So many worlds, so much to do: Identifying barriers to engagement with continued professional development for teachers in the further education and training sector

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Between 2008 and 2012, teachers in the further education (FE) sector were required by legislation to engage with 30 hours (pro rata) of continued professional development (CPD), and this is reflective of the ways in which, historically, policy interest in FE teachers' professional development has waxed and waned. Situated within this historical context, this paper, drawing on a study carried out between 2009 and 2010, presents teachers' perceptions of the ways in which they are restricted from engaging with CPD. Through the application of actor-network theory concepts of multiple worlds and realities, three competing and disjunctured 'reality networks' are identified: a) policy reality network; b) organization reality network; and c) teacher/CPD reality network. Structural arrangements and ongoing funding contractions for the sector, alongside teachers' working arrangements, are examined so as to identify whether these create barriers for teachers. It was found that the most significant barrier to engagement with beneficial and meaningful CPD is the result of teachers operating in impoverished and limited teacher/CPD networks. These impoverished networks do not offer teachers the opportunity to forge links with similar subject-specialist teachers, leaving them to develop subject and occupational expertise in isolation.

Keywords: professional development; further education and training sector; post-compulsory; actor-network theory; subject-specific knowledge development; occupational development

Introduction

The quotation in the title 'So many worlds, so much to do' (Tennyson, 1901) reflects both recent activity around continued professional development (CPD) for teachers in the further education (FE) sector and the conceptual framework used in this paper. Increased focus on 'measurable' forms of CPD activity for FE teachers was brought about through legislation implemented by the previous UK Labour government (HMSO, 2007b). Perhaps the most significant aspect of the legislation is that it shifted responsibility for engagement with CPD directly onto teachers. In reflecting on the period between 2008 and 2012, when the legislation was in force, this paper raises questions about the extent to which teachers were able to meet these requirements in meaningful and beneficial ways, given the continuing structural arrangements of the sector. In order to explore barriers to their engagement with CPD, this paper reports on an empirical study undertaken with teachers in the FE sector in the academic year 2010 to 2011. The short period of this legislative requirement is set within the historical context of past periods of government interest in professional development of 'technical teachers'. This brief review of policy history enables the relocation of responsibility for CPD from government (central and local) and

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organizations directly onto teachers to be charted. I then explore what are currently, within the literature, perceived to be the structural issues in FE that impact on teachers' working conditions and that may well present barriers to engagement with CPD. A key issue for understanding teacher professional development is that policymakers, organizations, and teachers have differing perspectives on both the purpose and nature of activities enacted in pursuit of CPD, formed in part by the different 'worlds' in which they operate. Therefore, actor-network theory (ANT) is used as an analytical tool to identify and examine these different perspectives which, in ANT terminology, are multiple worlds or networks that conceptualize CPD in different ways. From this I explore one identified network and how working within an impoverished teacher/CPD network is the most challenging barrier to CPD.

The historical context of CPD for further education teachers

Perhaps the golden age of professional development for FE teachers stemmed from the James Report (HMSO, 1972). The report took a holistic view to teacher development that undertook to develop not only professional competence but also personal education and development. The report stated that, 'The best education and training of teachers is that which is built upon and illuminated by growing maturity and experience' (ibid.: 3, para. 1.9).

The report envisaged a wide range of CPD activities for FE teachers that ranged from evening meetings, discussions, weekend conferences, and other short-term activities to long courses leading to higher degrees or advanced qualifications. In addition, periods of secondment to fields outside teaching, to widen an individual's experience, were also recommended. The report makes clear and transparent that FE teachers should be treated no differently from their colleagues in schools:

In the same way, each FE College should have a suitably qualified member of staff designated as its professional tutor, with similar responsibilities [as those for schools] for drawing up a training programme for its staff. All FE teachers in full-time service should have the right to third cycle [CPD] facilities on a scale not less than that suggested above for teachers in primary and secondary schools. (ibid.: 13, para. 2.26)

Following these recommendations, in the late 1970s there was a considerable increase in the provision of staff development in colleges. A report from the Professional, Industrial and Commercial Updating Programme (PICKUP, 1986) states that by the 1980s, for planning purposes, a top-down approach was deemed necessary, with the responsibility for CPD in the hands of the organization (i.e. the FE colleges), managers, Local Education Authorities (LEAs), and regional councils and bodies. In addition, many colleges appointed staff development officers to promote and coordinate the work (Cantor et al., 1995).

