**‘Generic pedagogy is not enough’: teacher educators and subject-specialist pedagogy in the Further Education and Skills sector in England**

**Keywords:** Teacher educators; pedagogical content knowledge; subject-specialist pedagogy; further education; vocational education

**Highlights:**

* Intervention to develop teacher educators’ knowledge of subject-specialist pedagogy
* Impact of the intervention investigated by survey and semi-structured interviews
* Participants initially reported significant potential for impacts on practice
* Variable longer-term impact: reports of improved practice but also of no change
* Structural explanations specific to English further education sector are explored

**Abstract**

This paper reports on a study of teacher educators preparing teachers for the Further Education and Skills sector in England. Thirty-six teacher educators participated in an intervention intended to enhance understanding of subject-specialist pedagogy. Based on a socially-situated conception of pedagogical content knowledge, the intervention included a workshop supplemented by specially-developed learning resources. Data on prior knowledge, initial reception, and longer-term impact was collected by pre-intervention survey and at least one post-intervention interview. The paper explores how the intervention impacted participants’ understanding and practice, and proposes a typology for understanding the longer-term sustainability of this impact.

**Introduction**

The Further Education (FE) and Skills sector in England provides education, training and apprenticeships for approximately three million people over the age of 16. FE providers are diverse, comprising colleges, academies, community learning settings and independent training providers (Ofsted, 2018). The sector is also diverse in its vocational and academic areas and the level of its programmes – ranging from basic education to degree-level higher education. Historically, its development has been influenced by several often conflicting factors. These include: low social status, arising partly from the vocational emphasis of most programmes (Author2 2009); the impact of discourses of economic competitiveness and social mobility (Wheelahan 2012; Bathmaker 2013); and seismic changes in policy and governance, including the incorporation of colleges following the Further and Higher Education Act of 1992. More recently, substantial austerity-driven reductions in funding preceded a series of ‘area reviews’ conducted during 2015-17, following which 94 colleges were replaced by 43 merged institutions. In the current UK political climate, such tensions look set to continue (Hodgson & Spours, 2019).

Initial teacher education (ITE) for FE and Skills is almost as diverse as the sector itself. Training is provided, mainly by colleges and universities, to both pre-service and in-service teachers. In smaller provision, this is mainly on a generic, mixed-discipline basis, although some larger providers offer subject-specific groupings in certain parts of the programme. Participation is now voluntary, after some years of mandatory training during the New Labour period (Author2, 2014). ITE curricula are offered within a national framework for both university qualifications and the separate system of qualifications offered by independent awarding bodies. Publicly-funded ITE programmes are inspected by the Office for Standards in Education, Children’s Services and Skills (Ofsted), whose inspection frameworks are as influential in curriculum terms – if not more so – than the qualifications framework. The FE and Skills sector is under-researched, and in particular little is known about teacher educators or their professional activities (see Noel, 2006; Author2, 2007; Crawley, 2018; Springbett, 2018).

This paper examines how teacher educators for the FE and Skills sector in England responded to an intervention designed to support them in developing the subject-specialist pedagogy of trainee teachers, a contested issue in the sector for approaching twenty years. Debates over subject-specialist pedagogy derive partly from the sectoral features concerning ITE outlined above, but also from several factors concerning the nature of subject-specialist pedagogy itself. Firstly, external pressures from policymakers and from Ofsted have underplayed the differences between ‘subjects’ in FE and those encountered in school. Consequently, ITE for FE is often regarded as deficient because it lacks an established body of knowledge concerning subject pedagogy and its organisation is often generic rather than subject-specialist.

Critiques of such arguments highlight the diverse FE curriculum and the varied combinations of traditional disciplines it draws upon. Moreover, some authors argue that discrete bodies of knowledge have little relevance in the fluid epistemological landscape of the twenty-first century (Fisher & Webb, 2006). A similar critique is proposed by Lucas (2007), who suggests that the (post-)modern FE and Skills sector emphasises generic aspects of learning and the ability to work in multi-specialist teams, extending teaching and learning beyond traditional subject boundaries. More specifically, Lawy and Tedder (2012) propose that in ITE, interdisciplinary rather than subject-specialist groupings encourage discussions about teaching and learning that are inherently pedagogical.

Secondly, there is a lack of empirical research on how FE trainee teachers learn about subject-specialist pedagogy, how teacher educators approach the issue, and the impact of interventions in this area of ITE (Maxwell, 2010 is a notable exception). Research into FE teachers’ professional learning more broadly has increasingly recognised that it draws on a range of socially-embedded learning processes, in which the formal acquisition of codified pedagogical knowledge plays a relatively limited role. Other knowledge resources, including tacit as opposed to explicit knowledge, personal experience and experimentation, and the experiences of colleagues, are also epistemologically significant (Lucas, 2007; Nasta, 2007; Maxwell, 2010). Such processes are complicated by logistical issues in ITE programmes such as the economic viability of subject-specialist training in the diverse context of FE, and the availability of suitably qualified and experienced teacher educators.

These long-standing factors acquired particular significance with the publication of a sector-wide Ofsted report which severely criticised ITE provision for FE (Ofsted, 2003). Although the report’s implication that a largely generic organisation of ITE was preventing the development of specialist knowledge and skills was perhaps unjustified, it accurately reflected an environment of limited time and resources for a *subject-specific* approach to teacher education. Providers responded in several ways. Although a greater focus on subject-specialist mentoring arrangements predominated, there were also important curriculum innovations including course content related to subject pedagogy and online participation in subject-specific groupings (Fisher & Webb, 2006). However, consistently high-quality subject-specialist support remained elusive (Ofsted, 2009), an issue that continued to be highlighted across the ITE spectrum in England. For example, the 2014 Carter Review of initial teacher training identified ‘what appear to be potentially significant gaps’ in subject knowledge development and subject-specific pedagogy (Carter 2015, p.6). The review’s concern is reflected in the expectations outlined in the most recent inspection framework for ITE (Ofsted 2020).

This paper explores how teacher educators think about subject-specialist pedagogy and how they engaged with a particular intervention aimed at extending their knowledge in this area. As with many other aspects of the FE sector, the work of teacher educators is under-researched to the point of invisibility (Crawley, 2018; Springbett, 2018). However, there are broad indications that teacher education is a highly feminised occupation, with often fortuitous entry, and that professional identity, particularly in relation to research activity and ITE as higher education, is relatively weakly developed (Noel, 2006; Author2, 2007; Crawley, 2013). The paper therefore has broader implications for understanding how teacher educators assimilate theoretical knowledge and implement curriculum change.

