The Nature and Outcomes of PGCE Plus as a Model for Teacher Professional

Development

Hartas*, D., Lindsay**, G., Arweck**, E., Cullen**, S.



*Institute of Education, University of Warwick

** Centre for Educational Development, Appraisal and Research (CEDAR), University

of Warwick.

28/03/08

Address for correspondence:

Dr Dimitra Hartas

Associate Professor

Institute of Education

University of Warwick

Coventry, CV4 7AL

England

The Nature and Outcomes of PGCE Plus as a Model for Teacher Professional

Development

Abstract

The present study examines an innovative attempt to address national priorities with regard to subject (Mathematics and Science) and the needs of gifted and talented pupils. The initiative, PGCE Plus, was at the transition from initial qualifications and the domain of CPD, occurring in the summer immediately following qualification as a teacher and during the first two years of practice. The paper explores the evidence for the success of PGCE Plus pedagogically, and as a model addressed to both participants' needs and national priorities in a context of educational change.

The Nature and Outcomes of PGCE Plus as a Model for Teacher Professional

Development

*Introduction*

Recently in the UK, the nature, structure, processes and effectiveness of Continuing

Professional Development (CPD) have attracted a substantial amount of research and

analysis, as well as on-going debates with regard to its nature and impact on pedagogic

practices (e.g., Bolam, 2000; Edwards and Nicoll, 2006). Much of the current debate

regarding CPD has been concerned with 'who and what is being developed, by whom

and, most importantly, in whose interests' (Noffke, 1997, p. 334).

Bolam (2000) approached professional development as the process by which teachers

learn, enhance and use appropriate skills and knowledge, arguing that the essence of such

development should be the 'learning of an independent, evidence informed and

constructively critical approach to practise within a public framework of professional

values and accountability, which are also open to critical scrutiny' (p. 272). Teachers'

professional development is not in a fixed state, but is constantly re-positioned to map

onto re-conceptualisations of teaching and learning, including personalised learning, life-

long learning and widening participation. Within these pedagogical shifts, the nature and

outcomes of professional development require re-thinking to support professionals to

adapt to these changes. For example, teachers' thinking and attitudes should be

considered in the context of a policy of widening participation, and the changing nature

of teaching within globalising practices that require them to translate educational

discourses and governmental initiatives into practice (Edwards and Nicoll, 2006).

Current debates about the nature of professionalism and professional development have focused on three notions of professional practice, namely the technical expert, the competent practitioner and the reflective practitioner (Edwards and Nicoll, 2006). Increasingly, educators are positioned as being competent and reflexive in locating and translating educational initiatives into classroom practice. The technical expert, on the other hand, operates within a technical rationality that assumes that knowledge consists of discrete skills that can be generalised and delivered across classrooms. Hargreaves (1998) advocated the 'knowledge-creating school' which questions this technical rationality and the efficacy of knowledge-delivery models. To support schools in creating knowledge, the nature and role of CPD require re-thinking, enabling teachers to remove the boundaries between educational theory and practice, with CPD being a collective resource rather than another activity forced on teachers by a central government.

Examining the effectiveness of CPD programmes requires consideration of the role of central/local government initiatives, the meaning of 'good practice', and of the appropriate balance between school needs and individual needs (Burchell, Dyson and Rees, 2002; Hustler, McNamara, Jarvis, Londra, & Campbell, 2003; Fielding, Bragg, Craig, Cunningham, Eraut, Gillinson, et al., 2005; Leaton Gray, 2006). There has been a substantial thrust from the government in England to develop CPD for teachers as a means of improving standards in schools (Department for Education and Employment – DfEE-, 2001), supported by research that indicates the implications of professional development as one of the essential components to generate and sustain school-level

change (Day, 1999; Hargreaves, 1994). The CPD strategy promoted by the DfEE went beyond the traditional focus of INSET, offering a variety of opportunities for professional learning that is collaborative as well as founded and relevant. Collaboration can also be construed as comprising processes that address both individual and school needs to bring mutual benefits through professional development. This may be contrasted with CPD that is shaped primarily by organisational objectives and priorities, which can be instrumental and thus depersonalized.

