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Research article

The master's element in initial teacher training: what is its value?

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Abstract

A theory–practice divide has beset initial teacher training (ITT) for many decades. In England, there are multiple ways to gain qualified teacher status, which can be broadly categorised into school-led or university-led, with underlying arguments about the relative importance of theory and practice, and how far learning to teach should be seen as an apprenticeship. Government policy has moved towards more prescription with its ITT Core Content Framework, a curriculum that suggests that there is a right way to learn to teach. In this climate, it is important to establish what value universities – and, in particular, the master's element of the Postgraduate Certificate in Education – add to student teachers. Thus, this article asks: What is the contribution of a research-informed master's module to ITT? The findings of the research indicate that the master's module offered opportunities to alter preconceptions and beliefs about teaching and learning; the process of essay writing enhanced critical reflection, which inspired more confidence

in the classroom; and the potential theory–practice divide can be viewed as offering opportunities for enhancing self-efficacy. These findings suggest that master's study has an impact on teachers within their ITT period and beyond it, and have implications for learning processes and content for programmes both in England and internationally.

Keywords critical reflection; initial teacher training; self-efficacy; metacognition

Introduction

The education of primary teachers in England presents a distinctive context due to the variety of routes into teaching, quality assurance and content offered (Menter, 2019). Qualified Teacher Status (QTS) is obtained by completion of programmes that can be school-led or university-led through, for example, the Postgraduate Certificate in Education (PGCE), which is a one- or two-year academic qualification that can include an element of studying at master's level.

Recommendations from the UK government's review of initial teacher training (ITT) emphasise student teachers being able to identify evidence-based practice, which, it is suggested, is a challenge in the light of the 'confusing array of practices' (DfE, 2021: 9) that they may find in schools. The Core Curriculum Framework, which lays out the essential requirements for ITT courses, asserts that 'Trainees need to be taught the curriculum that has been planned for them, and to practise and apply content in a controlled and integrated way, so that theoretical concepts at each stage can be readily applied in classroom contexts' (DfE, 2019: 11). However, the issues that student teachers face are mediated by programmes that offer training that 'must be seamlessly translated into structured and sequenced practice environments' (DfE, 2019: 14). If schools are not drawing on latest research to inform their practice, there will be a gap between theory and practice. It is important for new teachers to be able to develop critical reflection through interrogating research. Consequently, the research question for this case study is: What is the contribution of a research-informed master's module to ITT?

The research was conducted at the IOE (Institute of Education), UCL's Faculty of Education and Society (University College London, UK) Primary PGCE course, which has master's level modules. The master's module under consideration was created following the Bologna Agreement (2006) and the subsequent introduction of master's study to the PGCE in England. This sought to fulfil the requirements of policy (Bonjean, 2018), offering parity between different systems of accreditation for higher education across Europe. The module drew on 10 evidence-informed principles proposed by the Teaching and Learning Research Project (Pollard et al., 2019). The module aims for student teachers to be empowered via critical reflection and engagement with research, marrying theory to practice, and therefore bringing together the professional and academic elements of teacher education through critical analysis, and research-informed pedagogies and perspectives. It is assessed by a 5,000-word essay that student teachers submit for initial written feedback and then work up to a final submission, evaluated against professional master's criteria.

Perspectives of student teachers, alumni in their first year of employment as newly qualified teachers (NQTs), and lecturers were investigated to explore the impact of studying a master's level module. Data were collected using mixed methods: questionnaires, focus groups and semi-structured interviews.