We begin by reviewing the conceptual and research base relating to subject-specialist pedagogy, with particular attention to the notion of pedagogical content knowledge (see Author1 et al., 2018 for further discussion of the underlying concepts and literature). We then outline the research context and methodology, including the nature of the intervention. The findings section focuses on changes in knowledge and attitudes towards subject-specialist pedagogy, the impact on teacher educators’ practice, and perceived barriers to changing and developing subject-specialist pedagogy. In conclusion, we discuss the implications for research, policy and practice.

**Conceptualising subject-specialist pedagogy**

Although subjects such as mathematics and English are widely regarded as having distinctive pedagogical features, such distinctions are not necessarily significant. It is therefore important to examine the assumptions behind the concept of subject-specialist pedagogy. Within FE, there has often been a tendency to define professional knowledge as subject knowledge (Robson, 2006), and a particular mistrust of pedagogy has been reported:

A robust vocational teaching and learning system must be underpinned by a serious focus on vocational pedagogy. And yet, as we have gone round the country visiting sites of vocational teaching and learning and in our seminars, of all the terms we have discussed the one that gets people most agitated is ‘pedagogy’. (CAVTL, 2013, p.13)

Following Bernstein (2000), we conceptualise pedagogy in very broad terms, comprising a range of possible settings and relationships through which knowledge, values and behaviour may be developed:

Pedagogy is a sustained process whereby somebody(s) acquires new forms or develops existing forms of conduct, knowledge, practice and criteria from somebody(s) or something deemed to be an appropriate provider and evaluator (Bernstein, 2000, p.78)

The emphasis on conduct and values in addition to knowledge is particularly important in vocational contexts, where learning as *becoming*, the development of appropriate occupational identities and behaviours, is often used as a metaphor to understand what is learned and how (Boud & Hager 2012). According to Bernstein, pedagogies are determined by rules or principles governing how curriculum content is to be distributed, contextualised and evaluated. Different pedagogies are constituted by specific modalities of the practices and relationships governed by these principles. A *subject-specialist* pedagogy can then be thought of in terms of modalities distinctively (although not necessarily exclusively) associated with a particular subject.

Although subject-specialist pedagogy is sometimes considered as a relatively fixed set of practices having an objective validity in a particular subject, Bernstein’s conceptualisation draws attention to the socially-constructed nature of any form of pedagogy. Using his central concepts of classification and framing, Bernstein relates pedagogic modalities to distributions of power and control within the educational system and in society (Bernstein 2000). Whilst classification refers to the maintenance of boundaries between categories – for example, between subject areas or between ‘vocational’ and ‘academic’ studies – framing refers to the ways in which discourse within these categories is regulated. Thus classification concerns *what* discourse is transmitted and its relation to other discourses – for example knowledge about teaching physics and the way this differs from knowledge about teaching other subjects – whilst framing concerns *how* the discourse is to be transmitted and acquired in the pedagogical context (Bernstein 2000, p.100). This point is explored further in the discussion of Figure 1 below.

Whilst an abstract conception of pedagogy is helpful in understanding different pedagogical processes, it neglects teacher agency. Although FE teachers may have greater or lesser control over what is learned in their classrooms and how, their capacity to make informed and principled decisions about pedagogic practices is a critical factor in teaching and learning:

Pedagogy is the act of teaching together with its attendant discourse. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decisions of which teaching is constituted. (Alexander, 2004, p.11)

In this agentic conception of pedagogy, decision-making is central but *draws on* subject-specialist pedagogical knowledge, understood as knowledge *about* content and process within the context of a particular subject. This form of teacher knowledge is what Lee Shulman (1986; 1987) has called *pedagogical content knowledge* (PCK), a familiar term in the literature on science education in schools but little used in the context of English FE (for reviews of PCK, see Park & Oliver, 2008; Kind, 2009; Kind & Chan 2019). The concept of PCK has been considerably developed over the last thirty years, producing a conceptually diverse literature. Kind & Chan (2019) draw attention to the range of meaning employed by recent authors, noting substantive areas of disagreement over the meaning of content knowledge, generic pedagogical knowledge and PCK itself. In particular, the extent to which PCK is a personal construct or represents a canonical body of knowledge (Gess-Newsome et al. 2017; Kind 2017); whether PCK is topic-specific or part of a unified disciplinary approach (Sorge et al. 2017); and the importance of enacted PCK as against static propositional knowledge are all contested issues. However, there is broad agreement that PCK encompasses elements such as knowledge of student cognition, instructional strategies, curriculum features, and assessment (Kind & Chan 2019).

Although in the FE sector there has been some interest in PCK as a tool for understanding teacher development (see Bostock, 2019), other researchers have criticised the concept for reifying subject-specialist pedagogy and taking an objectivist view of knowledge which is less appropriate for vocational education (Lucas, 2007; Nasta, 2007; Maxwell, 2010). Moreover, some authors argue that FE teaching is inherently context-dependent, so that prescriptions for ‘what works’ are unlikely to have general validity (James & Biesta 2007, p.147). In the FE sector, a more fluid conception of PCK may be necessary, one in which knowledge about the conceptual structure of a subject or vocational area and the most effective pedagogical approaches are contested, localised and epistemologically diverse.

According to this standpoint, the emphasis in teachers’ use of PCK shifts from acquiring and applying universalised objective knowledge to knowledge construction within specific contexts, as socially-situated individuals tackle specific problems. Author2 (2014) proposes an explicitly situated conception he terms *subject-specific pedagogical knowledge* (SPK), developed further in Author1 et al. (2018), in which PCK is embedded within teachers’ values, attitudes and beliefs, and influenced by exogenous factors such as the social and institutional context. This situated understanding of PCK and the pedagogical decisions that flow from it was adopted in the intervention. However, because several recent authors have used situated definitions of PCK (Kind & Chan 2019), we felt that the SPK terminology would unnecessarily complicate the intervention. In the remainder of this paper we will use PCK to denote the broader understanding.

*Visible and invisible subject-specialist pedagogy*

As the discussion of pedagogic modalities presented earlier suggests, various possibilities for developing subject-specialist pedagogy with student teachers exist, relating to factors such as the social organisation of disciplinary or vocational knowledge and the external regulation of teaching as a profession. Drawing on the work of Bernstein and Shulman discussed earlier, Author2 (2014) proposes that various combinations of classification and framing strengths can be envisaged in how (or whether) particular forms of PCK are made available in ITE, producing weak and strong pedagogies in teacher education considered in relation to the distinctiveness of knowledge (classification dimension) and the regulation of discourse/provision (framing dimension). These modalities are illustrated in Figure 1, differing slightly from Author2 in that the SPK terminology is not used.