The same PICKUP report explains that, by the mid 1980s, there were over 100 centres providing FE staff with updating opportunities in specific vocational and curricular areas through a network of Department of Education and Science (DES) pump-primed courses that were coordinated by the standing conference of regional advisory councils. There was also the Further Education Staff College (Coombe Lodge), which, although traditionally providing training to managers, increasingly offered CPD to 'other ranks'. In addition, there were teacher-education institutions, normally universities or polytechnics, and private trainers such as the Industrial Society providing CPD opportunities. Funding for CPD at the time was largely provided and distributed through LEAs and managed by the DES, although colleges were expected to pay for some staff-development events such as conferences, short courses, and seminars out of their existing college budget.

The late 1980s onwards marked a context of ever-growing change for the FE sector and also marked the beginning of CPD as training in response to organizational, policy, and other external needs. At this time, CPD was often focused on specific needs in response to change (Further Education Unit, 1986). An example of policy-driven CPD was in response to the White Paper, *Training for Jobs* (DES, 1984). This drove the provision of a series of geographically placed seminars that brought industry experts and FE practitioners together in order to identify good practice (Further Education Unit, 1986). A further example of externally determined CPD arose from a teacher-training working group that recommended all FE teachers should be prepared by either initial training or CPD to recognize special educational needs. With this in mind, they proposed a series of regional seminars, organized on a national basis (DES, 1987).

Incorporation was a sea-change moment for the sector. Following the 1992 Further and Higher Education Act, FE colleges were 'incorporated' on I April 1993. This effectively removed colleges from LEA control, relocating it to college senior management and boards of governors. Financial distribution for the whole college budget - not just for professional development moved from LEAs to a newly formed funding body, the Further Education Funding Council (FEFC). Incorporation was introduced in a rush and was seen at the time as 'a notoriously quick fix' (Ainley and Bailey, 2000: 72) and there were many unintended consequences, not least of which was the impact on CPD. In the years immediately following incorporation, colleges themselves were solely responsible for the planning and provision of staff development, with government taking a laissez-faire approach to the professional development of staff. It was made explicit that resource allocation for staff development was a matter for colleges to determine. Consequently, CPD provision varied widely. According to Cantor et al. (1995), London colleges devoted varying sums to staff development of between I and 4 per cent of their total budget. Additionally, colleges were responsible for all staff development and training, not just for teaching staff. As a consequence, many organizations in the sector adopted a whole-organization approach. According to the Further Education Unit (1986), the usual activities provided were in-house programmes of workshops and conferences delivered by internal staff, 'experts' bought in from universities, and a growing number of private organizations. From these descriptions it seems that in this period, CPD was conceptualized as knowledge transmission and was planned by others, not by the teachers. The increased financial pressure on colleges brought about by the end of LEA funding means that the levels of CPD activity seen in the 1970s and 1980s have never again been reached.

Renewed interest in the professional development of teachers in the FE sector began at the turn of the 21st century. The Further Education Teachers' Qualifications Regulations (HMSO, 2001) required, for the first time, that all new teachers in the sector should hold a teaching qualification, although it was silent on CPD post-qualification. This legislation was strengthened, and a requirement for CPD was introduced through two subsequent pieces of legislation. The first built on the requirement for a teaching qualification by requiring that all new teachers should also gain Qualified Teacher Learning and Skills (QTLS) status (HMSO, 2007a). The second required all teachers, regardless of when they commenced teaching, to undertake 30 hours of CPD per academic year (pro rata for part-time staff) (HMSO, 2007b). This legislation also required teachers to lodge a record of their CPD with their employing organization and with the recently formed professional body, the Institute for Learning.

The brief review of the history of CPD above shows that the responsibility for CPD has historically lain with the employer and with LEAs. However, the wording in the 2007 legislation, which states that, 'every full-time teacher must complete at least 30 hours of CPD' (HMSO, 2007b: 2) clearly shifts responsibility for CPD directly to the individual teacher. Of concern is whether teachers during that time period (and also under current organizational and funding

arrangements) had the space and control to plan and carry out their CPD activities effectively and in meaningful ways that could meet these requirements.

