

Supporting the reconstruction of identity within subject specialism transition: Shaping the roles of tutor and coach within the TSST programme

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The shortage of teachers is forcing schools to use teachers who have not qualified as mathematics and physics specialists to teach those subjects. In 2015-2016, the Teacher Subject Specialism Training (TSST) programme was launched to attract teachers who have previously qualified to teach other subjects. The decision to offer TSST was taken after much debate about the extent to which it is possible to develop sufficient subject specific knowledge and pedagogy within the constraints of the programme. In this case study, the perceptions of participating teachers, departments and tutors are explored. A model is proposed of plural transitions to and through “complex identit[ies]” (Leach & Moon, 2000, 397) as perceptions of competence are disrupted and reconstructed. Viewing the findings from a socio-constructivist perspective, the roles of tutor and coach in this identity formation are reconsidered, building on the work of Shulman (1986) and Korthagen (2004).

Key words: teacher professional development; subject specialism; teacher supply

Introduction

The shortage of teachers in England is well documented and providers of initial teacher education have been encouraged to innovate and take ‘risks’ in order to recruit sufficient teachers to meet local and national needs. In recent years there have been a number of initiatives beyond the incentives of bursaries and ‘golden hello’ payments which are aimed at increasing recruitment to shortage subjects, including Subject Knowledge Enhancement courses for trainee teachers and, more recently, Teacher Subject Specialism Training (TSST) for qualified teachers who wish to, or are required to, teach a subject which is not that in which they qualified.

The case study presented here was undertaken by one school-higher education institution partnership which began offering TSST in mathematics in 2016-17. The decision to offer the TSST was taken with some hesitation due to the sense that it was not addressing the underlying need to recruit mathematics specialists with the experience of the subject which will motivate pupils to become future teachers. It was important to the partnership, therefore, to evaluate the impact of that model of TSST on teaching and learning within the partnership schools.

Theoretical frameworks

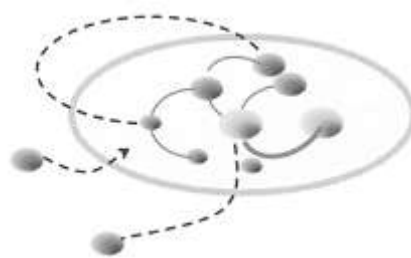
Three theoretical frameworks have informed the design of the TSST programme considered here. The first is the Croft (2015) model, a constructivist representation of reflection and knowledge growth. This is then considered alongside Shulman’s (1986) framing of teacher knowledge within three domains and an integrated model is

developed (Croft, 2015). However, although the integrated model provides an accurate representation of the principles which had underpinned the original design of the programme, the findings of this study resulted in a shift towards a focus on Korthagen's (2004) model of teacher characteristics. This model is introduced and discussed later in this presentation.

Reflection and knowledge growth

Drawing on the “blobs and links” imagery of Ball and Knights (2004), Croft (2015) developed a model of construction of knowledge in which each of the ‘blobs’ represents an idea or experience which has been encountered and reflected upon. As more episodes of learning are experienced, links are formed between them, represented by solid lines in the diagram. However, this process of link formation takes place over time through reflection (Dewey, 1933; Loughran, 2007; Mason, 2004). Therefore, in this image, broken lines represent the dynamic process of formation of connections through reflection.

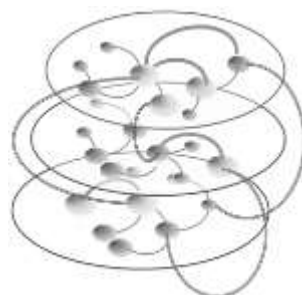
Figure 1. A visual representation of reflection and knowledge growth



Connected domains of teacher knowledge

Shulman's (1986) discussion about domains of teacher knowledge currently underpins policy and curriculum design for teacher education both locally and more widely (see DfE, 2015, for example), with distinction made between “content knowledge”, “pedagogical content knowledge” and “curricular knowledge”. Disregarding, for the moment, the influence of knowledge of assessment requirements, the connected network image can be modified to illustrate these three domains. (See Figure 2.)