<Figure-1>

The figure conceptualises subject-specialist pedagogy as determined by two independent dimensions, classification of PCK and framing of subject-specialist provision. At one end of the classification dimension, pedagogical boundaries between subjects are weak, and PCK occurs relatively superficially at the level of knowledge about relationships and/or practices that are fundamentally similar across different subject areas. This ‘weak’ PCK essentially concerns ‘pedagogy-in-general’ enacted in a particular subject context. Alternatively, PCK could be strongly classified, existing at a deeper level characterised by strong boundaries between subjects with distinctive pedagogical practices and bodies of knowledge. An intermediate position between these two ideal types is that boundaries may be strong, not between individual subjects but between groups of subjects related by some integrative principle, such as their relationship to a particular occupational area. Bernstein refers to such an arrangement as a *regional* organisation of knowledge and practice.

The framing dimension in Figure 1 refers to how PCK (whether weak or strong) is acquired in the context of ITE. In weakly-framed provision, the subject background of teacher educators, their knowledge of subject-specific pedagogical issues, and the organisation and resourcing of subject-specific groups of trainee teachers, would be relatively unimportant. Conversely, strongly-framed provision is more strictly regulated, involving specialised teacher educators and resources, and possibly subject-specialist rather than generic groupings. Adapting the terminology of Bernstein (2003, pp.70-71), we use the term *visible* subject-specialist pedagogy to describe ITE programmes where both classification of PCK and framing of subject-specialist provision are strong. Where classification and framing are both weak, subject-specialist pedagogy is *invisible*. The two remaining combinations of classification and framing strengths are *mixed* approaches to subject-specialist pedagogy. One combination comprises discrete subject-based provision but essentially generic content, whilst the other involves distinctive PCK as content but provision organised generically.

*Content representations*

A central feature of the intervention was its use of content representations (CoRes), which have become established as both a research tool for investigating the existing PCK of teachers and a means of professional development. A CoRe is a detailed analysis of a topic within a subject area, contextualised in relation to specific learners: teachers work through a series of questions concerning significance of the topic, conceptual structure (its ‘Big Ideas’), and aspects of teaching and learning (Loughran et al., 2012; Nilsson & Karlsson, 2019). Constructing a CoRe is normally a group activity; in some examples of this approach, novice teachers are guided by experienced practitioners (Eames et al., 2011). The aim is not necessarily consensus, but an increased awareness of a teacher’s own assumptions and an expanded horizon in terms of why, what and how to teach.

A number of studies have used the CoRe approach, and its effectiveness has been extensively debated. Kind (2009, p.195) argues that CoRes offer ‘the most useful technique devised to date for eliciting and recording PCK directly from teachers’, whilst Hume & Berry (2011) and Nilsson & Karlsson (2019) consider that a CoRe can be successful in scaffolding and structuring student teachers’ reflection-on-action. However, several limitations have been identified. A CoRe can be challenging to construct, especially for novice teachers who lack the depth of classroom experience it requires (Hume & Berry 2011). For researchers, a CoRe exercise may not give access to the *enacted* PCK which underpins a teacher’s actual practice. Kind (2009) also notes that, if CoRes are to be used as a research tool, substantial training and guidance in their use is necessary if participants are to produce good quality data.

**Methodology**

The intervention was based on three main assumptions: firstly, that subject-specialist pedagogy in ITE programmes is under-theorised, with most FE teacher educators having relatively little knowledge of key ideas; secondly, that PCK and related concepts could help redress this deficiency; and finally, that increased knowledge and awareness of PCK amongst teacher educators could lead to sustainable impacts on ITE curricula. To test these assumptions, and with funding support from [details removed], we developed an intervention for FE teacher educators consisting of a group workshop preceded by assigned reading[[1]](#footnote-1). The intervention was a development of an earlier programme designed for trainee teachers (Orr et al., 2017).

The workshop comprised a series of mini-lectures interspersed with group activities exploring key concepts as well as activities and materials that could be adapted for use with trainee teachers. Topics included PCK, the nature of vocational learning, pedagogy as situated decision-making, and different meanings of subject-specialist pedagogy. Content representations (CoRes) were used to illustrate ways of identifying and developing PCK. The workshop focused on the needs of new teachers of science, engineering and technology (SET), partly because of funder priorities but also because this is an area of acute teacher shortage (Author1, 2019). Online materials, including purpose-made video clips of SET teaching in FE colleges, animations of key concepts, and examples of learning materials, were used during the sessions and made available to participants afterwards. A significant design decision was to offer only a single session, unlike the trainee-teacher programme (Orr et al., 2017) which provided two sessions a month apart, with assigned tasks and virtual meetings between sessions. The professional development literature suggests that one-off CPD sessions lead to less-sustainable outcomes and that programmes with substantial contact time over several weeks tend to be more effective, particularly when this time is used to promote feedback and reflection (Darling-Hammond et al., 2017; Desimone, 2009). However, we judged that a greater time commitment would prevent many teacher educators from attending. It was hoped that other features of effective CPD designed into the intervention, such as modelling of effective practice, strong content focus and active learning (Darling-Hammond et al., 2017) would help to offset this potential deficiency. Figure 2 summarises the assumptions underlying the intervention, its theoretical constructs, the main components of the intervention and the data collection methods used. Most of the learning materials, with notes on their use, may be accessed online[[2]](#footnote-2).

<Figure-2>

*Sample*

There were two cohorts of participants. The first cohort (C1) attended a voluntary, one-day workshop in September 2017, available to teacher educators associated with four universities providing ITE for FE. Three of the universities operated ITE through large FE-HE partnerships, whilst the fourth had smaller local provision. The sample of universities was therefore somewhat untypical, in that most FE-HE partnerships providing ITE for FE in England have few partners, typically 3-6 in 2015/16 (ETF 2018, p.22). The second cohort (C2) attended a half-day workshop in November 2017, commissioned by one of the partnership universities and attended as part of a regular training day by teacher educators from their partner (FE) colleges. Recruitment of C1 was by invitation circulated via the four universities and their FE partners, whilst C2 was recruited by direct invitation from the partnership manager in the university concerned.

Cohort C1 consisted of 15 teacher educators. Ten of these were university-based and the remainder worked in partner colleges of the universities concerned. The university-based participants generally had significant responsibilities within their respective partnerships, including course leadership, management of admissions, curriculum and assessment, and academic liaison with colleges. The FE-based participants were responsible for local management of the university programmes. Seven of the university-based teacher educators were from a single institution. Fourteen participants completed the pre-survey – mainly female (12/14). These proportions are broadly comparable with those reported from a large survey of teacher educators by Crawley (2013). All 15 took part in post-interview 1, and eleven in post-interview 2.