Structural barriers to meaningful professional development

It can be argued that the diminished working conditions and the wholesale casualization of the sector presents problems with regards to how teachers can engage meaningfully with CPD activities. Not only did the process of incorporation described above impact on the provision of CPD, it also marked, distinctively, the beginning of a process of worsening conditions of service for FE teachers. Since incorporation, incremental 'efficiency gains' have ensured that organizations are more efficient and cost-effective by compelling colleges 'to expand while cutting unit costs' (DfES, 2002: 5). This period saw a reduction of funding for the sector (University and College Union, 2006; Fletcher and Owen, 2005). This historic reduction of funding continues today, with the 2013–16 skills funding statement (Skills Funding Agency, 2014) setting out the government's funding provision for the FE sector. It proposes that, from the base funding given in the academic year 2013/14, there will be a 20 per cent cut to funding by the academic year 2014/15.

The effect on teachers was that the 'Silver Book' contractual arrangements were abandoned, to be replaced with contracts that were more cost-efficient for colleges, enabling a 40 per cent growth in student numbers between 1993 and 1996 on less funding than was available in 1992 (Kerfoot and Whitehead, 1998). This move significantly worsened teachers' conditions of service; holidays were reduced, teaching load increased, and the tasks outside of teaching that teachers could be required to do were broadened. Teaching became 'casualized' (Foster, 2005; DfES, 2002) until the sector now employs a higher percentage of casual staff, with the exception of catering, than any other sector of the economy (Wallis, 2008). The impact of this is twofold. First, teachers' work is intensified, giving them little space for activities outside of their direct teaching role. The impact of this, according to Crowley (2002), leads teachers to work in isolation. Second, as Bathmaker and Avis (2005) found, these changes impact negatively on teachers who are demoralized and overstretched. Edward et al. (2007) report that teachers and managers described coping with endless change coming at them from all directions and struggling to balance the needs of their learners with the demands of their managers, inspectors, and funding sources. There is a concern here regarding the extent to which these structural circumstances impacted on teachers' ability to meet the legislative requirements for CPD. As part of a casualized workforce, with little job security and highly intensified working conditions, it must come as little surprise if the requirements were not as successful as hoped.

Given the constraints above, there is a real danger that CPD, if driven by legislative requirements, may be undertaken in instrumental and 'performative' ways. Performativity is defined by Ball (2008: 50) as a 'mode of regulation that employs judgements, comparisons, and displays as measures of productivity or output'. This means that targets and measurable outputs become the rationale for action, the driving force for all and any activity as policymakers, managers, and teachers become focused on outputs, targets, and institutional and individual performance.

However, within this otherwise negative picture, there have been some advances in teachers' CPD in recent years, with large injections of money and centrally planned activity. An example of this was the allocation of £30 million to providers by the Learning and Skills Council (LSC) in October 2007, to help implement the new legislative requirements (LSC, 2007). A further example of centralized support for CPD are the recent national CPD programmes such as the Subject Learning Coach (SLC) programme that attempted to improve subject-specific teaching. Browne et al. (2008) report that £15 million a year over a four-year period was spent on the

SLC programme over a four-year period in order to improve teaching and learning, with variable results and impact. Coffield and Edward (2009) also suggest that this has had little noticeable effect on teachers' CPD.

Research design

Conceptual framework

Actor-network analysis is a conceptual framework (inter alia, Latour, 1987; Callon, 1986; Law, 1986) that makes visible different, alternative networks in ways that other approaches do not. As Fenwick and Edwards (2010) explain, the usual view of social constructivists is that there is one world and that different perceptions are brought to bear on this. ANT has reshaped ontology and highlighted that the reality we live with is one performed by a variety of practices with no single, natural, or material reality. For Law (2007), the debate is about what is real, what is out there, and how reality is achieved. The assumption behind ANT is that, with performance defined as 'material processes, practices, which take place day by day and minute by minute' (Law and Singleton, 2005: 775), reality is formed through action in the here and now. It has no form outside of this performance in relation to other actors within the network. Consequently, as reality is performed in different ways by different actors within alternate actor networks, this reality is multiplicitous. The distinction that 'reality does not precede the mundane practices in which we interact with it, but is rather shaped within these practices' (Mol, 1999: 75) is important as it then becomes the situation within which action is found, and the action itself that shapes reality. Actor-network approaches therefore explain complexity and contradiction by conceptualizing of multiple realities and worlds that are inhabited by alternate actor networks. This ontological position is now being applied in a growing number of practical and research contexts.

