies on the appropriate identification of heterogeneous 'need' augmented through 'homogeneous sub-groups', and the application of practical methods to meet such observations.

Historically, 'need' centred on the application of perceptions of 'ability' or 'intelligence' and the provision of matched tasks through sorting pupils into 'ability groups'. At the end of the twentieth century, there was an effort to expand conceptions of need through Multiple Intelligence Theory (Gardner 1983) or 'learning styles' but these seem now not to pervade educational research or practice. These challenged historical ideas of ability and/or intelligence, so disrupting simplistic interpretations of links between within-person attributes and educational provision. These movements supported the position that differentiation is the expression of value positions concerning a place for all, within an educational framework that acknowledges myriad sources of impact on learning success. While they have come in for criticism, they attempted to ensure education provision through intelligence or learning styles 'portfolios' rather than by organising learning via dubiously organised homogeneous 'ability' groups. Their theoretical positions may be 'flaky' (White 2002) but they stimulated debate about providing a rich learning environment for all.

As an expression of values, meeting heterogeneous needs may be found wanting during ITE. Even though values are at the heart of educationalists' work, a pressing need for practical solutions may obviate values' reflection. The 'here-and-now' of practice may cause the PST to feel she must 'do' rather than 'identify' or 'know' teaching (after Adams and McLennan 2021). As the enactment of differentiation depends upon unique interrelationships between what teachers know, what they can do and what they believe, eliding these is to either reflect with little influence on practice or to action hints and tips with limited professional impact. PSTs' beliefs significantly impact how they differentiate (Monsen, Ewing, and Kwoka 2014; Tomlinson and Imbeau 2010; Varcoe and Boyle 2014) and this undoubtedly impacts teaching and children's learning.

Nonetheless, since the 1980s, differentiation has been cited as PSTs' most common difficulty (Varcoe and Boyle 2014; Veenman 1984) for it challenges assumptions about ability, learner readiness, standards, etc. How teachers differentiate differs across schools, classes and pupils depending on varying funds of PST, and teacher institutional knowledge and perceived next learning steps. Done well, differentiation enables curriculum accessibility for all, enhances equitable educational opportunities, increases pupil motivation and participation and engenders learning success.

Despite this, a major hurdle faced by teachers following fewer traditional and more heterogeneous educational philosophies was that limited practical support was given to help children participate in a wider society (Monsen, Ewing, and Kwoka 2014; Rouse 2008). Additionally, ITE often had

a limited focus on differentiation matters while a 2017 content analysis of Scottish ITE programmes indicated that university time spent on equality had increased (Scottish Government 2017a). Similar findings (Scottish Government 2017b, 4) of readiness to teach highlighted that probationary teachers often do not feel experienced enough to differentiate appropriately. The first review in this latter report emphasised the need to support PSTs to develop praxis in supporting the needs of all learners. While there has been an increase in ITE hours covering equity-related themes generally, these do not readily translate into effective differentiation practices.

However, differentiation approaches can impact negatively children's learning. Indeed, the importance of a positive learner identity has been highlighted to increase motivation and participation. When children are in homogeneous sub-groups resulting from predetermined 'ability' assumptions, Hart, Drummond, and Mcintyre (2013) emphasise that this can exacerbate losses in equity. Boaler, Wiliam, and Brown (2000) posit that fixing expectations about pupil learning often elides formative assessment and slows progression. Possibly, by trying to support all learners through the provision of 'levels' for different children, teachers may be widening learning gaps and setting limits on children's progression. Furthermore, Tomlinson (2017) reports that standardised testing may be an obstacle to promoting differentiation as a value position and subsequently raise barriers that inhibit attainment for various groups of children. Tension exists when trying to provide learning for different children working differently within the same age and stage.

The Scottish context for differentiation

While inclusive methods are enacted differently in many countries, differentiation is often promoted as an effective tool to meet a multiplicity of needs (Wan 2017). Specifically, it is said to support a range of diverse learners within mainstream classrooms (Arthur-Kelly et al. 2013) with avowed intent to include all children (Tomlinson and Imbeau 2010) through 'varied approaches to the content, the process, and/or the product in anticipation of or in response to student differences in readiness, interests, and learning need' (Tomlinson 2017, 10) and based on the belief that all can succeed. Internationally, differentiation practice has become more common as an educator response to meet the diversity inherent in heterogeneous classrooms (Graham et al. 2021; Hamilton and O'Hara 2011).