Cohort C2 consisted of 21 teacher educators from FE colleges, of whom 13 completed the pre-survey. These participants generally had lower levels of responsibility within the partnership than those in C1, the majority being concerned with local delivery of teaching and assessment. They were more evenly balanced in terms of gender than C1 (7/13 female). Participants from C2 were less experienced than those in C1 (4/13 versus 1/14 had been a teacher educator for 3 years or less, compared with 7/13 versus 12/14 for seven years or more). This difference may illustrate a commonly-encountered career path for FE teacher educators, in which they enter teacher education by working on awarding body provision or on university-led programmes within a college, and later gain employment within a university. Overall, only seven participants came from an engineering or science-related background, with eight having language and literacy specialisms and the others coming from a range of disciplines. One C2 participant took part in both post-session interviews. Table 1 summarises participation data by cohort.

<Table-1>

Although the relationships involved in FE-HE partnerships are complex and resistant to a simple analysis in terms of an imbalance of power between the university and its FE partners (Elliott 2017), much of the literature refers to tensions and inequities between the two sectors. Colley et al. (2014) note that ownership of curriculum, assessment strategies, quality assurance and research resources typically resides with the university, so that however democratic the constitution of the partnership may be, there will be differences in power and resources between university-based tutors and those in FE colleges.

In our study, all participants enjoyed some autonomy in their teaching, and could innovate as far as the constraints of teaching load, curriculum requirements and resources allowed. However, the influence of FE-based tutors on wider curriculum structures throughout their respective partnerships was strongly mediated and regulated by the lead university; effective autonomy was therefore much higher for the university-based tutors. All participants were vulnerable to a range of external pressures, including the priorities of inspection frameworks, the time demands imposed by a market-driven environment for student recruitment, and the often rapidly-changing regulatory framework governing FE teaching in England.

*Research instruments*

Both cohorts were asked to complete an online survey (the “pre-survey”) before receiving the pre-reading. Its purpose was to collect background data about participants and establish their pre-existing knowledge of key concepts to be introduced in the intervention. In a few cases, the survey was submitted late and these participants may have already have completed the reading. The first post-interview took place between late October 2017 and January 2018 (“post-interview 1”). It was designed to elicit recall and reflections about the session, subsequent use of resources and impact on thinking and changes undertaken or planned. Between May and July 2018 a second interview (“post-interview 2”) investigated longer-term impact on thinking and practice (Figure 3). With two exceptions (one face-to-face, one questionnaire), all interviews were conducted by telephone. They were audio-recorded and transcribed; pseudonyms are used in this paper when referring to participants.

<Figure-3>

*Analysis*

The narrative responses from interviews or free text answers from the survey were analysed using the software package NVivo. The text was read for sense by Author1, and then coded into key emerging themes. The analysis was approached both deductively and inductively (developing codes bottom-up from the data). Figure 4 shows the framework for the deductive component. The research team members (see Acknowledgements) agreed the thematic framework and independently coded two scripts to ensure consensus before Author1 undertook the remainder. This process was completed by December 2018. As data collection approached completion, no significant new themes were emerging, suggesting that saturation had been reached.

Findings from the two cohorts were similar enough to allow them to be reported together. The main themes are discussed below: the impact of the intervention on teacher educators’ awareness of concepts related to subject-specialist pedagogy and its more immediate impact; the barriers to making and sustaining change; and longer-term impact on practice.

<Figure-4>

**Findings (1) Awareness and shorter-term impacts**

All participants taught largely generic groups, either pre-service or in-service. Their trainees had a variety of subject specialisms, including:

Childcare and Education (mentioned by 22 participants)

Engineering and Manufacturing (21)

Construction (21)

Business and Administration (20)

Health and Science (19)

Creative and Design (18)

Hair and Beauty (18)

This diversity illustrates the challenge of developing subject-specialist content with a generic group of trainees:

*I still sometimes find it challenging to work with teachers who are delivering in very different subject areas. I have had no training in this and would welcome an opportunity to engage with the topic*. (Zoe, pre-survey[C1])

As anticipated, the participants did not have well-developed prior knowledge of the main ideas we introduced. In the pre-survey, no respondent claimed ‘a great deal’ of knowledge about PCK or subject-specialist pedagogy. About a quarter of them claimed to know ‘quite a lot’ about PCK, and half said the same for subject-specialist pedagogy.

The pre-survey also invited participants to ‘describe what “subject-specialist pedagogy” means to you’. Figure 5 summarises the range of responses to this question, using categories derived from the classification and framing dimensions of Figure 1. The great majority of responses related to classification, with relatively few concerning how ITE provision is framed. However, several participants referred to identifying and communicating ‘best practice’ to trainees. Other responses included references to the specific nature of pedagogies associated with particular subjects, suggesting a widespread acceptance that subject pedagogies are strongly classified in the sense discussed earlier (Figure 1): ‘*The specific ways in which we design our teaching sessions…to make sure that the key concepts and skills are taken on board by our students*’ (Imogen[C1]).

Some participants showed more complex understandings. These included ideas such as difference and distinctiveness in the conceptual structure of subjects, and tensions between recognising the socially-constructed nature of pedagogy and aspiring to pass on some objectively-defined ‘best practice’. George (C2) referred to ‘*The art and the science of education in a prescribed subject*’, whilst Emma (C2) gave a lengthy response arguing the need for critical reflection at a subject level: ‘*So you are not regurgitating the way you were taught, so you can challenge the assumptions you have about what you know*’. Simplistic responses such as equating subject-specialist pedagogy with subject knowledge were uncommon, whilst the few responses categorised as ‘Other’ raised interesting broader points such as the relationship between subject-specialist pedagogy and the ‘dual professionalism’ of teacher and vocational specialist.

<Figure-5>

In the first post-session interview, most participants continued to express a similar view of subject-specialist pedagogy in terms of its classification (distinctiveness of PCK; see Figure 1), but their responses suggested that its framing (regulation of delivery) tended to be weak. Descriptions of subject-specialist pedagogy were predominantly ‘mixed’ in this way, rather than inclining to the visible or invisible modalities discussed earlier. This was at least partly because interview responses tended to range over both what subject-specialist pedagogy could or should be and current practice in the sector. One participant appeared frustrated that many FE teachers she encountered, including subject mentors, did not acknowledge any pedagogical features specific to their subject. She believed that although some teachers (such as those in music or mathematics) might be exceptions, others have given subject pedagogy little thought:

*Now, they might be doing that when they are teaching, they might be using, well they probably are using some specialist knowledge of how to get across difficult concepts and so on. But they have never articulated that, so they don’t realise it is there*. (Niamh, Post-1[C1])

A strongly-*framed* conception of subject-specialist pedagogy was expressed by Rachel (a former engineer), who identified the lack of teacher educators with a background in science or technology as an obstacle to addressing subject pedagogies more effectively. She felt that these colleagues may have a general understanding of the concept of subject-specialist pedagogy, but did not have adequate specialist knowledge to support teachers of technical subjects:

*I just kept thinking, the problem’s here in this room because if…all the people who are delivering teacher ed. have got non-technical, non-scientific, non-engineering backgrounds, then maybe that is part of the problem.* (Rachel, Post-1[C1])

There was a sense from some participants that, given the opportunity to explore the concept of subject-specialist pedagogy, they now viewed it as an unacknowledged or under-emphasised part of their existing practice:

*…we are doing things already, but we didn’t realise we were doing them, so when it was talking about…making good decisions about vocational pedagogy, it made me think, “Actually, yeah, we are actually doing this already”* (Emma, Post-2[C2])

The intervention had encouraged Emma to reflect on the elusive nature of her own specialism. Her career had comprised various occupations, including hotel work and training and development; consequently, she felt it was easier for many of her trainees to define their specialism than it was for her.