Issues and challenges in ITT: a review of the literature

Fundamental to the literature review has been identifying what might be particular to ITT andragogy to determine what contribution master's study might make. The literature review was undertaken following the identification of key words and phrases indicated by the content and format of the 'research-informed' master's module in this study. Examples of initial search terms used were: master's level study, primary, research informed/based, pedagogy of ITT and student teacher learning. UCL Explore, with a 10-year limitation, was the initial database used. Google Scholar alerts with the same search terms were also set. Additional citations were sourced where referenced by the preliminary search, as were terminology and concepts with seminal roots, such as cognitive dissonance. Literature and research in the field provided

evidence about issues and challenges for primary ITT, both in England and internationally. A range of sometimes conflicting views emerged in describing what student primary teachers need in training programmes, and the potential of research engagement and master's level study in addressing those challenges. The following questions framed the exploration of the literature:

1. What are the key challenges for student teacher learning?
2. What do student teachers need to know, understand and be able to do?
3. What is the place of research in initial teacher training?

One perennial issue that teacher educators face is the impact of student teachers' apprenticeship of observation in classroom contexts as a pupil (Lortie, 2002). Calderhead and Robson (1991) consider this problematic, as student teachers find it challenging to look critically on their personal learning experiences. The experience of learning and the approaches taken by their teachers are considered worthy of emulation. Consequently, they may come to their learning with beliefs about teaching that they have re-captioned as being knowledge. Burn et al. (2015) highlight the powerful influence of student teachers' preconceptions, leading to a fixed notion of 'what works' based on 'what worked for me'. The impact of beliefs contributes to a further challenge: that of a schism between theory and practice.

A perception of a dichotomy between learning in training and practice in school has been pervasive, as research from various countries shows (Falkenberg, 2010; Flores, 2016; Van Nuland, 2011; Korthagen, 2010). Moon (2016) found that where universities have a prime role in ITT, the theory–practice divide appears to be reinforced in both the moves between university and school, and subsequently into careers. Fletcher and Luft's (2011: 33) longitudinal study of secondary science teachers found that the contemporary learning and teaching pedagogies espoused and explored during ITT were abandoned 'when faced with a negative or static school culture, little support from school leadership for implementing reform-based strategies, and the normal feeling of being overwhelmed with teaching that most beginning teachers feel'.

Brooks et al. (2012) examined Secondary PGCE student teacher perceptions of their master's level engagement, and followed the same group post-qualification into schools. The master's element was not significant when they chose where to undertake their PGCE, but when they worked as teachers, they recognised 'the other voices' (Brooks et al., 2012: 298) – the influences of learning from their master's study that were drawn on in reflecting on their practice.

Similarly positive, Knight's (2015) work with Primary PGCE student teachers in Nottingham found that not only did student teachers value their master's level study, but also that their appreciation grew once they assumed roles in schools. Maaranen and Krokfors (2007) explored the reflection and potential learning initiated by the writing of master's theses by ITT student teachers in Finland. This was perceived as being worthwhile and enhanced by professional dialogue and their ability to connect theory and practice. Further support for the writing process was found by Kowalczyk-Walędziak et al.'s (2019) study of in-service teachers' master's thesis writing across five European countries. They found that this enabled autonomous responses to current issues arising in their classroom practice.

Contrasting with proposals for lessening the potential difference between pedagogies espoused in university and school is Kim and Cho's (2014) study of new teachers in the USA. They found that teachers with a higher sense of self-efficacy (Bandura, 1977) felt better able to manage 'reality shock' (Voss and Kunter, 2019). Initiatives such as the Professional Development Schools (PDS) in the USA, designed for synthesising the work undertaken at university and school, have been proposed as offering stronger partnerships with potential for bridging the perceived divide (Allsopp et al., 2006; Robinson and Darling-Hammond, 1994). Rigelman and Ruben (2012) studied the aligning of university and schools, with a synthesis being developed in views and implementation of practice. This was shown to diminish the differences experienced between the two sites of learning. Although student teachers were found to recognise links across school experiences and university work, there seemed to be a necessity for what has been taught in university to be easily realised in school.

To counter the theory–practice divide, the Oxford Internship Scheme offers a clinical practice which integrates experiences from school-based practice with research engagement through 'clinical reasoning', thus promoting 'research-informed clinical practice' (Burn and Mutton, 2015: 218). Student teachers are offered a view of teaching and learning that proposes hypothesis testing, application of judgement and 'not the routinised application of learned repertoires' (Burn and Mutton, 2015: 221). This reinforces a view that theory cannot be blindly applied to school practice, and promotes student teachers' agency.