In keeping with international changes steering differentiation away from the provision of something additional or different for 'some', in the Scottish inclusive education paradigm, differentiation has moved towards provision for 'everyone' (Hart, Drummond, and Mcintyre 2013). This shift is 'believed to have particular relevance to social justice and equity in Scottish Education' (Florian, Young, and Rouse 2010, 710) so broadening understanding of diverse learner needs (Education Act 2004/2009/2017; Standards in Scotland's Schools Etc Act 2000) alongside a more focused learner-centred education (Children and Young People's Act Scotland 2014; Getting It Right for Every Child, 2008). Although a significant number of children within mainstream Scottish schools are recorded as having ASNs (30.9%), differentiation is advanced as an approach to planning effectively to meet all learning needs and is identified as a key feature of the Standards for Provisional and Full Registration (General Teaching Council Scotland (GTCS) 2021a; 2021b).

The NIF (Scottish Government 2023a) identifies a children's rights approach which highlights that *inclusion and targeted support* are one of four key lenses through which workstreams are to be managed (Scottish Government 2023b). While not mentioning differentiation directly, the *Muir Report* (Muir 2022) proposes establishing a new national Scottish education agency with a brief to provide ' … bespoke support and professional learning at regional and local levels' (Muir 2022, 5). It seems contradictory to tailor system-wide developments to meet identified demand while classroom practice remains wedded to pedagogic approaches ignoring multiplicity of needs.

This Scottish shift away from differential provision afforded through, for example, ASN towards wider conceptions of educational need and how to provide for this, positions all teachers as

needing to respond to diversity and plurality. As a feature of contemporary education systems, particularly following the Coronavirus pandemic, meeting the needs of individual children and young people has come to the fore. In its *Coronavirus Special Edition: back to school*, the Organisation for Economic and Social Co-Operation (OECD) (2020, 8) highlighted the need to adjust teaching ' … to the individual learning losses and gains during school closure … ' In Scotland, the report *Scotland's Curriculum for Excellence: into the future* (Organisation for Economic Co-operation and Development (OECD) 2021) noted that multi-level secondary classes caused professional challenges in delivering the curriculum to all. This is also relevant for Scottish primary schools in rural/remote areas particularly where vertical grouping is often deployed. Although the recent *National Discussion on Scottish Education* (Scottish Government 2023b) highlighted a significant need for all involved in education, differentiation was not discussed. The term was also unmentioned in the NIF update (Scottish Government 2023a). However, in ITE differentiation is expected to be utilised to plan and teach effectively to meet learner needs (GTCS 2021a, standard 3.1.1).

Differentiation, ITE and PSTs

For effective differentiation, all children must be valued, and teachers must believe that all can succeed. If learning requires a growth mindset endeavour, then every child should be focused, challenged and engaged. Although research acknowledges that teachers care about their students and enthusiastically support inclusive differentiation approaches, teaching practices often do not align (Brighton 2003). Specifically, for ASNs, a persistent medical model prevails; attention to the learning needs centres on ameliorating 'within person diagnoses' (Rouse 2008). 'Solutions' are 'found' that encapsulate approaches where 'deficiency' foregrounds educational interventions (Adams 2008). While differentiation is more than an 'ASN issue' we note the ubiquity of this medical model. Although inclusion and social justice should form the heart of education and ITE programmes, globally student teachers feel ill-equipped to teach inclusively (cf. Florian and Black-Hawkins 2011; Rouse 2008).

While some hold that ITE should focus on classroom skills (e.g. DfE 2010) research indicates that PST placement engagement is a product and indicator of developing beliefs (Monsen, Ewing, and Kwoka 2014, Black-Hawkins and Florian, 2012, Richardson 1996) that do not always originate in well-reasoned action or evidence. It is important that ITE provides opportunities for an examination thereof (He and Levin 2008) for tacit suppositions about students, curriculum, classrooms, etc. locate emerging teacher assumptions. Unless student teachers examine reasons for action, ITE programmes are unlikely to impact beliefs or practice (Florian, Black-Hawkins, and Rouse 2016).