In the past, certain governmental programmes have been overshadowed by centralised training initiatives, aimed at whole school improvement (Leaton Gray, 2006). One such was an award-creating INSET scheme provided by the Department for Education and Skills, which offered teachers the opportunity to carry out research into specific subject areas. Personal and professional needs may be seen not as competing but as complementary if CPD activities are organised strategically and balance individual teacher and institutional needs with governmental priorities. The UK Government's consultation document on professional development stressed the need for CPD activities to consider both school priorities and teachers' needs and developmental trajectories (DfEE, 2001). Welsh (2002) argued for a collaborative professional development that, through partnerships, will bring together both individual professional and school development goals to enable teachers to initiate and sustain change by becoming active change agents rather than objects or targets of change. Increasingly, research shows that ownership and relevance to practice, achieved through peer observation and professional conversations, characterise successful CPD practices in that their focus is both personal

and professional, approaching CPD as 'an exercise in its own right' (Rose and Reynolds, 2008; p. 14).

*What Makes CPD Work*

Over the recent years, studies have sought to provide an empirical basis regarding teachers' perceptions of the effectiveness of CPD, particularly with respect to changing educational practice (eg, Cordingley, Bell, Rundell, Evans, 2003; Ofsted, 2006). These studies differentiate between effectiveness of the methods for delivering CPD and effectiveness in terms of the impact of CPD on teacher practice. Methods for the evaluation of CPD in these studies have typically taken the form of measuring participant satisfaction. However, evidence of multi-level evaluation, encompassing participant learning and value for money has also been reported (Muijs and Lindsay, in press).

Goodall et al (2005) reported that teachers considered the most effective CPD with regard to enhancing classroom practice to be informal networking, followed by a series of workshops, secondments and sabbaticals. With reference to methods of delivering CPD, these teachers rated INSET days followed by mentoring and critical friendships, as well as observations and professional discussions to be the most effective. Professional dialogue and feedback, peer support, scope for practitioners to identify their own CPD needs that are balanced with national priorities, opportunities for individual reflection and group inquiry and practice, acquisition of relevant professional knowledge and skills, and an organizational culture that can sustain CPD over time have all been identified as factors which underpin effective CPD (Cordingley et al, 2003; Fielding et al, 2005). These elements help to develop professional actions that are informed by relevant

knowledge and skills which, in turn, are subjected to self-criticism in order to avoid professional complacency and ineffectiveness (Kirk, 2004).

Ofsted (2006), in their visits to 29 schools in 19 local authorities where good practice in managing and using CPD was identified, argued for the importance of subject-specific training, partly as a means of meeting individual and school needs. Support for this priority was provided by a study of citizenship-based CPD which offered subject-specific support to Citizenship coordinators, who were developing a specialism in the subject, as well as to all teachers who might incorporate Citizenship-related issues and topics into their own subject area work (Warwick et al, 2004).

In a large number of studies reviewed by Hustler et al (2003), Fielding et al, 2005 and Cordingley et al (2003), effective CPD outcomes were associated with a reasonably clear sense of career progression possibilities by giving teachers the opportunity to operate as professionals capable of exercising control and self-regulation in their professional contexts. Moreover, a considerable value was placed on CPD as a joint practice development that is shaped by factors such as relationships, institutional and teacher identity and learner engagement (Fielding et al, 2005). Interacting and building relationships with other professionals, either within their own schools or other institutions, support teachers to achieve a balance between national initiatives and professional development and self-regulation (Harland and Kinder, 1997). The review by Cordingley et al (2003) offers detailed evidence that sustained and collaborative CPD was linked with 'a positive impact upon teachers' repertoire of teaching and learning

strategies, their ability to match these to their students' needs, their self-esteem, confidence and their commitment to continuing learning and development' (p. 14). Most crucially, these studies show that such CPD practices had a positive impact on student learning processes, motivation and academic outcomes.

The Context of this Study

In 2004 and 2005, two two-week PGCE Plus courses, in mathematics and science respectively, were offered by the National Academy for Gifted and Talented Youth (NAGTY) at two universities, Warwick and Christ Church Canterbury, for which participants were recruited nationally. The PGCE Plus courses ran in conjunction with NAGTY's Summer Schools for students aged 11-16 year at both locations. The PGCE Plus concept was innovative in that it extended the postgraduate initial teacher training course, the Postgraduate Certificate of Education (PGCE), in subjects that experience teacher shortages (i.e., mathematics, science). It was subject specific and focused on the needs of gifted and talented (G&T) youth, and also included a further two years of support for these newly qualified teachers' professional development.