McIntyre (2009) explains that the theoretical rationale for the efficacy of the Oxford Internship Scheme is that it offers student teachers knowledge and understanding, drawing on a diversity of sources to form ideas to suggest what effective practice might be. A process of reciprocal critical analysis between sites of learning – described as ‘practical theorising’ (McIntyre, 1993) – is central to how student teachers develop their ideas about effective teaching and learning. This rationale also recognises the ‘well-established pre-conceptions’ (McIntyre, 1993: 370) with which student teachers come to their teacher training, and the need for training programmes to help student teachers to recognise the importance of looking critically at their own assumptions as part of their development. Practical theorising seems to offer student teachers a means of developing self-efficacy. In light of the challenges suggested by research and literature, what has been found to answer them must be considered in order to ascertain what initial teacher training programmes need to address.

The thinking that pushes student teachers from intuitive and impulsive use of beliefs and knowledge is defined by Dewey (1933) as reflective thinking. He asserts that this sort of thinking requires training. In Dewey’s eyes, reflection is aimed at dealing with a confusing or problematic situation. It is an ‘active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends’ (Dewey, 1933: 9).

Korthagen (2010) suggests potential for reflection to be superficial for student teachers in particular. This is because the affective – feelings about practice – may lead them to seek quick and easy solutions. He believes that reflection needs to assist student teachers to move thinking from the potentially superficial ‘action-oriented’ – what to do or do better (Schön, 1987) – to ‘meaning-oriented reflection ... aimed at understanding the processes underlying teaching’ (Hoekstra, 2007: 665). His ideas assist in conceptualising the content of reflection; having a clear focus on student teachers developing ‘core qualities’ (Korthagen and Vasalos, 2005: 59); and having agency in their consideration and interpretation of the teaching and learning process. What this seems to omit is the consideration of how student teachers learn to realise this potential – how they might become this reflective individual.

To this end, collective reflection offers additional scope. Van Woerkom (2004) asserts the need for reflection to be contextualised within what Lave and Wenger (1994) describe as communities of practice, where group knowledge and understanding, as well as both inductive and deductive reasoning, can be used in challenging and moving practice forward.

Thus, while reflection and collective reflection are important, to be effective, they must draw on theoretical and research knowledge and understanding. This can be developed by critical reflection where it has two distinctive purposes. The first is ‘to understand how considerations of power undergird, frame and distort so many educational processes and interactions’ (Brookfield, 2017: 5). The second is to ‘question assumptions and practices that seem to make our teaching lives easier, but that end up working against our best long-term interests’ (Brookfield, 2017: 5).

Being informed by research offers student teachers a means by which they can be active in analysis of its potential for their own use in practice. It should help discredited theories in schools to be less pervasive (Carter, 2015). The British Educational Research Association (BERA-RSA, 2014: 5) enquiry into the role of research in teacher education concluded that it plays an important role in developing student teachers as ‘discerning consumers of research’. Gewirtz (2013) asserts the importance of research acumen: developing teacher-scholars. She recognises the importance of teacher self-efficacy in using reflection and analysis to evaluate the potential of research knowledge for practice in their own contexts. It would seem, therefore, that there is an argument that student teachers require ITT to provide them with the ability to draw critically on research-informed knowledge and understanding in order to become effective, autonomous, professional teachers, imbued with a sense of self-efficacy, and aware of the peculiarities and possibilities of their unique contexts. Thus, they are able to make decisions about teaching and learning in their own classrooms, informed by a knowledge of a range of possibilities for teaching effectively.