Importantly, PSTs' beliefs varyingly stem from nascent personal experience and are the product of myriad encounters: their time as a pupil; classroom assistant; observer; or parent/carer perhaps. Personal positioning of education originates in various life events. Praxis (personal, theoretical positions resulting from classroom experience (Roth 2002)) is certainly one placement outcome. However, reliance on personal experience is insufficient; praxis is only valuable in relation to enduring theory with a basis in research-informed endeavours (Adams and McLennan 2021). Without this, praxis becomes hearsay, ideology or mere whimsy.

The research

An examination of praxis is difficult: theory does not always sit with experience and local, professional interactions may challenge personal views. For ITE to contribute to professional development, it must examine how PSTs 'come to know'. In Scotland, political vision is explicit in its desire to reduce the attainment gap within a framework of excellence and equity (Scottish Government 2017c). Given that differentiation is cited as one mechanism to achieve this, it is propitious to identify PSTs' differentiation attitudes and beliefs. Accordingly, research was conducted to answer the question, 'W*hat are the beliefs and attitudes of pre-service teachers towards differentiation?*'

Research design

The research was situated in an interpretivist paradigm where 'reality' depends on individual positioned constructs (cf. Harré 2004) to explore opinions and feelings of attitudes and beliefs of PSTs. We sought to build a situated understanding of phenomena in context (Ritchie and Lewis 2003). The qualitative research method of interviews was utilised.

Sampling strategy

The whole cohort of 2018–19 PGDE Primary Education students was invited to take part in this research project. Clearly highlighted in the introduction to the research was that no student was obliged to take part, and that non-participation would not lead to any detriment in PGDE success. Participation was entirely optional and voluntary. The invitation to all was made at the end of a lecture, not delivered by any of the authors and also via a group email. Any PST who showed interest in participating at this stage was provided with a participation information sheet. This shared further information about the study including their potential involvement, anonymity, confidentiality and that participants had the option to withdraw from the study at any time up until the merging of anonymised data for analytical purposes. It was clearly stated that participation or otherwise in this research would have no bearing on the outcome of their PGDE programme.

Before coming to the interview, participants were given a consent form reiterating these key points. Only PSTs, who consented were interviewed and included in this research project.

Sample

Thirteen out of fifteen PSTs were females and two were males. This is representative of the PGDE gender demographic on the PGDE widely. The age range was twenty-two to fifty-four. Six participants progressed into the PGDE directly following undergraduate (UG) studies. Seven out of nine participants had worked in schools and/or early years' establishments between UG and PGDE studies. Participants thus had varying levels of differentiation knowledge and experience.

Both informant and time triangulation were incorporated to offer validity, improved accuracy and present a fuller picture (Denscombe 2014; King, Horrocks, and Brooks 2018). All interviews, except one, were conducted on different days in March. By March, participants had completed three out of four placements. One interview was conducted in May after all placements were complete. Each participant was interviewed once, and each interview consisted of new participants.

Data collection tools

Data were generated through qualitative, unstructured, mini-focus group interviews. These interviews were most suitable to collect PSTs' opinions, feelings, emotions and experiences (Denscombe 2014). Interviews allowed participants to offer more thoughtful and complex contributions and to explore in greater detail individual experiences and perspectives in an inductive manner (Bryman 2016). Participants controlled their language and their terms which facilitated greater insight into how they thought about the world (King, Horrocks, and Brooks 2018).

The fifteen PGDE Primary PSTs were interviewed in 2019 in three groups of four and one group of three. Each mini-focus group interview elicited PSTs' concepts and theories with one author as moderator.

Each focus group opened with a moderator posed question: 'What are your beliefs and attitudes towards differentiation?' The intention was for participants to steer the conversation. Each focus group was audio-recorded and the moderator took contemporanious notes. Data collection took place face-to-face, before the COVID-19 pandemic.

Data analysis process

Elements of grounded theory and thematic analysis were deployed for data analysis. Data were sorted into concepts and categories formed from the ongoing development of relationships across the data (Gibbs 2018). Middle-range theories evolved (Charmaz and Belgrave 2012). From the open and axial coding, selective coding was generated, and salient points were identified ro inform theory generation (see Table 1).