The main structural components included the design and running of a 2-week course in the summer following the PGCE, the provision of a Master-level accreditation, termly meetings once the newly qualified teachers (NQTs) were in post, and the establishment of an on-line community. Its functional components covered theory, policy and practice regarding G&T pedagogy, remedial support to ameliorate gaps in PGCE training and capacity building towards responsive teaching for all children. The PGCE Plus course

comprised pre-course reading, a combination of course elements (ie, self-study, teaching

episodes / peer teaching, taught sessions), observations of NAGTY students and a master

class (open to all Summer School students). The course provided the theoretical and

policy background regarding G&T provision in the first week and focused specifically on

mathematics / science in the second week.

An evaluation was conducted to investigate the effectiveness of PGCE Plus regarding

NQTs' professional development (Arweck, Cullen, Cullen and Lindsay, 2005; Arweck,

Cullen, Hartas and Lindsay, 2006). This paper, based on that evaluation, seeks to

understand the nature and pedagogic purpose of the PGCE Plus, its outcomes at an

individual teacher level and its capacity to open possibilities for sustained change in

classrooms.

## Research Design

*Participants*

Students currently completing a secondary PGCE course in mathematics or science were

invited to apply online. Selection was guided mainly by NAGTY's formal set of criteria

intended to identify applicants who had the potential to be able students or highly skilled

teachers, and to make an important contribution within the programme. The total number

of participants was 52 (22 in 2004 and 30 in 2005). The PGCE Plus course was

advertised in key mathematics and science publications and the Times Educational

Supplement (TES First Appointments Magazine). Applications were assessed on the

basis of details provided by applicants in their personal statements, academic background

and tutors' references but applicants were not interviewed. The majority of the applicants

had prior experience working with G&T pupils.

*Interviews*

During 2005, two sets of semi-structured interviews were carried out. The 13 participants of the 2004 PGCE Plus course in mathematics (6 at Warwick, 7 at Canterbury) were interviewed face to face during the course in Summer 2004. Eleven of this sample (5 from Warwick, 6 from Canterbury) were re-interviewed by telephone in Spring 2005. In 2005, science as well as mathematics PGCE Plus courses were ran. This second set of interviews therefore comprised participants of both mathematics and science courses, and tutors at each university. To match the 2004 sample, 6 PGCE Plus participants were chosen at each site. All seven tutors present at the time of the field visits were interviewed, as were the two respective subject co-ordinators of the Summer School strands. Many of the PGCE Plus course tutors had been involved in the 2004 course.  In order to capture the perspective of NAGTY staff with regard to the ongoing development of the PGCE Plus programme, interviews with 3 key NAGTY representatives took place in the Summer and Autumn terms 2005. These were complemented by informal meetings with NAGTY staff throughout 2005. The total number of interviews conducted in 2005 was 35.

*A Framework for Analysis*

A qualitative analysis software, NVIVO7, was employed to facilitate the organisation and cross-examination of the emerging themes. These themes involved teachers' engagement with new ideas and teaching practices; use of new materials and resources; reflection on the revision of professional practices in the light of new knowledge; professional

dialogue with their colleagues within a community of practice; and critical reflexivity. The PGCE plus teachers' personal and professional development was analyzed and discussed by adapting Harland and Kinder's typology (1997). Within this framework, the participants' views were explored about material / resources and provisionary outcomes; professional knowledge and skills; new awareness, social / affective outcomes; and critical reflexivity.

The capability approach (Sen, 2006) was taken to examine PGCE Plus users' perceptions of the capacity of the programme to support them convert resources, knowledge and professional skills into changed practices in schools. As Sen observes, factors such as the interaction between individual teachers and the social/ ideological/ political milieu of the schools can influence the translation of knowledge and skills into valued functionings. This paper examines participants' views about their capacity building and potential for agency at the end of the PGCE Plus course; whether, changes in classroom practice did occur as a result of this programme is beyond the scope of this study.

It is important to stress that a perceived capacity to change classroom practice is distinct from an actual capacity to become an agent of change at a classroom level. However, mapping and enhancing students' learning experiences should start from understanding teachers' professional development and the consequences for those who participate in this development, as well as the form it takes in terms of increasing professional knowledge and skills, possibilities for actions and adaptation to change. CPD activities have been found to transfer more easily into changed behaviours and teaching practices at

a classroom level if there is a good fit with individuals' professional and personal values and if the organization has already espoused a culture of professional development (Knight, 2002).