Other participants also felt that the intervention had helped them reflect on ITE pedagogies and promoted their personal learning. Tangible outcomes were difficult to pin down, but these participants suggested that it had opened up new ways of thinking about the content of ITE programmes:

*It was hugely useful in terms of…raising [my] awareness of PCK and thinking more about the subject specialist and teacher training. I mean, it was the most useful because I hadn’t really heard that from anywhere else*. (Vera, Post-2[C1])

Of the approaches covered by the intervention, CoRe seemed to have the greatest traction. It was a new concept to all participants; of those who participated in post-interview 1, around half saw it as a potentially valuable tool for ITE. Suggested uses included structuring lesson planning and pedagogical reflection for both trainees and teacher educators; or to design observation schedules and frame subsequent discussion and reflection for trainees, mentors and teacher educators. Some participants noted that CoRes offered greater depth than approaches currently in use:

*… the pedagogical questions in the CoRe structures were a really good way to get staff to reflect and think about what they’re teaching, and why they’re teaching it, and how they’re going to teach that.* (Holly, Post-1[C1])

*And often they say, “Well, I could do with a set of questions that would help me with my mentor, or focus me a little bit more in my subject content, because that’s where I’m missing and I need some more input”.* (Debbie, Post-1[C1])

Zoe saw CoRes as an opportunity to cover ‘*key concepts for the subject and specialist pedagogy as well*’. Reflecting the strong classification/weak framing distinction discussed earlier, Zoe described herself as a ‘generic’ teacher educator. She noted that she was not conversant with many aspects of her trainees’ specialist areas, and that the ITE programme in general did not recognise pedagogic variations across different subjects. She intended to use CoRes in a forthcoming curriculum-planning module. Despite this enthusiasm, only one participant (Debbie) had introduced CoRes to trainees before the first interview, encouraging their use in lesson planning (first-year trainees) and to support discussions with mentors (second years). Imogen planned to encourage trainees to use the CoRe approach in lesson preparation, and to work with mentors to identify ‘Big Ideas’ in their subject areas. She saw possibilities to include these processes in the assessment of practical teaching.

By the second interview, Debbie remained the only participant to have used CoRes with trainees. She reported that the CoRe prompts had proved helpful to trainees in their lesson planning, with one using them as the framework for his teaching sessions. Debbie also noted the impact of using CoRe to support teaching observations:

*… before the session [trainees] are being much, much more focused on the activities that they are doing, and how they are supporting and differentiating the students…* (Debbie, Post-2[C1])

She intended to continue this next year:

*…we again will probably utilise those key questions and put those into practice as well, so I think it has been quite successful in helping the students actually reflect on their practice a little bit more* (Debbie, Post-1[C1])

Not all participants had remained enthusiastic. Although Niamh had become interested in CoRes from the pre-reading, she now criticised the article for its theoretical focus and failing to present practical ideas for using CoRe in planning lessons: ‘*It says it’s important…to have better content knowledge, but not what you then do about it…* (Niamh, Post-2[C1])

It was difficult to elicit firm reasons for the lack of uptake. For example, Zoe still regarded CoRe as something to use in the future but ‘*we’re just not sure… you know, we need to discuss how we could use it*’. It may be that certain features of the intervention were responsible, particularly the short timeframe and dissonance between the SET context of the CoRe examples and participants’ own subject backgrounds. However, other features of the intervention had become embedded in participants’ ITE practice, particularly the video clips of real-life teaching. One such clip, which demonstrated contrasting approaches to teaching Ohm’s law in classroom and workshop contexts, had been effective with trainees from a range of subject specialisms. Participants also gave examples of new ITE content they had developed following the intervention. One example involved a session to explore the meaning of subject-specialist pedagogy, in which the teacher educator drew on her own experience of teaching history. In a second example, which occurred a few days after the intervention, another participant had organised a debate on how to teach their specialism for his first year trainees:

*…what’s your subject specialist knowledge and the pedagogy that helps you to get that across, and how do you develop that? And, of course, they don’t have any answers because they’re still thinking about these things* (Jack, Post-1[C1])

Other examples of developments in ITE pedagogy included basing sessions on teacher agency and pedagogy as decision-making, particularly in relation to lesson preparation. Working more frequently with trainees in subject-specialist groups was also reported, and increased use of modelling practice to trainees:

*I think certainly in terms of me deconstructing my own practice…I’ve been doing with [trainees] what I call a freeze frame so I’ll model something and then stop and say, right, what have I just done?…And trying to get them to sort of reflect on that and see how they could then translate that into their practice* (Pat, Post-2[C1])

Subject knowledge had also received more attention, particularly its role in informing decisions about teaching and learning strategies:

*To be an effective teacher you’ve got to really know your subject…so that you can make the pedagogical decisions about how you arrange it, how you arrange the learning* (Imogen, Post-2[C1])

Other participants had extended course reading lists, potentially embedding subject-specialist pedagogy, PCK and related considerations into future programmes. Figure 6 explores in more detail the impact on one participant.

<Figure-6>

**Findings (2): Barriers to adoption**

As noted earlier, many participants expressed views that can be understood in terms of a mixed pedagogy combining strong classification of PCK and weak framing of ITE provision (Figure 1). The resulting tension around introducing new ideas about subject-specialist pedagogy within existing, largely generic, ITE programmes was identified by several participants. Most were dealing with diverse groups of trainees whose specialisms could range from childcare to floristry to electrical engineering. They identified two main challenges: first, how pedagogies across the subjects represented by a typical group of trainees could be addressed; and second, how a teacher educator could develop the knowledge required by more subject-specific approaches.