Ethical considerations

Clearly, when researching with one's students, power imbalance must be considered. To overcome any sampling bias, the whole student cohort was approached to remove feelings of obligation and to 'distance' the focus-group moderator from individual students. The moderator was known to the students; they had taught them previously by large-scale lectures. However, in such teaching situations, it is very difficult for staff-student relationships to develop. Accordingly, the moderator carefully presented the research, parameters for participation and procedures for anonymity/ethics during a large-scale lecture. It was clearly stated that data would remain anonymous and confidential, and that participation would have no bearing on PGDE success and was completely voluntary. Students were asked to contact the moderator so that feelings of coercion could be avoided. Furthermore, as all PGDE assignments are submitted anonymously no staff involved in the research could connect any assignment to any student; this was also reiterated to students. Neither author was involved in supporting any of the students interviewed during their school placement.

Although participants knew the moderator, it was felt this positively contributed to the development of a collaborative, research/working relationship. Students did not seem to participate unwillingly or be stymied in their responses. The moderator was situated: they were, until shortly before the research, a primary school teacher, then they worked in ITE. Hence, 'bracketing' was adopted; the researcher set aside their assumptions and deployed 'inter-subjectivity' to align commonly reported threads (Creswell and Poth 2007). Ethical permission was granted from the Institute of Education at the university in question. The second author acted as the research supervisor.

Results

Overall, PSTs noted that differentiation was necessary to effectively meet diverse learning needs. However, they also felt an overwhelming sense of stress and pressure to differentiate to meet the needs of all learners, partly due to conflicting messages from key influencers. To expand, PSTs believed that differentiation, when used critically to ensure no learner detriment, could progress learning for all. 'Can-do' PST attitudes showcased a willingness to try myriad differentiation to gain experience and expertise. Participants highlighted that ongoing assessment, experiences, knowledge and resources, time and experience with learners were key to ensuring that differentiation through content, process, product and environment is pitched appropriately.

This said, there were much greater feelings of unease. For most, differentiation was a 'hurdle' to 'overcome' during ITE and subsequently. Many felt pressure to succeed not only so they might graduate but also so they might meet the needs of all in their care. They often felt they lacked experience, resources, confidence and knowledge. They believed that at times differentiation by fixed ability grouping was detrimental to pupil identity and learning. As Celine states in interview 3:

> Like, sometimes kids, I think they kind of fall into their group label. If it's ability grouping, they become the lower group.

Importantly, PSTs often received conflicting messages which, in turn, led to further self-doubt and stress. Overall, they believed that differentiation can be effective in meeting diverse learner needs

Table 1. PSTs' beliefs and attitudes towards differentiation.

Categories	Concepts				Main Ideas
	Interview 1	Interview 2	Interview 3	Interview 4	
Positive beliefs: PSTs' beliefs which view differentiation as a positive approach.	Differentiate by ability Trust and respect Necessity for successful learning Differentiate by stage Growth mindset Pupil engagement Environment	Differentiate by ability Trust and respect Necessity for successful learning Differentiate by stage Assessment	Differentiate by ability Trust and respect Necessity for successful learning Growth mindset Assessment	Differentiate by ability Trust and respect Necessity for successful learning Differentiate by support	Differentiation by content (pitched at ability and stage), process, product and environment is necessary to engage pupils and progress learning for all. Trust and respect must be given to pupils using a range of differentiation approaches that do not limit or label learners. Differentiation can be used to foster pupil growth mindset and engagement. Ongoing assessment is crucial to inform how teacher differentiate by content.
Negative beliefs: PSTs' beliefs which view differentiation as a negative approach.	Conflicting messages Limiting Learner identity	Conflicting messages Limiting Learner identity Differentiation is not a necessity for learning	Conflicting messages Limiting Learner identity Differentiate by ability Too much work Disadvantages of pupil choice	Conflicting messages Limiting Differentiate by ability Too much work Disadvantages of pupil choice	PSTs receive many conflicting messages from a range of key influencers in their progression as teachers. These cause high levels of stress and feelings of pressure. Differentiation is too much work making teaching unmanageable. Differentiation by ability can negatively impact learner identity, pupil engagement, confidence and learning. Differentiation by ability can limit pupil learning. Offering pupils choice of work level, can negatively impact learning.