The concept of 'boundary objects', drawn from ANT, is an analytical tool for exploring the interaction of these multiple realities and which offers potential for this paper because, as Law (2007) explains, the most interesting places lie on the boundaries between order and disorder, or where different orders rub up against one another. For Gholamreza and Wolff (2009), boundary objects refer to entities that act as an interface between different social worlds and cross different community boundaries. Through this idea, we can examine how the same concept - in this instance, CPD - carries different and alternate meanings. The concept of boundary objects has been used within communities of practice (see for example Wenger, 1999). However, Edwards et al. (2009) warn that Wenger over-simplifies the concept of boundary objects within communities of practice by portraying them as bridges that sit on the edge of communities. Within an ANT approach, boundary objects can reside at any point within a network. Star and Griesemer (1989) explain that they are both plastic enough to adapt according to need, but robust enough to maintain a commonly held identity across social worlds or alternative networks. Bowker and Star (2000: 289) conceptualize boundary objects as being the same as any other entity within a network; they can be 'stuff and things, tools, artefacts and techniques, and ideas, stories and memories'. It is the ways that these things impact on other things within the network that determines whether they are defined as boundary objects. If some of the things and artefacts or, in ANT terminology, 'actors' within the CPD network are identified as boundary objects, then the impact of these on other worlds or realities can be traced.

Methods of data collection

Teachers who had completed their teaching qualification for the sector in the five years to 2009 were asked to report on their CPD activities for the academic year 2009 to 2010. Forty-seven questionnaires and six in-depth interviews were analysed to provide the data. Analysis was conducted using a constructivist approach and the data generated by the questionnaire informed the development of the interview schedule.

The questionnaire comprised three sections. The first section collected demographic data including gender, length of time since qualification, type of FE organization the respondent taught in, and whether they still taught in the sector. The second section was designed thematically to answer the research questions. Four main themes were addressed:

- I. how CPD is organized, including in response to the legislative requirements
- 2. reasons for undertaking activities
- 3. types of activities undertaken for the purpose of CPD
- 4. barriers to engagement with CPD.

This section also included two open questions to collect qualitative data about which CPD activities were seen as meaningful and beneficial, and those that had little indefinable benefit for respondents. The third and final section asked respondents to provide a contact email and telephone number if they were willing to take part in follow-up interviews. Thirty-six respondents indicated a willingness to do so and supplied contact details.

Respondents for interview were purposively sampled to include a wide range of teaching subjects and occupational areas, which were: hairdressing, painting and decorating, applied sciences, human resources, counselling, and basic-skills maths. A semi-structured interview schedule was developed to capture data on the lived experiences of teachers' engagement with CPD. The first part of the schedule reminded me, as researcher, to explain the nature of the research. There were seven overarching questions with researcher's prompts under each one. The first question asked for general information about the respondent's professional role, subject specialism, and employment contract. The second and third questions explored the CPD activities that the respondent had engaged with in the previous academic year, and the reasons why these had been chosen. The fourth and fifth questions asked the respondent to identify and explain, from those already discussed, the most and least valuable CPD activities. The final two questions explored the number of CPD hours that the interviewees were required to do, and the number that they actually carried out. The interview schedule served mainly as an aid memoire for me as interviewer, to ensure that similar areas were covered in each of the interviews. It was designed as a springboard to develop a professional conversation for exploring contextual perceptions through a non-directive approach (Robson, 2002) rather than to elicit specific answers.

Illustration of findings

The findings reported here inform the later discussion on the barriers to CPD described by FE teachers.

Teachers in this study were asked to rank in importance the reasons for undertaking CPD (see Table I), and their responses portray a complex array of reasons. It initially appears that the statutory requirements for CPD are impacting on practice by encouraging teachers to undertake activities for professional-development purposes. An analysis of the raw data shows that the requirement for CPD was the most important reason for doing CPD, with ten respondents ranking this as the main reason. However, there were also eight respondents who placed this as the least important reason. To enable further analysis, these rankings were condensed into

two categories, with rankings I to 4 denoted as 'most important' and rankings 5 to 8 as 'least important' (Table I). Here, the statutory requirement as a reason for CPD activities was evenly split with it being the fourth most important (17 respondents) and also the third least important (16 respondents).