<h3 style="text-align:center">The Nature and Pedagogic Purpose of PGCE Plus</h3>

*The Nature of PGCE Plus*

The development and implementation of the PGCE Plus programme emerged from the need to develop knowledge and expertise to meet effectively the needs of early career teachers, and national requirements with regard to G&T provision. Started in 2004, PGCE Plus was initially perceived as being experimental, shaped by reactive changes. There was a consensus that the PGCE Plus concept was, as the majority of participants described it, 'great, covering new ground', recommending that 'it should expand to other subjects and [that] all students should do it'.

From the start, PGCE Plus was conceived as a programme whose function was to extend initial teacher training by focusing on G&T education and create a supportive structure for NQTs to engage in professional learning. In an interview with a NAGTY representative, it was stressed that:

> '… one of the key aims and aspirations of PGCE Plus is to develop the understanding of initial teacher training and early teacher support and training. What we are looking at in developing effective support structures for early career teachers and serving the needs of gifted and talented learners is […] a cross-academy project.'

In terms of its function, PGCE Plus can be described as a hybrid, an eclectic mix of teacher professional development programmes, including an extended initial teacher training, a remedial programme, early career teacher support targeting NQTs, and a programme with a focus on special pedagogies for gifted and talented pupils. The PGCE Plus occupied a unique territory, in that it resembled initial teacher training without the 'real' teaching dimension, and an INSET model without the mentoring component. The main criticism of PGCE Plus was that it lacked important functional components, namely 'real' teaching, effective teacher needs identification and, most importantly, mentoring. The introduction of peer teaching as a substitute to 'real' teaching was criticized by the NQTs who claimed they would have benefited more from teaching NAGTY Summer School students 'to transfer what we learn here in a real life situation'. Also, participants' proactive identification of needs was limited because the tutors received no background information prior to the course, reflecting three neglected areas in CPD in terms of the identification of the teachers' individual learning needs, the prioritisation of those needs and the process of drawing links between these needs and practices of learning. This is in contrast with the results from an EPPI review, stating that the majority of the CPD studies examined took into account individual learning points, through some type of diagnostic assessment (Cordingley et al, 2003).

The need for further learning, beyond a CPD event, in the form of on-going support, mentoring, coaching in teachers' classrooms, and interactions with colleagues was also stressed by the teachers. In the case of PGCE Plus, individual mentoring of participants

once in post in schools was originally planned but was abandoned due to a belief by

NAGTY staff that there was an insufficient skills base from which to draw. Mentoring

was replaced by visits to participants' schools and the introduction of termly meetings.


*PGCE Plus as a Remedial Programme*


Extending initial teacher training also involved a remedial element, reflecting the

diversity of current PGCE training. All student interviewees agreed that the PGCE Plus

course offered them support and expertise beyond what had been offered during their

PGCE courses, particularly provision for gifted and talented children, differentiation and

classroom practices.

> '… my PGCE course dealt with a lot of theory work which was largely irrelevant
>
> to what you do in the classroom. And half of that I found a waste of time, frankly.
>
> … [The PGCE Plus …] dealt a lot more with issues of actually 'How would you
>
> teach a gifted and talented pupil?'

Furthermore, the PGCE Plus course formalised insights and strategies with regard to

identifying and supporting gifted and talented and differentiation of pupils. Typical of the

mathematics participants was the comment:

> '...at the end of the PGCE I was left with gaps and I think that the PGCE Plus
>
> course has filled those gaps nicely, although still this remains to be seen in
>
> action… I feel that I am in a better position to apply differentiation strategies
>
> now, and teach pupils across levels of ability.'

The tutors also identified significant gaps in some participants' subject knowledge and

teaching competency, expressing 'surprise by the lack of mathematical knowledge in some students as well as [their ability in] planning and delivering a lesson'. Tutors also raised concerns about the adequacy of the PGCE training in terms of developing subject-specific knowledge and effective mathematics teaching practices. One tutor in particular said that 'many students did not have the opportunity during their PGCE training to receive feedback on teaching activities, which is so crucial in terms of helping them to evaluate their practice and develop as reflective practitioners'. However, although tutors and participants agreed that there was a remedial component in the PGCE Plus, mainly due to its G&T focus and specialist training, both groups stressed that the course should be important in its own right and not as a remedial course for NQTs who had not received adequate PGCE training.