Theoretical framework

For this study, literature was central in realising the challenges of student teachers’ prior beliefs or preconceptions, and their influence on their potential for learning, and finding a sense of self-efficacy within any competing contexts of school and university. The theoretical framework drew on a view of reflection, collaborative reflection, and iterative views of knowledge and learning as being important in

student teacher learning. Student teachers' capacity for new learning is inextricably linked to personal histories and experiences. This resonates with Vygotsky's (1929) proposals regarding the influence of culture and experiences – ontogenesis – in retaining influence over both the starting point for, and the potential impact of, new learning (Wertsch, 2009). Ontogenesis is positioned as being a starting point for new learning and knowledge, and being future-focused. Interrogation of previous knowledge requires a conceptualisation of it being malleable and subject to iterative (re)conceptualisation. This must be important in any need to alter and reframe student teachers' personal histories and beliefs. Interaction and reflection are essential in mediating the complex experiences of student teachers' relationships between themselves, their educators and the potentially dichotomous contexts of school and university.

The study thus recognised social constructivist proposals of interaction as being key to student teachers' learning, and to underlining effective training.

Methodology

This research explored the impact that master's level study had on student teachers, and whether any impact had impetus beyond the PGCE programme. As a case study, it utilised mixed methods. The data collection followed a concurrent parallel design (Creswell and Plano Clark, 2018).

A purposive sample was drawn initially from the full cohort of Primary PGCE student teachers at the researchers' institution in 2019/20. All were offered the opportunity to complete a questionnaire on two occasions. Ethical approval was granted by the researchers' university. Participants were informed of the voluntary nature of taking part, and were assured of anonymity.

Data instruments

The survey was designed and piloted with student teachers, and undertaken in December and May to see if perceptions of the master's module had changed. The survey consisted of statements with a Likert scale to show degrees of agreement. Examples included, 'Being able to understand research has a positive impact on teachers' efficacy', and 'It is important for teachers to be able to critically analyse research'. Each statement had a comment box for respondents to explain their views. It was completed online, as this offered easy access and quick completion.

The focus groups were asked to respond to the same open-ended question: What do you perceive to be the impact of the master's module on PGCE student teacher education? Semi-structured interviews of NQTs explored the impact of the master's module over time.

In December, 142 (N = 235) student teachers responded to the survey, and in May, 95 (N = 225) did so. Semi-structured interviews were undertaken with eight NQTs, a sample from the previous year's cohort who responded to a message for alumni. There were two focus groups of lecturers (12 participants in all) who worked on the Primary PGCE, and a single focus group of student teachers (6) who volunteered from the survey cohort.

Semi-structured interviews and focus groups were transcribed and were subject to thematic analysis (Braun and Clarke, 2006), organised with NVivo software. Qualitative data from the twice-implemented questionnaires were added under relevant themes. 'A priori themes' (King and Horrocks, 2010: 168) were developed to reflect key ideas from literature: beliefs, dichotomy and synthesis (theory and practice), research-informed/based, critical reflection, and writing process. After initial coding and amalgamation of the different data sets, inductive themes were: satisfaction, autonomy, strategic compliance, master's impact, professional dialogue, pedagogy, and teacher educator role.

Findings

This research asked: What is the contribution of a research-informed master's module to ITT? Key findings suggest the following:

1. The master's module offered opportunities to alter preconceptions and beliefs about teaching and learning.
2. The process of essay writing enhanced critical reflection, which inspired more confidence in the classroom.

3. The potential theory–practice divide can be viewed as offering opportunities for enhancing self-efficacy.

Each of these will be explored next.

Beliefs

In the survey, a significant proportion of the cohort of student teachers felt that their beliefs and perceptions of their own education had been altered. Comments included: 'I had loads of teachers who just put a book in front of us, read page 246. That's what you're doing in the maths lesson and that was it ... I never thought about it ... Now I look back and I think, I can't believe that happened.'

In the student focus group, further examples described how they changed their views about effective teaching and learning through the unpicking of previous unconscious conceptions that had been formed through their own, untutored experiences: 'I think I thought it was fine because my grades were still OK, but I still thought it was boring, but I wouldn't be like "What pedagogy are they using?" because I was 15.'