Table 1: Ranking of reasons for undertaking CPD

	Most impt	more important ◀				less important					
Answer options		I	2	3	4	5	6	7	8	Least impt	Response count /44
Finding out about awarding body requirement	8	3	2	I	2	2	3	7	3	15	23
To gain a required qualification	18	8	3	4	3	I	2	I	2	6	24
Improving teaching skills	26	9	8	6	3	0	0	1	I	2	28
Finding out about changes to funding	5	0	0	3	2	5	7	5	5	22	27
Updating subject knowledge	27	4	П	4	8	I	I	I	2	5	32
Required to undertake CPD	17	10	3	2	2	5	2	I	8	16	33
Finding out about government changes that impacted on my work role	6	0	2	I	3	10	10	2	2	24	30
Response to curriculum changes	21	5	2	8	6	3	4	6	ı	14	35

These findings suggest that the legislative requirements are the main drivers for CPD. However, for many teachers this was not the overriding reason for undertaking CPD. The raw data shows that CPD was also done to improve teaching skills (nine respondents) with only one respondent ranking this as least important. When the data is condensed into most or least important, updating subject knowledge (27 respondents) is seen as the most important reason, with improving teaching skills the second most important reason (26 respondents). Government changes that impact on role, and changes to funding, were the least important reasons (24 and 23 respondents respectively), followed by awarding body requirements and responses to curriculum changes (15 and 14 respondents respectively). A clear distinction emerges from these findings between those things that are central to the teachers' immediate role and those that are partly extraneous to immediate classroom practice. The drivers for teachers' CPD activities identified here are, first, to enhance subject and occupational knowledge and, second, to enhance teaching skills. It appears that CPD is not carried out to meet external requirements or to comply with external requests and this was further explored at interview.

Respondents were asked to report on barriers to engagement with CPD activities. The findings suggest that teachers were flexible in their approaches to accessing CPD and many did not identify barriers (see Table 2). More than half (26) had no problems in accessing CPD. For 12 (27 per cent), workload issues meant that they could not access CPD while eight (18 per

cent) found it difficult to identify appropriate CPD activities. Five (11 per cent) could not secure funding. Respondents were much more negative about their ability to access CPD activities when the subject was explored further during interviews. Their responses are reported under the discussion of findings in the following section. Briefly, the barriers identified at interview included organizational constraints and relevancy of the CPD provided by teachers' organizations in meeting their professional-development needs. Teachers also discussed being unable to access funding for self-identified CPD opportunities such as events and externally run courses and workshops.

Table 2: Were there any problems in accessing CPD?

Answer options	Response (%)*	Response count /45
No – I could access all CPD I wanted	57.8	26
Yes – I could not secure funding	11.1	5
Yes – I found it difficult to identify appropriate activities	17.8	8
Yes – I could not fit identified activities into my work pattern	15.6	7
Yes – Workload issues meant I could not take part	26.7	12
Other (please specify)	11.1	5

^{*} Some respondents provided more than one problem

In light of the previous discussion concerning both historic and current cuts to FE funding, the research explored how CPD was funded and whether this in particular proved to be a barrier for teachers. Only half of the respondents (22) were able to secure funding from their organization for CPD activities. Of the teachers whose colleges did not financially support their CPD, six (14 per cent) stated that CPD was mainly self-funded, four (9 per cent) had some of their CPD funded by external organizations and nine (20 per cent) identified CPD activities that did not require funding.

Discussion of findings

Using the conceptual frameworks of multiple realities and boundary objects, this section explores the policy impact of the legislative requirements between 2008 and 2012, for teachers seeking to engage with and then record CPD activities. Using the conceptual framework of multiple realities (inter alia, Law and Singleton, 2005; Mol, 1999), it becomes less problematic to see that CPD does indeed mean different things to different people. This specific ANT approach allows the emergence of three distinct realities, worlds, or networks, which transcend mere perspectives of CPD within the sector that are:

- I. policy reality network
- 2. organizational reality network
- 3. teacher/CPD reality network.

The first reality network is the 'policy reality' that presupposes the nature and purpose of CPD in the FE sector, and it is this network that produces the legislative requirement. These requirements may shape the type of CPD activity undertaken by teachers and the ways in which it is structured. That the requirements are impacting on teachers is evident, as the teachers in this study report a high level of awareness of, and compliance with them. The majority of teachers (93 per cent) said that they are members of the Institute for Learning (requirement

of the legislation). Generally, they are also exceeding the number of hours of CPD set by the requirements, with almost half (20 respondents) stating they carried out more than the 30-hour requirement, with a further eight meeting the requirement. Additionally, from initial analysis of the questionnaire, teachers stated that the most important reason driving the engagement with CPD was the requirement to do it.

The second reality network is 'organization reality' that, with an outward looking stance, sees CPD as training to meet external requirements. In their study of schools, Leaton Gray and Whitty (2010) found that teachers' CPD had become organized to meet external government requirements. Although their study is schools based, there are some important parallels with, and lessons for, FE. The schools-based CPD requirement was introduced by then education secretary Kenneth Baker in the 1980s. A similar requirement is only now being introduced for FE. That organizations in FE are responding to the new legislative requirements in similar ways to schools is evident in the amount and type of CPD that teachers say organizations provide.