Figure 2. The construction of connected networks of teacher knowledge



The model of TSST in use

The principles underpinning the design of this TSST programme are based in this ‘connected domains’ model of teacher knowledge and in the enablement of focused reflection to improve practice through social interaction. In tutor-led sessions, participants are given opportunities to develop content and curricular knowledge alongside subject pedagogic knowledge through episodes in which tutors model approaches to teaching the subject and participants engage firstly in content development activity and then subsequently in reflective discussion about pedagogic choices.

Whilst in school, participants are supported by a subject-specialist ‘coach’ within the department. Using a structured observation schedule, the coach is expected to engage in reflective discussion about the subject pedagogy demonstrated and support the participant in identifying priorities for development. Coaches also undertake observation visits to other departments across the network of participating schools, as a moderation and quality assurance mechanism.

Methodology and methods

Although initially framed as a case study to explore the effect of the TSST on the quality of teaching, this project has now evolved into participant action research, with the aim of effecting change in institutional practice in the manner of McAteer (2013), and Norton (2009).

The initial research questions related to the concerns expressed across the partnership about the limitations of the TSST programme to address the perceived needs of non-specialist teachers teaching mathematics. Hence the questions proposed were:

- Is it possible to develop sufficient subject specific knowledge and pedagogy within the constraints of the TSST programme?
- What is the impact of the TSST programme on the teaching and learning of mathematics and physics?

The methods used to address those questions were (i) participant evaluations of the taught content and approaches, (ii) participant questionnaires to explore their perceptions of the support provided and the impact it had on their development as subject teachers, (iii) documentary analysis of the observation schedules to gain insights into the achievements of the participants from the perspective of observers and (iv) interviews of employers of the participants to discover their perceptions of the effectiveness of participants in their new roles.

Findings and discussion

The findings from this initial study can be categorised into three key themes: growth in confidence, the influences on that growth and the perceived distinction between content knowledge and pedagogic knowledge.

Growth in confidence

An increase in confidence was reported by participants in the questionnaires, by coaches through the observation feedback reports and by employers in the interviews. This quality was referred to more than content or pedagogic knowledge, or any other aspect across the study, although both participants and coaches expressed a view that improved subject content knowledge resulted in improved confidence. This was exemplified by reference to the confidence to plan and deliver effective lessons independently and the subsequent improvements in pupil attitudes and behaviour.

Factors which influenced that growth

The influence of the tutors through the taught sessions was perceived as a major positive factor in the development of the participants. Participants valued the environment, the resources and ideas from the sessions, the shared experience of the tutors and the peer network.

The influence of the coaches was more variable. Whilst some participants viewed both internal and external coaches as influential, others found one or other of these to have made less contribution to their development.

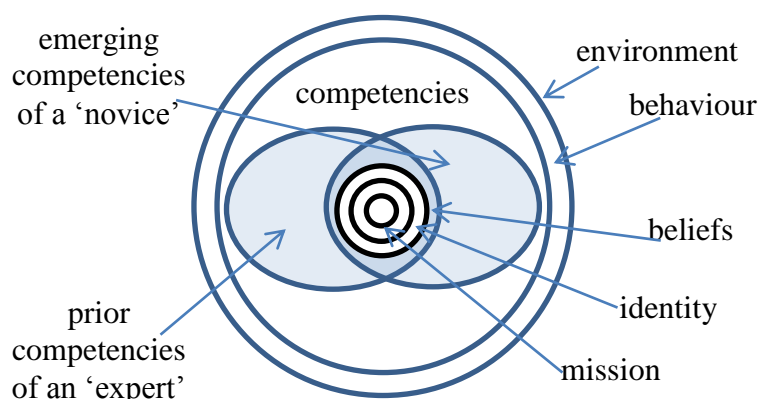
The perceived distinction between content knowledge and pedagogic knowledge

Participants perceived TSST to have had a greater influence on their subject knowledge than on their subject specific pedagogy. This may be linked to a variability in the use of the observation schedule and the focus, in debrief conversations, on the aspects of pedagogy articulated there.