Results from across samples show that student teachers' beliefs about teaching and learning had been altered, and that unconscious biases had been challenged. Although there is evidence that, for these student teachers, this had been successfully addressed, active acknowledgement of this with student teachers and marking beliefs as a context for learning with them, might be an area for ITT development.

Essay writing

The essay-writing process seemed to grow in perceived value after completion. The student survey in both implementations gave approbation to the statement, 'Writing the essay will improve my teaching'. Student teachers in the focus group acknowledged its intrinsic worth, recognising it as offering them confidence. One said: 'I probably read more ... Because I did find the topic really interesting, and it helped me feel confident.'

Pertinently, given the notion of ITT becoming 'washed out' in the classroom, interviews with NQTs indicated that perceptions of the process of writing the essay had maintained their philosophies about learning and teaching which had developed during their PGCE. Although a year had passed, the NQTs were able to reflect on the topic of their essay, the issues and research that they had explored, and how this was manifest in their current practice. One said: 'It extremely had an impact on filtering my own understanding and my own biases.'

For three student teachers, essay writing was not viewed positively, with comments such as 'It has made me quite stressed, and I feel I have not been able to give 100% attention to my placement', and 'I did not find any benefit to writing this assignment, it has caused me so much stress (ongoing, as I know I have failed) that I have been on anti-depressants'. These might be isolated instances, but they show potential negative impact, demanding consideration for additional support. Overall, from what was shared through the various data-gathering strategies, essay writing might be a rehearsal for a particular way of thinking, and thus the process could be conceptualised as an act of metacognition.

Theory–practice divide

The survey showed that a significant proportion of student teachers experienced challenges in putting university learning to use in school, making visible the issue of the theory–practice divide. Comments highlighted differences that schools offered in terms of pedagogies, as compared to university. Many reflected a negative perspective on practice in relation to their developing understanding of theory and research. These indicated dissatisfactions with not being able to realise research in practice: as one student teacher said, 'It can be disheartening to learn incredible theory and not being able to apply it due to the school we are placed in/work in.'

Most survey respondents disagreed with the survey statement, 'I would like just to be told how to teach, I don't need to know why', wanting their teaching to be informed by their own understanding about what might be effective: '... not everything should be taken at face value'.

The value of critical reflection on research was discussed in relation to the module by NQTs, student teachers in the focus group and lecturers, and was communicated as being a tool for evaluation of school pedagogy – using research to look at practice objectively.

For NQTs, the module had been an impetus for enabling critical reflection on their own practice. They saw research literacy as enabling them to contextualise the requirements of the school, not to blindly accept its practices, but to think further about how it aligned with their own understanding of pedagogy. One said:

schools are so different and if we were to just go straight in, you tend to be moulded to how that school does it, but doing the module, you have to think independently or what you think about it ... so we are the product of our own thought as well as what we've experienced in schools.

Lecturers voiced this as being an important aspect of the master's module: 'I think it then helps them when they go into school to exercise the criticality that we are constantly asking them to do and not just accept what they see in school at face value.'

Findings seem indicative of a realised value of master's level study, meeting some challenges inherent in ITT, and enabling positive and enduring experiences of managing children's learning effectively.

Discussion

The module in this study showed the positive contribution that critical reflection on research has on teachers' sense of self-efficacy. NQTs were maintaining a use of research and theory in the context of their own classrooms. Here it is important to highlight the need for self-efficacy rather than autonomy. Autonomy in teaching contexts brings with it potential for teachers to experience freedom, and to 'choose goals, teaching methods, and educational strategies that are concordant with the teacher's personal educational beliefs and values' (Skaalvik and Skaalvik, 2014: 69). However, for some, freedom might be burdensome and challenging. With choice comes responsibility that some might find unwelcome without self-efficacy and a positive self-perception of being able to teach effectively. Successful ITT must surely engender self-efficacy in its student teachers.