Can-do attitudes: PSTs' attitudes that demonstrate the willingness of PST to 'have a go', try different types of differentiation.	Willing to have a go Assessment Adaptability	Willing to have a go	Willing to have a go Knowledge of learners Not too difficult	Willing to have a go Assessment Differentiated Resources Organisation	PSTs are willing to have a go with a range of differentiation approaches to continue to build knowledge, experience and confidence. Ongoing assessment data help PSTs to determine the next steps for differentiation. With a range of resources, including people, time and physical resources, differentiation is doable and not too difficult.
Can't do attitudes: PSTs' attitudes share barriers to being able to differentiate.	Lack of experience Lack of resources Stress Lack of permission Unmanageable workload Too difficult to manage practicalities and organisation	Lack of experience Lack of resources Stress Lack of permission Too difficult to manage practicalities and organisation	Lack of experience Lack of resources Lack of confidence Lack of knowledge	Lack of experience Unmanageable workload Overwhelming sense of pressure	PSTs feel they lack experience, resources and knowledge leading to a lack of confidence, high levels of stress and pressure. They feel that they are not allowed, or permitted to have a go with a range of differentiation approaches during placement adding to the sense of not being experienced enough. All in all, differentiation is too difficult to put into practice.

and is a vehicle for further expertise. However, the stress and pressure they experienced were often overwhelming making differentiation unmanageable at times (see Figure 1).

Discussion

PSTs expressed positive and negative beliefs, can-do and can't-do attitudes. Within the discussion, we here move away from reporting the findings to concentrate on problematic issues as these were expressed with more significance and purpose. Moreover, as pre-service teacher educators, a key purpose of this research was to consider how to improve ITE experiences to build teacher self-efficacy within this major challenging educational theme of differentiation; thus, the difficulties experienced must be scrutinised. In summary, the themes generated are

- The role for 'ability'
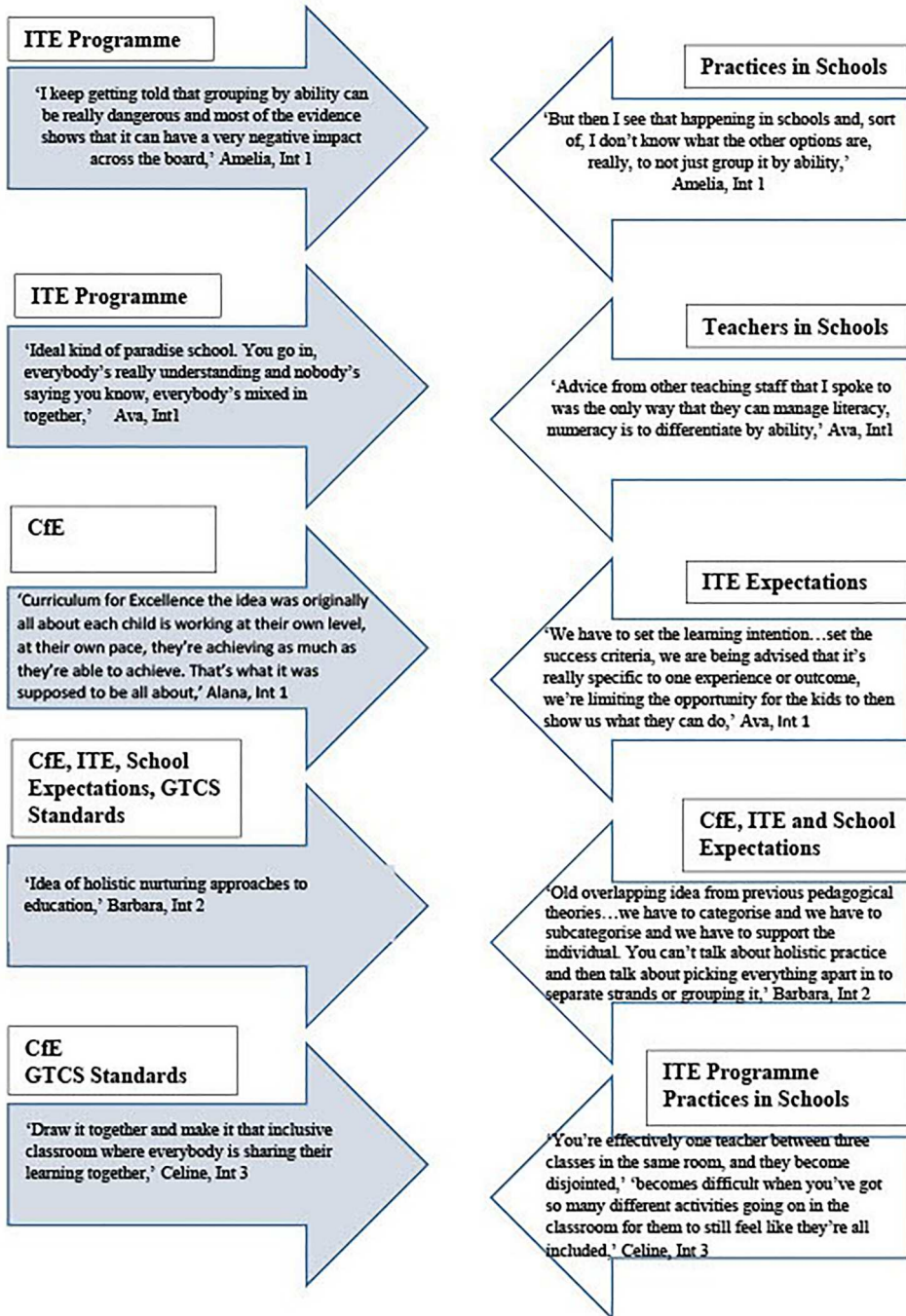- Pressure and stress
- Conflicting messages