Discussion – revisiting the theoretical framework

The focus, in all the findings, on affective aspects of teacher professional development, demands a reconsideration of the theoretical framework on which the programme was based. Attention is drawn to Korthagen's (2004) model of influences on teacher functioning and, in particular, to the "environment" and "competencies" levels and the way in which they are seen to interact with "identity". Korthagen (2004) discusses the "substantial personal transformations they [beginning teachers] pass through as they become teachers." (p.82). For TSST participants there appears to be another period of transformation in which they move from being 'expert' in their own field to 'novice' as a mathematics teacher and then towards 'competence' in that new role. Korthagen's model shows how this shifting of competence can disrupt perceptions of identity, which must be reconstructed to take account of the new subject knowledge needs. The findings suggest that the affective response to this disturbance needs to take a more central place in shaping the TSST design and delivery. This model of shifting competencies and their influence on identity is illustrated in Figure 3.

Figure 3. Shifting competencies – an adaptation of Korthagen’s (2004) “onion” model



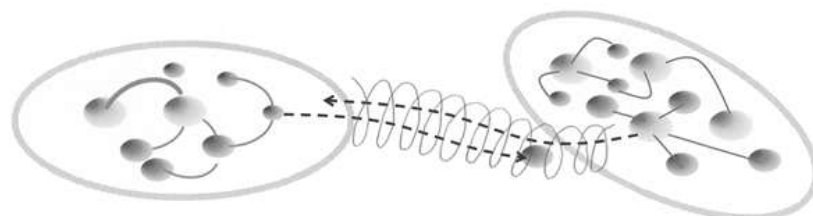
Conclusions and implications

In the initial design of the TSST programme discussed in this paper, the focus was on modeling and sharing practice in order to grow aspects of subject knowledge for teaching, in line with Shulman’s (1986) categories of teacher knowledge. The findings of this case study suggest that greater account should be taken of affective factors, particularly the potential to experience a loss of confidence as a result of shifting from ‘expert’ to ‘novice’ as a teacher and the power of the tutor and coach to enable a transformation in confidence by influencing perceptions of competence.

Implications for the theoretical framework

The role of the tutor and coach, then, can be seen as one of enabling, directing and strengthening reflection which leads to growth. This construction of knowledge is illustrated in Figure 4, where the reflective construction of links between ideas and domains of knowledge is encompassed by a strengthening and directing outer casing. It is within the remit of the tutor and coach to provide that outer casing, through modelling of practice with meta-narrative, feedback which focuses explicitly on subject pedagogy, targeted questioning which systematically develops both knowledge and pedagogy and responsiveness to affective disturbance.

Figure 4. The enabling role of the tutor and coach (Adapted from Croft, 2015, p.213)



Implications for TSST programme design

Whilst application of the Shulman framework would suggest that distance and online programmes might support subject knowledge development alongside the coaching of subject pedagogy in school and, thereby, offer a more cost effective model, the findings here suggest that time spent in face-to-face contact with tutors and with peers is fundamental to the effectiveness of the programme.

Similarly, the TSST coach has the same level of influence as other professional development mentors and, therefore, must be supported to develop that mentoring role. In the DfE (2017) review of initial teacher education, the role of the mentor is recognised as highly influential for all levels of teacher professional development. In order to promote this development, the findings of this study have been shared with coaches for the 2017-18 TSST at induction. However, funding and capacity to give coaches the necessary time for meaningful reflective discussion is a priority as the TSST professional development model is reviewed in 2018.

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