Although participants had developed new strategies, each raised further challenges. One possibility involved working with subject-specialist subgroups in a generic group of trainees. However, such groups were relatively small and trainees were often the only representative of their subject. Alternatively, subject-specialist mentors could act as conduits for the ideas. Several participants intended to ‘cascade’ what they had learned to mentors, but second interviews revealed such plans had proved difficult to implement:

*I’ve only managed to talk to two and the others I just could not do. They can’t get to me at times when I can get to them because we’re all on different timetables, it just makes life difficult.* (Pat, Post-2[C1])

In other cases, trainees had been made responsible for introducing mentors to concepts such as the CoRe, but there was little evidence so far that this had been successful. Although in ITE for FE the responsibility for developing subject-specialist pedagogy lies mainly with mentors, this is a historically under-resourced role:

*[T]he pattern is that mentors are really, really busy people, and they are just not spending their time with our trainees that we would like them to…I am meeting trainees who are maybe seeing their mentors two or three times a term. And it is just not enough…to do that sort of work really.* (Zoe, Post-1[C1])

*[S]ome mentors are very good at supporting their students and are very reflective…but others, it is…not particularly deep, it is quite surface the support that they actually offer.* (Debbie, Post-2[C1])

Like many FE teacher educators, participants also reported heavy workloads and conflicting priorities. This made it difficult for them to incorporate new ideas into their practice:

*It’s that whole thing of once you go away from something it just all depends on what you manage to implement, and that’s usually the trouble with attending an event, like a one-off event, is like going away and actually implementing it…sometimes just drops off the radar because things are so crazy busy*. (Holly, Post-2[C1])

Holly suggested that a more extended programme of CPD concerning subject-specialist pedagogy would be helpful. For example, a second session conducted online could be used to co-create ideas and share resources. Zoe proposed a similar idea, but based on a face-to-face action planning session as part of the CPD:

*I suppose the trouble with going on courses [is that] you have all these fantastic new ideas and then it’s the implementation, isn’t it? That doesn’t seem to happen…I don’t know, maybe we would have had time to get into a group and actually talk a bit more about how we were going to take it forward…*(Zoe, Post-2[C1])

However, these participants had not necessarily abandoned the ideas, and talked instead about them being *on the back burner,* possibilities to return to in the future*.*

Participants also cited specific barriers to implementation. These included pressing short-term issues such as college infrastructure failures or impending Ofsted inspections, but also related to more structural issues arising from the nature of FE teacher education as ‘HE in FE’. Although participants recognised that activities such as the re-approval of courses franchised from a university and studying for postgraduate or other qualifications provided valuable opportunities for professional development, the resulting workloads were a barrier to creativity and innovation. Participants were also cautious about *replacing* existing course content with new material, especially where they perceived it to be outside the established traditions of ITE for FE:

*There’s so much that we need to get through and deliver, it’s sometimes difficult to find the space for this, and therefore it tends to be less in FE as it’s more important in primary, secondary teaching.* (Pat, Post-1[C1])

Several participants noted that pedagogic development received a lower priority than college-wide implications of policy trends. These included funding switches between courses that led to trainees teaching subjects with which they were less familiar; increasing emphasis on institutional and governmental agendas and targets; and tightened control over how teaching was delivered:

*…you’ve got a big list of things that need to happen by the end of the year because the college action plan and the targets are kind of set, and I worked at kind of that…if I attend something and it fits with the college actions that I’m currently working on…I would easily just use it.* (Holly, Post-2[C1])

*It’s a case of managers understanding that, the need for us to be continually researching and updating our skills, and giving us time to purely focus on that rather than giving us too much to teach upon…* (Emma, Post-2[C2])

*And [in lesson observations] it’s something I'm seeing more of, really, where an institution provides a script and says, “This is what you have” – you know, down to the PowerPoint slides with spelling mistakes…how do you respond to somebody who has no ownership of what they’ve just been teaching?* (Megan, Post-1[C1])

Vera had entered HE teacher education from a similar role in an FE college. She emphasised the importance of professional development designed to meet the individual needs of teacher educators rather than focusing exclusively on institutional priorities. Vera also questioned whether her former colleagues would have equitable access to the ideas presented by the intervention. This was partly a question of access to the resources available to HE teacher educators, such as academic journals, but also a consequence of what Vera perceived as a preference for more familiar pedagogical literature:

*We were, as a department, very sold on some more well-known ideas that might not be as important…a different, more academic pedagogy* [focused on academic rather than vocational subjects]*. Weren’t really aware of PCK at all…I feel bad saying that, but that’s how it was. They might know Petty* [a textbook for ITE trainees]*, but they wouldn’t know much… As a team, we didn’t really deal with pedagogy research other than that, really.* (Vera, Post-1[C1])

There was a general feeling that a better time for the intervention would be May or June, when workload would be less overwhelming but it would still be possible to make use of its ideas in plans for the coming academic year.

**Findings (3): longer-term impact**

In most cases, the first and second interviews were separated by a period of 7-10 months. Comparing data from the two sets of interviews, the impact of the intervention appeared just as likely to diminish as to become embedded in the practice of teacher educators:

*I used a couple of things immediately, and then everything else sort of went on the backburner…I think the key things that stood out to me…have helped to sort of shape things, but other things I think that probably would have been very useful have sort of just vanished…* (Tess, Post-2[C1])

Several participants struggled to remember key terms. Some referred to their workshop notes during the interviews, making it unclear how much had been internalised, although this did suggest that they valued the session enough to retain those notes. A wide range of outcomes could be discerned, from fairly extensive adoption of new approaches to a negligible impact on thinking or practice. Responses from the 12 participants who were interviewed twice leads us to propose a tentative typology of individual responses to the intervention, based on the extent to which participants adopted new ITE practices, and how this changed over time. We identified four broad types as follows:

*Sustainers* (5 participants) reported actual impact at both stages. One was Pat, a relatively inexperienced teacher educator in FE. Before her first interview, she had already discussed the relevant ideas with a colleague who was researching subject-specialist vocabulary. She also planned to share information with trainees, staff and mentors. She confirmed in her second interview that she had covered some elements with trainees. However, she had only raised it with two or three individual mentors because it had proved impossible to meet as a group.

*Enthusiasts* (2 participants) were positive about the intervention, and aimed to put aspects into practice. However, these intentions had not come to fruition by the second interview, or in one case had reverted from actual change to intention. Imogen, for instance, intended to include PCK and subject-specialist pedagogy more explicitly in modules on reflective practice, and encourage trainees to collaborate with mentors to identify ‘Big Ideas’. Her second interview revealed that, although reflection on subject-specialist pedagogy had been incorporated into a recently-revalidated module, she had not found time to cover links between subject and pedagogical expertise with her PGCE students as planned.

*Discontinuers* (3 participants) reported actual impact in the first interview but had lapsed by the second, with no further plans. One was Niamh, who managed the ITE programme in one of the universities. She was initially enthusiastic about the intervention and requested a repeat for teacher educators from her partner FE colleges, albeit recognising the challenges in addressing subject-specialist pedagogy on a generic teaching programme. However, she had become decidedly lukewarm by her second interview, criticising the pre-reading as of no practical value for lesson planning and wanting specific training materials from the workshop.