The final reality network is 'teacher/CPD reality'. The teachers in this network identify most closely with their subject and issues of teaching. Teachers were asked to rank in importance the reasons for engaging with CPD activities. The raw data from the questionnaire shows that CPD was carried out by teachers to improve teaching skills (nine respondents), with only one respondent ranking this as least important (see Table 1). When the data is condensed into most or least important, updating subject knowledge (27 respondents) is seen as the most important reason, with improving teaching skills the second most important reason (26 respondents).

In ANT terminology, these are mediators for CPD in that they have power to drive decision-making. This third network is the main focus of much of the remaining discussion but, before turning to this, a little more exploration of how these three identified networks link and interact through boundary objects is required.

These identified networks are not neat boxes or things that spin within their own orbit. A network is a fluid, forever-moving collection of actors that themselves move within their own trajectories, that act with agency (Latour, 2007). If they were not dynamic then, according to ANT theory, these actors and therefore the networks would not be visible. It is action that is observable and without action there is nothing to observe.

By using this ANT perspective of examining observable action, the three networks become apparent as they interact through the object-boundary points and it is these boundary points that make transparent the three networks. As noted earlier, Gholamreza and Wolff (2009) conceptualize boundary objects as entities that act as an interface between different social worlds and cross different community boundaries. An example of a boundary object is the requirement to record CPD activities. This can be classified as a boundary object, not just because it sits between the borders of the different contexts, but because it also 'express[es] a relationship between domains' (Edwards et al., 2009: 492). It is a boundary object because it passes between and through the three networks, exerting different influences on each one. We can identify the effects of the boundary objects by exploring responses to CPD. For example, the Institute for Learning (2011) states that there has been an increase in the amount of CPD activity, while Orr (2009) argues that the new legislative requirements for CPD have had little impact. This contradiction alludes to the way in which boundary objects impact on alternative networks differently and to how the boundary objects work, in that they shape the perception and reality of CPD in each individual network.

The trajectory of the boundary object of recording CPD can be traced through the teacher/CPD network. For many teachers the actual recording of CPD was viewed as a rather onerous task and one to be avoided. They 'played the game' and recorded only enough CPD with the Institute for Learning to fulfil the requirements, as explained by these two teachers (interviewer comments are in italics):

I do record it, but I must admit, I wait until the end of the year and whack it all in in one go. (So it is all recorded.) No, no only enough. (So you record 23 hours.) Yes that's it, no point in putting more on. (applied sciences teacher)

I'd got so many hours I couldn't be bothered adding more, so I put the official course I'd been on ... but I didn't put in any informal stuff. Some years I have but that year I didn't bother because I had enough. (literacy teacher)

Through this, the impact of the boundary object of recording CPD on the organizational network can be identified. Even though it is a part of the legislation, almost a third of teachers report that they did not themselves lodge a record of their CPD with their employing organization. The main reason given as to why CPD was not recorded with the organization was that the organization did not require it. A further reason was that the teachers reported that organizations were only interested in recording 'in-house' CPD, and did not seem to require other CPD activities to be recorded. The counselling teacher said:

They knew we went on it, but there is no formal mechanism. They have a note that I've done it through them but I don't think the college necessarily know what we are doing, they don't ask for it. They don't seem to be that hot on collecting the data.

It seems from these responses that organizations are either not holding records of CPD or are recording it in some way that is independent of the teachers concerned. However, in my earlier work (Broad, 2010) I found organizations reported that they held records of CPD. Similarly, Orr (2009) reported that all but two of the organizations in his study had introduced mechanisms for recording CPD. It seems therefore that organizations are collecting data but using mechanisms other than self-reporting from staff directly involved. This contradiction over whether organizations are recording CPD can be explained in the ways that the two networks perceive and respond to the boundary objects from the policy network. The important factor here for an analysis of barriers to engagement with CPD is that this shows there are different realities in each network and that the different networks of teacher/CPD and organization respond in different ways to the requirements to record CPD.

Funding CPD

As reported above, many teachers found it difficult to engage with CPD although, surprisingly, given the concerns I raise earlier, the structural and funding arrangements in the sector that impact on teachers' working conditions did not present as great a barrier to accessing CPD for all teachers, as one would imagine. The most-often reported reasons were not being able to secure financial support from their organization and workload issues, which meant there was little available time to devote to CPD activities.