Figure 1. Conflicting messages from key influences.

We reiterate here that inclusion and equity are key educational values encompassed within the social justice standard for Full and Provisional Registration for all teachers in Scotland (GTCS 2021a, standard 1.1). Furthermore, Donaldson (GTCS 2021b) reiterated that 'quality teaching is

central to the wellbeing and success of Scotland's Young people', the implication being that all teachers should be supported to develop professionally throughout their careers. Policy-wise, then, significant areas of focus for teacher education and development are developing the ability to be able to address inequalities, ASNs and distressed childhood behaviours (2010, 36).

Furthermore, such International foci position differentiation as vital for practice over time as a professional response to meeting diversity in heterogeneous classrooms (Graham et al. 2021; Hamilton and O'Hara 2011). As evidenced previously (see Figure 1), PSTs grapple with educational values and expectations from a range of key influencers and their own beliefs and attitudes in pursuit of differentiating inclusively.

The role for ability

Ability, within differentiation, is perceived as Janus-faced: both advantageous and disadvantageous. Participants viewed differentiation by 'ability' to be crucial to ensuring each child is taught at their point of need. As expressed by Ava in interview 1 when discussing differentiation by level of English language

> If they're actually achieving well in that setting with a range of peers, is that not a healthier approach than limited support and a really acute awareness that you're not quite at the level of your peers?

This seemingly stemmed from frequent observations of the practice they undertook (cf. Hamilton and O'Hara 2011) even though they may believe such differentiation to be inequitable (Graham et al. 2021; Hamilton and O'Hara 2011). Participants believed differentiation by 'ability' limits pupil learning, and negatively impacts pupils' personal and social identities (Hart, Drummond, and Mcintyre 2013), while being time-consuming for the teacher.

> If you were doing it in by ability, their self-esteem and stuff would suffer. (Bambi, interview 2)

Furthermore, PSTs believed that differentiation by 'ability' can segregate and/or exclude pupils from learning, thus opposing inclusive philosophy (Tomlinson 2017). PSTs, then, were faced with contrasting rights-respecting versus needs-based education within ITE and schools. PSTs appeared to understand that often when educators strive to provide for 'all' by differentiating for 'some', this may exacerbate the marginalisation of those children whom they were originally seeking to include by placing limits on learning. What emerges here is a practice/philosophy paradox: while the practice of differentiation may seemingly offer succour to children who might otherwise have their struggles elevated for all to see, the underlying inclusive philosophy may contrast (cf. Hamilton and O'Hara 2011). Indeed, Black-Hawkins and Florian (2012, 568) note that there are ' … too many practices in schools called "inclusive" when in fact they serve only to reproduce the problems they set out to solve'.