*Communities of learning and practice*

An interesting feature of the PGCE Plus was that it facilitated the development of a community of learning and practice through informal learning opportunities which arise out of the interplay of NQTs with their peers and tutors. A community of practice refers to a 'participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities' (Lave and Wegner, 1991, p. 115). Within communities of practice, learning is relational, and does not occur through formal instruction alone, but also through engagement with practice that allows members to become immersed in the structures, discourses and processes of a community (for example, the ways in which members talk, act, and model certain behaviour or patterns of collaboration).

In this study, a community of learning was created through the sharing of the NQTs'

professional histories and biographies, and their reflections on how these influenced their

journeys as teachers. Sharing biographies encouraged them to interact with each other

and learn about each other's personal and professional background. Through their

mathematical histories, participants had the opportunity to talk about their personal and

professional journeys, which they felt 'brought them together as a group'. This set the

platform for 'evolving forms of mutual engagement' (Wenger, 1998; p. 95) between

teachers that were likely to continue during their online interactions.


The participants valued opportunities to discuss topics and teaching strategies as well as

compare notes with one another in a professional capacity; exchange ideas and reflections

during the course; experience team work; and engage in peer teaching and develop

networking with colleagues and tutors:

'… this networking, sharing ideas, I am looking forward to that, beyond this [course] …,

because we're all going to try out different techniques and ideas within our classrooms

…, but then we can feed that back to each other as well, be it through the on-line

community … or just over the phone'

These opportunities continued once the participants were teaching: Collaborative inquiry

was achieved through interactions with peers in the form of observations, meetings or,

informally, during social events. As one teacher commented

> 'I've got a lot of support … from the [… tutors] and from the other people on the
>
> course. We're all kind of chatting about ways we could improve … gifted and
>
> talented [pupils] within our classrooms and … we've been kind of actively

encouraged to chat and support each other, which has been nice… there's a lot of

team work you do as well… it's been a really good way to meet everyone'.

Although participants would have preferred to teach NAGTY Summer School students,

they agreed that peer teaching 'set the stage for collaborative learning' by giving them the

opportunity to exchange ideas with their peers, cross–examine their teaching practices

and experience what it means to be a learner 'by viewing things from the learners'

perspective'.


A community of practice was formed through inter-professional collaboration between

tutors, and an exposure of NQTs to their tutors' professionalism. As one tutor observed,

participants were exposed to 'what it means to be professional in the classroom,

demonstrating ways of engaging students as opposed to presenting solutions to them'.

Another tutor stressed the importance of 'exposing NQTs to … [the way] professionals

work together to construct something, we do not have ready things to give to them and

then go away'.

The tutors offered coaching, modelled new practices and provided a focus for debate,

professional dialogue and reflection. Their involvement was characterised by passion,

enthusiasm, a strong subject knowledge base, inter-professional collaboration and

commitment. Participants' views about their course tutors were uniformly and entirely

positive, using terms like 'very experienced', 'highly skilled' and 'really friendly', 'really

approachable'. These views are reflected in statements such as the following:

'I get the impression [that] all three … [tutors] *want* to be there… They are

incredibly knowledgeable, [have] very deep understanding of their subject, [are]

passionate about their subject… there is often three of them present, which is

quite unusual and very beneficial, considering there's only 12 of us.'

NQTs were described by their tutors as being of high caliber, quick to grasp new ideas,

challenging and assured. The participants had come with what they called a 'high

baseline' in that most of them were aware of the general state of science and maths

education, and open to new ideas regarding G&T provision. As one tutor said:

'…given that openness which most of them came armed with, … [we've offered]

them an opportunity to reflect on the specifics of how that relates to the needs of

gifted and talented [pupils] in science.'

Contributing to the building of trust relationships was its implementation at a university

rather than a school setting, where 90% of CPD activities have been found to occur

(TTA, 1995). Being a residential course ensured that the participants were less likely to

be 'distracted' by job-related pressures and aided the formation of a cohesive community.

The formation of such communities was also evident in studies that evaluated the

effectiveness of CPD programmes (eg, Cordingley et al, 2003).

During the PGCE Plus course, there were signs of NQTs beginning to acquire a shared

language in terms of describing their professional development as a journey, and the

process of acquiring professional skills as being relational. However, there was less in the

way of evidence of a shared purpose between teachers and their tutors, perhaps because

this is more likely to emerge from within their own professional contexts once they are in schools. The desire shown by a significant proportion of this cohort to continue to meet as a group, during the termly meetings, however, points to the importance of actual, in addition to virtual meetings for such a community to continue to flourish. An issue worthy of consideration here is the extent to which the NQTs have been able to interact and communicate as members of a real or virtual community since the course completion, especially in the absence of mentoring and classroom coaching.