*Non-adopters* (2 participants) did not report any change to their thinking or practice, and had not engaged with the ideas. Rachel, whose role was to mentor engineering trainees in an FE college, was surprised that most of the other attendees were not SET specialists. Having expected to get “tools for change”, she felt the session had been mis-sold, being too theory-laden and not directly transferable to the classroom.

Although these categories are not clear-cut, they convey the different ways in which individuals might respond in terms of whether professional development becomes embedded in their thinking and practice. However, it should not necessarily be inferred that such responses derive solely from individualised factors or from deficiencies in the intervention. Seen in the context of the barriers to implementation reported in the previous section, sociocultural explanations of tutor behaviour may be more appropriate, such as those employed by James & Biesta (2007), McNicholl & Blake (2013), and Hodgson & Spours (2013). This point is discussed in more detail in our conclusion.

**Discussion and conclusion**

Initial teacher education for the FE and Skills sector in England has been described as going ‘from fragmentation to chaos’ (Lucas et al., 2012), as conflicting waves of reform have reflected differing philosophies of Labour and Conservative-led governments. In such a context, it has been difficult for pedagogical change to acquire much traction beyond coping with increased pressure on resources. As Springbett (2018) argues, teacher educators – particularly those in FE colleges – must manage a complex identity enacted simultaneously both within and outside the ‘ruling discourses’ of FE. Managerialism, performativity and crisis management compete for time and energy with more traditional values in teacher education, such as caring for trainee teachers, pedagogical innovation and the cultivation of ‘HE-ness’. However, these latter values have not necessarily become completely submerged: Lawy and Tedder (2012) report that, whilst some teacher educators ‘felt they had less control over the content and delivery of their programmes, others…found new ways of articulating and expressing their agency’.

Our data may be seen as a case study of these competing identities and imperatives, as teacher educators grapple with the complexities of subject-specialist pedagogy in the context of an increasingly demanding ITE curriculum. In some ways, engaging with an externally-funded research project legitimised closer attention to pedagogy than participants were accustomed to take. However, even those teacher educators who were most receptive found it difficult to translate their enthusiasm into sustained curriculum change. This was partly because of under-resourcing in a demanding area of work, for which there is ample evidence in the literature. Particularly for FE-based teacher educators, heavy teaching loads and a complex national framework of teaching qualifications and inspection compromise the ability to innovate (Lawy and Tedder 2012; Crawley 2013; Springbett 2018). It also derived from compromises made in the intervention design, which balanced considerations such as funding constraints, recognition of the demands on teacher educator time, and the diversity of potential subject areas. This led to an intervention less sustained, more broadly theoretical and more diffuse in subject focus than would be ideal. However, even an imperfect intervention provided valuable data on how teacher educators conceptualised and enacted subject-specialist pedagogy. Overall, we suggest that the intervention led to data of sufficient quality to underpin the conclusions drawn here.

There was substantial evidence that participants valued acquiring knowledge about subject-specialist pedagogy. The concept of PCK and its associated literature, the CoRe approach to developing PCK, and the translation of pedagogical knowledge into practice via situated decision-making were all well received. To some extent, this reflected a widespread acceptance that there was *something* – a distinctive subject-specialist pedagogy – to acquire knowledge about.

In the language of Figure 1, the views expressed by many participants related to a strong classification of PCK, asserting the existence of distinctive practices and bodies of knowledge concerning how different subjects could be taught. In Zoe’s words, ‘*Generic pedagogy is not enough*’. However, their responses also implied that the framing of subject-specialist provision was currently weak. Most ITE delivery took place in generic groups, there was little matching of teacher educators or learning resources to trainee specialisms, and a lack of training for teacher educators in how to address subject-specialist pedagogy. This situation, which combines an acceptance of strong classification of PCK with weak framing in its acquisition, is described by the mixed pedagogy occupying the lower-left quadrant of Figure 1. Although the views of participants such as Rachel suggested that a visible subject-specialist pedagogy might be espoused by some teacher educators, the required strong framing of provision was notable by its absence.

That PCK, CoRes and several other key concepts introduced during the intervention were new ideas to participants is particularly telling – as is the overwhelmingly generic nature of the alternative conceptual structures proposed by participants such as Vera and her colleagues, ‘*sold on some more well-known ideas*’. Nevertheless, it is important to acknowledge the existence of the other modalities of Figure 1; whether other teacher educators, grounded in the cultures and knowledge resources of other partnerships, may have provided a different pattern of responses can only be answered by further research.

There was also evidence of individual differences in the depth and sustainability of participants’ responses to the intervention, leading to the typology introduced in the previous section. Although the typology can be seen as categorising different kinds of individual, this is not the most helpful reading of the data. At a deeper level, the typology describes different outcomes of an ecological interaction in which teacher educators and their dispositions are situated within a broader environment of policy, practice and resources. This environment includes a number of influential features: the knowledge resources to which teacher educators have access[[3]](#footnote-3); policy imperatives, such as funding changes, inspection frameworks and regulatory requirements; local employment conditions and skill supply; and the cultural conditions within which ITE programmes are ‘delivered’.

As Biesta and James (2007) have argued, the FE environment constitutes a Bourdieusian field, in which characteristic ‘learning cultures’ are shaped by competing internal and external forces. As an important nexus for the channelling of government policies, ITE programmes occupy a particularly vulnerable position within this field (Hodgson and Spours 2019). Although teacher educators have considerable autonomy at the classroom level, the constraints imposed by the various layers of regulation and inspection should not be underestimated.

Since the beginning of the New Labour reforms in 1999, the ITE curriculum has been progressively expanded to include mandatory requirements to address the teaching of literacy, numeracy and ICT within other subject areas, safeguarding, the integration of subject-specialist mentoring, and issues of equality and diversity. This piecemeal expansion has tended to displace from the curriculum, rather than be viewed through the lens of, the traditional disciplines of education, producing ITE programmes in which unifying theoretical principles are increasingly difficult to discern (Lucas, Nasta, & Rogers, 2012). The result is ITE as a curriculum ‘shopping trolley’, to which items are frequently added but rarely taken out. In such an environment, it is easy to understand that teacher educators might hesitate to embrace new theoretical content and adapt it for their own students. Moreover, as Vera suggested in her post-session interview, what might be called *local knowledge systems* exist amongst FE teacher educators, in which certain theories and bodies of knowledge are privileged and reproduced in the knowledge and practice of trainee teachers.