Pressure and stress

The Scottish Universities' Inclusion Group recently shared that what makes differentiation inclusive may not be explicitly expressed within ITE or schools (Cantali, Florian, and Graham 2022). This makes it more difficult for PSTs to enact their educational values of inclusion and equity through differentiation in an evidence-based, informed and confident manner; conflicting messages perceived by PSTs about differentiation hence led to stress and uncertainty. Expressed alternatively, this is suggestive of the oft-noted dichotomy between (as noted in Figure 1) child-centred (on the left) and teacher-centred (on the right). Another key area of conflict is for whose benefit do teachers differentiate: a child-centred approach in a bid to produce successful learners via CfE (The Scottish Government, n.d.) or a methodology employed to 'manage' a diverse classroom? Such perspectives were not evident in the data but are elevated when teacher practice comes to the fore.

Conflicting messages

Underpinning the key themes of feeling pressure and stress while managing conflicting messages stems from a lack of experience, knowledge, agency and confidence (see Table 1). As demonstrated in interview 1 where Amelia spoke about how differentiation is ' … *really difficult*', Abigail shared that she didn't ' … *really feel confident in doing it or that we've really touched on it*' and Ava spoke of guilt,

> … as a trainee teacher … that's, maybe, one- the impact of that one lesson that you have on a child's sense of their own ability, but, actually, what's happened is you've got it wrong.

Furthermore, in interview 2, PSTs often felt stressed and worried about differentiating 'properly', as demonstrated by Barry.

> And to me, differentiation is very- I value it a lot. I think it's crucial. And that is the area that I worry about it, because it's – when you look at it, it's almost like that mountain that you have to climb to so, 'I don't know if I'm going to be there ever'. But you have to just put your head down and go one step at a time'. 'But if I think about differentiation, it's what made me think, "This is an impossible job".

Barbara summed up: '*This is too much for me*'; Bobby and Bambi concurred.

> *The pressure it puts on us, because the huge difference a teacher can make to a student.* (Bobby)

> Because, obviously, we're under so much pressure as it is, as student teachers to meet certain standards and guidelines. Are we putting too much pressure on ourselves? When do we stop? When do we say enough, that's enough differentiation? (Bambi)

These feelings (Beacham and Rouse 2012; Florian and Linklater 2010; Florian, Young, and Rouse 2010; Maciver et al. 2021; Sosu, Mtika, and Colucci-Gray 2010) may result in weak teacher self-efficacy. Indeed, PSTs' self-efficacy determined how well they coped, how much effort they expended and how long both might be sustained when faced with challenges to teaching and learning (Chesnut and Burley 2015).

Teachers' beliefs in being able to perform well or having the locus of control/agency to action change also translate to positive achievements for learners (Morris, Usher, and Chen 2017). Teachers with a keen sense of self-efficacy also demonstrate increased resilience, are more willing to be creative (Jerald 2007) than peers who doubt themselves and are less susceptible to burnout (McCartney et al. 2018). If PSTs experience self-doubt and lack self-efficacy, over and above what might be deemed acceptable in an emerging teacher, then it is challenging for them to oppose segregating practices seen on placement even when their educational values oppose this. This could result in PSTs copying classroom practices they observe (Chesnut and Burley 2015) to be seen to meet the Standards for Provisional Registration (SPR, GTCS 2021a) by key influencers (Figure 1) with a stake in their success. Perhaps the lack of permission to enact the educational values upon which they have spent time critically reflecting could lead to stress, pressure and lack of job satisfaction. Considering this, the sense of pressure and stress to 'Get it Right for Every Child' while faced with two dominant and opposing inclusion perspectives seems to result in conflicting beliefs, attitudes and praxis of differentiation. This, as Barry shared, makes teaching 'an impossible job!'

Recommendations for ITE

Aligning with Graham et al.'s (2021) definition and considering the interdependency and complex tensions between differentiation and inclusion, many of the recommendations below support inclusive practice.

