

Secondary School Subject Departments as Sites for Teachers' Learning

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Background

While the revised National Curriculum in England continues to recognise the importance of school subjects, its parallel 'emphasis on the development of skills for life and work' (QCA 2007) calls for new approaches to planning and teaching. There is now a greater attention being paid at all key stages to understanding the processes and concepts at the heart of each discipline. In Science education, a more 'appropriate' balance between science process and factual knowledge' is intended to develop young people's scientific literacy in order that they can make informed decisions about economic and social issues. Since a number of studies have shown that science teachers' own scientific literacy is limited (Lakin & Wellington, 1994; Abd-El-Khalick, Bell & Lederman, 1998; Halai & McNicholl, 2004), there continues to be a need for teacher development in this area so that teachers can meet the challenges of teaching these new curricula. In some respects the teaching of history presents a similar case; curriculum change, (DfES 2007) is also creating significant new demands, which many history teachers feel ill-equipped to address (Historical Association 2007). Within the new curricula there is a clearer focus on more contemporary history, and as a consequence there is a call for teachers to learn not only new subject knowledge, but also new pedagogical skills in handling potentially sensitive or controversial issues.

Research Questions

Working within a socio-cultural framework, our aim is to examine the subject specialist expertise that is distributed across departments, located in material artifacts such as schemes of work, as well as being held by knowledgeable colleagues. Socio-cultural understandings of learning (Daniels et al., 2007; Edwards, 2005; Wells & Wood) which emphasise what Vygotsky terms 'the social situation of development' (SSD), recognise that individual learners both internalise what is valued in a SSD and, in turn, act on the SSD to shape it. In this study we will take school subject departments as the SSD, examining them as learning environments for teachers, exploring how expertise is recognised, drawn upon and developed in tackling the problems that arise spontaneously as teachers plan and reflect together on their teaching of an unfamiliar curriculum.

The study addresses three specific research questions:

1. How are teachers positioned as learners within secondary school departments?
2. What is the range and origin of resources drawn upon by different members of school subject departments in the learning of PCK?
3. In what ways do different members of the subject department draw on these resources to develop their PCK?

Methods

Two science and two history/humanities departments from four different schools in highly regarded ITE partnership were selected for this study as being effective sites for student teachers' learning, since pilot work (Burn et al, 2007) had indicated that departments selected on that basis also proved to be rich learning environments for all teachers working within them. Researchers spent two continuous weeks 'hanging out' in each department and data was gathered via participant observation; semi-structured interviews with department members and the collection and scrutiny of relevant department documents. The four subject departments were used as broad units of analysis

to examine learning as a reciprocal process of internalisation and externalisation; that is of interaction between individuals and the knowledge-laden social practices they inhabit. Both the interview and observation data were analysed (using the MAXQDA software package) with a coding system partly based upon Lee & Luft's (2008) conceptualisation of PCK.

Frame

While we acknowledge the critical importance of Shulman's (1986) notion of 'Pedagogic Content Knowledge' (PCK) and the extensive research built upon it, we share Hasweh's view that the creation of new subject specific pedagogical constructions occurs in practice, through teachers' engagement in the inventive processes of planning and teaching (2005:273). Our research is also informed by Hodkinson & Hodkinson's (2005) views of teachers' learning as a process of personal construction, combined with socio-cultural perspectives in which learning is understood as being rooted in participation. Specifically, this study examines how science and history teachers are able to develop the subject specific professional knowledge or PCK that they need to teach what are for them new areas of the curriculum or new kinds of subject knowledge. Although subject departments or their equivalent remain the main administrative unit in secondary schools, there has been limited exploration of their role as sites for teachers' learning.

Research findings

This paper presents preliminary findings that suggest considerable teacher learning of PCK occurs in schools; that this learning is often spontaneous and serendipitous as teachers draw upon the expertise of colleagues and other material artifacts; but that the major affordances of this learning are a common shared physical space and a shared ethos of what it means to be an individual subject teacher as well as a member of a subject department. Further insights into the relationships between the individual, their identity and self-concept as teachers and learners, and the situation in which teaching and learning occurs, will also be presented.

Since most teacher education programmes have a substantial school-based component, we anticipate that the findings from this research study will be of interest to ITE providers internationally, in beginning to indicate how the university contribution to the development of PCK could be better integrated and matched to the learning that occurs in school. Furthermore, given the criticisms of traditional 'top-down' models of Continuing Professional Development (CPD) as well as the recent reviews of research on CPD (Edwards et al., 2002; Cobb et al., 2003), including the four EPPI reviews conducted by Cordingley et al. (2003, 2005a, 2005b, 2007), there is a growing argument for more effective professional development being based upon collaborative forms of learning within the school context. Therefore, our study does provide some 'food for thought' in helping to develop a better understanding of how to facilitate teacher learning in the school context.