The acceptance and integration of new knowledge within the ITE curriculum is therefore unlikely to be an easy process, and may require a considerable lapse of time between initial exposure to an idea outside the local knowledge system and its assimilation. It is therefore possible that a more sustained intervention, using broadly the same approaches but with more opportunities for collaboration, feedback and reflection, would have had a greater impact (Darling-Hammond et al., 2017). Nevertheless, concepts related to subject-specialist pedagogy have long had a largely ‘outsider’ status within ITE for FE. A more systematic and theoretically-informed treatment of subject pedagogies than currently exists therefore poses both policy and cultural challenges. Further research on how teacher educators conceptualise subject-specialist pedagogy and the impact of relevant interventions, using the analytical framework developed in this paper, would be valuable in understanding and responding to these challenges.

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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Completed pre-survey | Completed post-1 | Completed post-2 | Gender (F) | Experience (> 7yrs) | Teacher education CPD in last 3 yrs (Yes) | Strong prior knowledge of SSP or PCK (self-report) (Yes)  |
| SSP | PCK |
| Cohort 1 (*N*0 = 15) | *N* = 14 | 15 | 11 | 12 | 12 | 14 | 9 | 6 |
| Cohort 2 (*N*0 = 21) | *N* = 13 | 1 | 1 | 7 | 7 | 9 | 5  | 1  |

Table 1: Completion of pre-session surveys and post-session interviews on subject-specialist pedagogy (SSP) (*N*0 = number attending workshop, *N* = number of respondents to pre-survey). Strong prior knowledge defined as self-reporting ‘a great deal’ or ‘quite a lot’ of knowledge in this area.

|  |  |
| --- | --- |
|  | *Classification of pedagogical content knowledge* (*PCK*) |
|  |  | Strong | Weak |
| *Framing of subject-specialist provision* | Strong | Distinctive PCK exists and is contained in the ITE curriculum. It is acquired through discrete subject provision.*Visible subject-specialist pedagogy* | Distinctive PCK either does not exist or is not contained in the ITE curriculum. Generic pedagogical knowledge is acquired through discrete subject provision.*Mixed (discrete provision) subject-specialist pedagogy* |
| Weak | Distinctive PCK exists and is contained in the ITE curriculum. It is acquired through generic provision.*Mixed (discrete content) subject-specialist pedagogy* | Distinctive PCK either does not exist or is not contained in the ITE curriculum. Generic pedagogical knowledge is acquired through generic provision.*Invisible subject-specialist pedagogy* |

Figure 1

Figure 2: Schematic outline of the intervention and associated data collection.

SSP is conceptually and theoretically deficient in current ITE models

Use of PCK and related concepts can help address this deficiency

Enhanced knowledge for teacher educators can lead to sustainable change in ITE

Pedagogy as situated reasoning about teaching decisions

PCK as socially-situated knowledge about subject-specific teaching and learning

Local opportunity structures, occupational identity and teacher/learner beliefs as elements of the social situation of PCK

**Assumptions**

**Theoretical constructs**

**Intervention components**

Introduction to literature on subject-specialist pedagogy and PCK (pre-reading and workshop)

Mini-lectures and group activities in workshop:

* What is PCK?
* Content representations for student teachers
* Exploring beliefs about vocational subjects
* Vocational learners and occupational identity

Learning resources (for both teacher educators and student teachers):

* Animated videos summarising key concepts
* Video clips of subject-specialist teaching, linked to key concepts
* Paper-based materials linked to group activities
* Suggestions for further reading and online resources

Pre-intervention survey

In-workshop anonymous written comments on initial reception of ideas

Post-interview 1, telephone or face-to-face (within 4 months)

Post-interview 2, telephone or self-completion (3-6 month follow up)

**Data collection**



**Organisation of SSP in ITE**

**(Framing)**

* Diversity of subjects
* Responsibility for delivery
* Role of mentors
* Grouping of trainees (generic/discrete)

**Teacher educators’ prior knowledge**

**(Framing)**

* Subject background of teacher educators
* Prior knowledge of PCK and CoRe
* Knowledge of other relevant concepts
* Knowledge of literature on SSP

**Meaning and nature of SSP**

**(Classification)**

* Existence in ‘weak’ or ‘strong’ sense
	+ Distinctive knowledge base
	+ Subject strategies for teaching/learning
	+ Specialist/generic groupings
* Reproduction of traditional teaching/learning or challenge/innovation?

**Value of the intervention in conceptual terms**

* Perceived value of conceptual framework of PCK
* Specific value of CoRe for ITE programmes
* Anticipated benefits/difficulties for student teachers

**Sustainability**

* Actual change so far/prospects for change
* Impact on student teachers
* Personal knowledge development of TEs
* Involvement of mentors
* Relation to external pressures
	+ TE workloads
	+ Course/partnership structures
	+ Inspection/qualifications frameworks
	+ Wider FE context

Figure 4: Framework for the deductive component of the data analysis. Relationship to the classification and framing dimensions of Figure 1 is shown where relevant.



Figure 5: Distribution of participants’ survey responses to the question ‘Please describe what “subject-specialist pedagogy” means to you’. Free text responses categorised according to common themes. Responses may fall into more than one category.

**Box 1: Seeing the light**

Zoe reported an increased awareness that pedagogy could be specific to different subjects, which was reinforced by a specific occasion from her recent experience as an ESOL teacher. She had been required to cover a colleague’s class on ‘functional’ maths, having been assured she would not need any technical knowledge of mathematics because the session was simply reinforcing skills the students had already acquired. However, one student showed a very weak understanding of a basic concept, and Zoe herself found that she lacked both the subject background and pedagogical knowledge to support him:

*I had a student who didn’t understand the whole thing about units, tens, hundreds and everything else. I didn’t even realise at the time that is called number placement, I am not a maths specialist! So I was trying to show him how we work it out, but he just wasn’t getting that whole thing about base ten, and so in the end, I had to have a chat to a maths specialist, I discovered it was called number placement, I went right back to some primary maths materials, and found ways of helping this student to understand what was going on. So, it was basically counting beans, so you give them 15 beans and then they have to put them – they have to separate out 10 and see how many are left over.*

Zoe called this a “*lightbulb moment*” which had reshaped her thinking about questions to be asked of trainees at observations. Previously, she had used quite generic questions as she believed that a ‘workshop’ format for a teaching session implied a high degree of pedagogical uniformity, whatever subjects were involved. However, her view following the intervention was that “*generic pedagogy is not enough*”: she had refined her observation questions to encourage trainees to reflect on the subject-specialist aspects of their teaching.

Figure 6

1. This reading consisted of a report on improving SET teaching (Guile et al., 2016) and a journal article on PCK (Mulhall et al., 2003). [↑](#footnote-ref-1)
2. [URL removed for review] [↑](#footnote-ref-2)
3. These include academic and professional literature, personal experience and beliefs, and the knowledge, experience and beliefs contributed by students and colleagues. See Maxwell (2010). [↑](#footnote-ref-3)