First, we posit that ITE must facilitate PSTs to develop knowledge, theory and practical experience to enact inclusion and differentiation alongside critical reflection to tackle feelings of professional inadequacy (Beacham and Rouse 2012; Florian and Linklater 2010; Florian, Young, and Rouse 2010; Maciver et al. 2021; Sosu, Mtika, and Colucci-Gray 2010). Drawing from a range of school

placement experiences (Florian and Linklater 2010) is a positive feature of an ITE system built on a partnership approach between schools, local authorities and HEIs. Each partner supports PSTs to feel better prepared to tackle conflicting messages, thus lessening self-doubt and stress. This can also bridge ITE HEI-school relationships so facilitating positive beliefs and 'can-do' attitudes. This is not without tension though as the role outcomes for the different educational sectors involved in ITE often present tensions and contradictions that are not easy to manage.

Second, PSTs could be encouraged to explore supportive frameworks and resources to enable them to decipher appropriate differentiation practices. As the National Framework for Inclusion (NFI) in Scotland (SUIG 2022) aligns with Tomlinson's framework for differentiation (2017) and Florian and Spratt's Enacting Inclusion Model (2013). An exploration of these could provide critical reflection, so helping to build bridges between HEI and schools while continually supporting the development of positive beliefs.

Third, an additional framework and bank of certified resources to support teachers' understanding of specific needs could be deployed to tackle feelings of insufficient knowledge and how this can be overcome through a concentration not only on knowledge but also on feelings of developing agency. This could provide significant inter-professional experiences through collaboration with specialists (such as educational psychologists, speech and language therapists, etc.) to explore how the need might be supported. Incorporating this into ITE programmes could assist PSTs to develop knowledge and confidence.

Finally, time should be allotted for PSTs to engage in educational research. Beginner teachers report that often education research is not for them or is inaccessible (McCartney et al. 2018). Increasing accessibility would help beginner teachers value research, increase engagement thereon, support critical reflection and inform the next steps in teaching. Possibly, there is not enough time within a 36-week PGDE programme to enable PSTs to engage sufficiently with such recommendations; feasibly, Scotland should look to extend PGDE time to support PSTs' professional development when tackling major challenges such as differentiation.

Limitations

The research was conducted with a small sample of PSTs from one Scottish university; more participants would, therefore, widen reach. As the research was unfunded, travel, time, convenience and relationship factors will have played a role in accessing participants (Denscombe 2014). As with researching in any community where one is known, participants may have shared views they believed their tutor wanted to hear. However, the positive relationship between the tutor and participants was thought advantageous and seemed to put participants more at ease. For future studies, how data generation is conducted and with whom should continue to be considered.

Conclusion

While it is natural most PSTs upon graduation feel confident about certain matters (see www.mquite. scot), differentiation persists as an area for development. It is unclear whether feelings stem from messages during the HEI part of their programme, time on placement or because differentiation is 'difficult'. Partly, differentiation is a value and philosophical matter and pertains to how PSTs understand: their role; their agency; pupil needs and pedagogic ends. It is, however, also a practical endeavour, one which requires a critique of the provision PSTs feel they *should* and *can* offer and feel they *are* offering.

Differentiation is more than a task: it is a litmus test for myriad teaching positions. It may originate in views that celebrate myriad pupil perspectives and thus encourage an approach based on diagnosing needs and applying mediating techniques. Here, ASN and ability ideas come to the fore and drive classroom and school organisations to provide for 'most pupils' while accepting that such norms might not accommodate all. Ensuing ameliorative organisation manufactures homogeneity;

indeed, the data above indicate this as a major concern. PSTs speak of 'ability' as defining classroom organisation, particularly in maths and how this leads to pressure to 'meet need' but also to be seen to act responsibly to 'fit in'. Such conflicting messages are redolent of HEI/school boundaries and how, while there may be a common desire to meet pupil needs, this is often perceived and actioned very differently.

Conversely, differentiation may generate professional interpretations that seek to deploy mechanisms to specifically work with heterogeneity: approaches *for* all and inclusive *of* all. However, such Human Rights approaches seem often not to be elevated in PST experiences. Evident tensions between practitioners' values and praxis result in conflicting messages and appear to cause significant levels of pressure and stress for PSTs.

Finally, the research for this paper occurred before the COVID-19 pandemic and this further militates against differentiation development unless attention is paid to understanding pupil needs as a *human-rights* issue, rather than something stemming from within-pupil attributes.

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Disclosure statement

Data availability statement

Raw and anonymised data can be requested, in writing, from the corresponding author.

Ethical approval

This research was granted ethical approval by the University of Strathclyde's School of Education.

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