Contrasting the findings from the perceived barriers to participation and funding, which was explored separately, a contradiction can be identified. When funding is placed alongside other barriers, it is not seen as particularly problematic. When asked about specifically, funding does emerge as a distinct barrier for many. However, there are many more barriers to CPD indicated and so these were explored further at interview.

Emerging from this, and of particular concern, is that even when CPD was funded by the organization it tended to be influenced by organizational needs rather than self-identified professional need. A business studies teacher commented at interview that it 'seems more to meet management needs'. The concern here is that some teachers have little control over decision-making regarding the CPD activities that are funded by the organization. Funding can therefore be conceptualized as a weak boundary object. According to Star and Griesemer (1989),

weak boundary objects have different meanings in different social worlds. For the institutional network, the meaning of funding does not appear to be to meet the individual development needs of teachers. It may be that its function is only conceptualized as to meet the needs of the policy network requirements.

Elsewhere (Broad, 2011), I identify and explore how the three mediators for CPD – a) the development of subject specialist expertise; b) the development of teaching skills; c) meeting student needs – work to influence the types of activity teachers engage with. Using this concept of the three identified CPD mediators, we can see here how, when these do not map or network to other actors, a barrier is formed. Using this concept, funding can be seen to circulate across and bridge into the teacher/CPD network, but it does not appear to connect to the three identified mediators. It takes on a different form and function as it maps to the actors within the teacher/CPD network. The trajectory is therefore not complete and thus is perceived by teachers as a barrier to meaningful CPD. What emerges as an alternative response from teachers is that the three mediators work within the network to shape creative responses to this barrier. This particular dilemma is captured by the comments given by the hairdressing teacher at interview. This teacher accompanied students to hairdressing competitions and found it beneficial for her own professional development as it provided a mechanism for networking with teachers from other colleges. She explained:

They [college manager] told me I couldn't go [to the hairdressing competition]. I said if I found the money could I go? And they said yes, if you can find the money you can take them. So I found the money, but we [the teachers that accompanied the students] didn't get paid for doing it, we went in our own time and they wouldn't pay us. Normally we would get paid. We didn't get paid, we did it for nothing.

Additionally, trajectories were formed in other ways within the network to secure funding. Teachers reported at interview that they identified sources outside of the organization with manufacturers and professional associations to secure funding for CPD activities.

This analysis suggests that in pursuit of CPD activities, teachers act with agency. Nevertheless, the legislation in force between 2007 and 2012 shifted responsibility for CPD to individual teachers and, within this context, barriers can be conceived as those that inhibit teachers from connecting with the three drivers or mediators for CPD. These barriers may be perceptual, such as how the requirement was conceptualized by teachers. An example of this is from the hairdressing teacher who said, 'I don't like the pressure of panicking because you're not going to get it [the CPD target].' These barriers may also be systemic and emergent from the way in which the sector is organized. This suggests that organizations need to consider how they organize CPD for their staff and adapt it so that teachers have more control over the CPD activities they pursue and engage with.

Impoverished networks as barriers to CPD

Perhaps a more significant barrier to engagement with CPD was for teachers working within impoverished actor networks. One instance of this also linked to barriers of workload and time constraints for a business studies teacher, who commented at interview on the lack of opportunities within the organization to form complex networks:

When I first joined I was quite impressed that there was the opportunity more to do informal type things in the sense of erm, just meeting to share good practice on marking work or whatever. I think it was much better like that, especially for new employees, but I don't see that now.

This supports the argument of Crowley (2002) whose research found that performance measurement approaches, and intensification of teachers' work, have often led to teachers working in isolation. Hillier and Jameson (2004) reported that this is especially a barrier for the large number of teachers who work part-time, which is the case for many teachers in FE.

A further example of the impact of impoverished actor networks was visible for those who worked in subjects where there were no clear subject specialism – a key driver for CPD activities for many teachers. Subject areas that are relatively newly constructed do not have a strong history or tradition on which to draw. They have also not had the time to develop networks, such as the professional associations found aligned to many subjects of longstanding. One such subject in this study was numeracy key skills, which is taught to vocational students alongside their main subject. A numeracy teacher explained at interview that she was employed on an hourly basis within a vocational department. Her function was to teach maths key skills to those following a vocational route. This teacher reported that three things impacted on her ability to access CPD. First, this teacher was not situated with other maths teachers but was employed within the vocational department. This meant that she was isolated from other maths teachers and so had no mechanism for developing subject expertise with other teachers. Second, as a non-vocational specialist situated within a vocational area, she tended to be marginalized within the department. This teacher stated that, 'As a sessional I never get invited to departmental meetings coz they don't want to pay me.'