Aligning the two contexts of school and university in terms of research, theory and practice might better serve student teachers (Allsopp et al., 2006). However, if student teachers do not experience a variety of practice, they may expect practice to be a straightforward application of theory, unhelpful in new contexts. Schools are being encouraged to become research-engaged (Godfrey and Brown, 2019), and new teachers might play an important role in staffroom collaborative professional dialogue.

The potential for NQTs to turn to teaching that is representative of how they were taught indicates a need for student teachers to interrogate their potential 'beliefs' in their ITT. Davis and Sumara (1997: 6) suggest that unconscious thought can be described as 'unformulated thought'. This is important, because learning must involve resolving tensions between tacit and explicit knowing, between emotional and reasoned actions and between intuitive and calculated responses. Student learning must interrogate 'beliefs', their own histories, affective responses to them, and how they fit with developing knowledge and understanding. The differences that might be found in the contexts of schools, theories explored in university and the student teachers' own beliefs can thus be a fuel for cognitive dissonance and critical reflection.

The actual writing of the essay might offer a thinking experience to engender learning. Having written the essay, rehearsed and practised the strategy of reading and critically reflecting on research and literature in support of finding some possibilities for addressing the problem at hand could offer foundation for situated metacognitive knowledge and regulation.

Differences between the learning experienced in contexts of school and university, as well as in the context of beliefs formed through personal experience as a learner in school, can present a source of cognitive dissonance. Explicit teaching about the phenomenon could offer student teachers metacognitive insight into a process of reflecting on theory and practice that might endure beyond ITT into teaching careers. The peculiarities of how student teachers effectively learn should not be veiled in mystery, but offered with clarity. The means of sharing this process with student teachers might be indicated and included as a key feature of PGCE andragogy.

The findings certainly cannot be ascribed as wholly down to work undertaken on the module in this case study, as it does not operate in isolation from other aspects of the course. However, in terms of what the module seems to have contributed, it has been experienced as offering both opportunity and acknowledgement that education is problematic: that there are different ways of thinking about what effective education might be, and that research is a resource that can be used in offering an additional lens through which to view practice. As McNamara et al. (2017: 66) write, ITT 'needs to follow a developmental and intellectually-informed model, which will result in the creation of primary teachers who are full and well-informed professionals, able to understand and critique the changing educational worlds'. That master's modules can offer contribution towards this appears to be evidenced by this case study.

Conclusion

It seems clear that a master's module can make a contribution to ITT. A module that draws on research and literature, and that promotes critical reflection and presentation of education, teaching and learning as being complex, has contributed to student teachers' understanding of the valuable role that research-informed thinking can have. Many have had their ideas about teaching and learning unsettled and interrogated. Some NQTs are using this experience as a way of establishing themselves as professional teachers, imbued with a sense of self-efficacy, recognising that 'what works' might not. They have a means of finding, evaluating and trying out alternatives. The potential value of master's level study in this instance seems thus to be very important.

Future study might usefully seek further consideration of the impact of the master's element over a longer period of time, and might track particular issues that may prove especially challenging. One such theme is ability grouping, which frequently offers tension in terms of the research that highlights its issues and the reality of schools, in which it is common.

We argue that it is not helpful for student teachers to be taught that there is a 'right' way to teach and learn, because the reality of the unpredictable and ever-changing context of classrooms means that we need ITT to offer learning that meets that challenge. What constitutes master's study can offer that potential.

Declarations and conflicts of interest

Research ethics statement

The authors declare that research ethics approval for this article was provided by UCL IOE ethics committee. Ethical procedures were followed throughout the research process, informed by BERA (2018) and UCL Data Protection Policy (UCL, 2019).

Consent for publication statement

The authors declare that research participants' informed consent to publication of findings – including photos, videos and any personal or identifiable information – was secured prior to publication.

Conflicts of interest statement

The authors declare no conflicts of interest with this work. All efforts to sufficiently anonymise the authors during peer review of this article have been made. The authors declare no further conflicts with this article.

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