Third, as a part-time member of staff accessing CPD events proved to be difficult due to these being held outside of paid employment time. She said, 'Some of this training last year in particular they were putting everything at 3.30 when I can't do it because I have a child to pick up from school. That was very frustrating.'

These three barriers to accessing meaningful CPD were further compounded for this numeracy teacher by a lack of any professional association on which she could draw. This meant that the teacher/CPD network in which she operated was extremely limited and so restricted opportunities for engaging in meaningful CPD activities. Using the ANT concept of observing the social as a circulation (Law, 1999), it is this constant circulation and movement that is necessary for meaningful CPD. Without this circulation, there is nothing for an ANT analysis to identify as action. Indeed, we can see this in the experience of this particular teacher as there is little movement, so little of note in terms of meaningful CPD happening for her.

However, this particular teacher had found strategies for developing her own, albeit impoverished, wider actor network. She described at length how she shared resources with the other part-time, more experienced, maths teacher in the vocational department. She described how this other colleague shared resources and schemes of work, and how she had adapted these to suit her own teaching style. They also attempted to meet on a regular basis outside of their teaching commitments to share new ideas and approaches. She explained the mutual benefit of this: 'That was really nice because I gave her new ideas and she gave me some tried and tested ideas.'

This pursuit of two of the mediators for CPD, those of subject specialism, and teaching and learning, shows that even when barriers are particularly evident these mediators are powerful enough to exert influence. Barriers to meaningful CPD identified through ANT can be somewhat lessened by the mediators of subject specialism, and teaching and learning, that frame and determine what is meaningful. It is the pursuit of these actants within the teacher/ CPD network that ensure the activity is perceived to be meaningful. The successful pursuit of these is largely determined by the strength of network connections and the breadth of the web of these connections. Teachers who find it the most difficult to pursue meaningful CPD activities are situated within impoverished actor networks.

Conclusion

This study sheds light on, and thus makes visible, the 'so many worlds' alluded to in the title of this paper. In doing this, it begins to explain the tensions and barriers that FE teachers face when attempting to access CPD opportunities. It demonstrates that even though political will, manifested through legislative requirements, may sometimes be there to improve teaching and learning in the sector through teacher professional development, teachers in their pursuit of CPD activities are often stymied by how the sector is structured, organized, and funded. The recent legislative requirements shifted responsibility for professional development from government (central and local) and organizations onto teachers. Changes to the sector following incorporation, introduced in 1993, have impacted on teachers' ability to meet this obligation in two ways. First, it saw a demise in the amount of CPD provided for teachers and a reduction in provision that they could tap into for CPD purposes. Second, the efficiency gains resulted in diminished working conditions that have intensified teachers' work and casualized their contractual arrangements. However, even though these changes have impacted negatively on teachers' ability to engage with CPD, over half of the respondents could access the CPD they wanted, although workload was a barrier for a quarter of the respondents. Perhaps a greater barrier, and of no surprise following the 'credit crunch', was accessing funding. When funding was available, this tended to be used to meet organizational rather than teacher needs, and caused frustration. However, teachers are creative in pursuing CPD that is meaningful to them. Alternate mechanisms for funding CPD were identified: self-funding; finding other external sources of funding; or identifying activities that were free. Nevertheless, this is deeply problematic when teachers are required by legislation to carry out CPD. What they require are the mechanisms through devolved and direct funding, and the professional autonomy to enable them to meet the requirement.

There are important lessons for any future policy focus on CPD as this study has shed light on a more significant barrier than the lack of access to appropriate funding – that of teachers working within impoverished networks. For some teachers, this is also linked to workload and time constraints and it is these that inhibit teachers from developing effective CPD networks. Evidence that the structural organization of teachers' work can be the instigator of impoverished networks is of even greater concern. The example given in this paper is of the key skills maths teacher working largely in isolation within a vocational area. It is not that these other teachers do not welcome her, it is that this structural arrangement does not allow her to link with the most powerful mediator for CPD, that of developing subject specific expertise.

Note

 The 'Silver Book' detailed the national conditions of service and contractual arrangements for all FE teachers. It included national pay scales, limits on the amount of teaching per week, and number of teaching weeks per year that teachers could be required to undertake.

Notes on the contributor

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