Despite the lack of a shared purpose and the possibility that this community may be short lived, participants were exposed to examples of inclusive pedagogy in terms of the tutors being flexible and responsive to their needs, demonstrating that "developing effective teaching in the area of G & T education can benefit all children in an inclusive setting". They also felt secure to identify and acknowledge gaps in their subject-specific knowledge, and engage with the dilemma of 'what to learn' and 'where to learn' with regard to G&T pedagogies and pedagogies for all. Finally, the creation of communities of learning and practice led to important outcomes for individual teachers.

PGCE Plus Teacher Outcomes

The majority of participants and tutors acknowledged that the PGCE plus course had been a valuable and rewarding experience. They commented on the value of the course in relation to differentiation, training and awareness regarding G&T education, new awareness about their developmental trajectories, capability for reflexivity and development of their professional skills and knowledge. The participants' accounts highlight outcomes with respect to material / resources, professional knowledge and

skills, new awareness, social / affective outcomes, and critical reflexivity.


*Materials and Resources*

Harland and Kinder (1997) differentiate between material, informational and knowledge outcomes, creating a hierarchy based on the depth and critical engagement with regard to understanding pedagogical issues and creating knowledge. Informational outcomes rely on gathering background facts and news about the national curriculum, developments in G&T education, governmental initiatives and their implications for practice. Although research suggests that informational outcomes are likely to have a minimal impact on classroom practice (Hustler et al, 2003), these new teachers thought of them as being valuable and easily transferable and applicable in the classroom. Generally, participants valued physical resources, including worksheets, equipment, handbooks and pointers for further reading and resources, as relevant and applicable to their classroom practice across ability groups.

*Professional Knowledge and Skills*

Participants' views regarding the development of their professional knowledge and skills were obtained by discussing the ways the course contributed in knowing what to do (subject-specific knowledge), and adapting the knowledge to stimulate changes in classroom practice (dynamic knowledge).

  *Subject-specific knowledge.*

The participants agreed that the course had given them an in-depth understanding about gifted and talented students' learning and social and their emotional needs, and raised their understanding of the legislative framework that underlies gifted and talented

education in the UK.

> 'I think it's broadened my theoretical side about what I could expect from my
> students, and what I could get them to do, it … made me realise that I can do
> work outside the National Curriculum and not be scared about it. It's … given me
> … breadth and … depth…'

Another gain in participants' cognitive knowledge was the capacity for providing
professional justification for teaching and applying strategies that benefit all children:

> 'I have things that I can actually use in the class, but more importantly, I've just
> got justification for using those. I can explain the thinking behind them, I can
> actually justify it. I now know how to question more effectively, to draw out
> information from a gifted and talented [… pupil] which will be of benefit to the
> rest of the class.'

Although there was evidence that the knowledge acquired was applied in some
classrooms, it is difficult to map the extent to which teachers' knowledge and skills
translate into classroom practice.

   *Dynamic knowledge.*

Knowledge and professional skills contribute to changing classroom practice by
transforming abstract knowledge to classroom-based expertise, or experiential
knowledge, that is relational and based on experience derived from particular contexts
(Humes, 2001).  To achieve this transformation, there is a need for synergy between
individual teachers' knowledge and skills, the organisation and ethos of the schools and
the wider national priorities (Goodall et al, 2005). When asked about participants'
knowledge and capacity for change, a tutor identified four tiers on which teachers had

made progress in their professional development, during the initial course namely classroom practice, building a network of exchange and support, critical reflection, and increased aspirations.

> 'On the very basic level … they'll go away … with a slightly different view of how to teach science, with some practical factors that they can put into a classroom. … At the second level, they'll have built a network of people that they know they can contact … which I think is a very good social support mechanism … Thirdly, … they will have developed a way of thinking, … and … it will affect the philosophy with which they go into a classroom. Fourthly, … it will also have elevated their aspirations'

Further, tutors commented that dynamic knowledge capable of triggering changes in classroom practices is acquired by 'exposing [participants] to different ways of teaching and this experience will help them not to become self-complacent'. This is important in that, as Hustler et al (2003) argue, teachers have been socialised over the last ten years into a professional orientation as delivery agents, resulting in a culture of performance outcomes, a transmission culture where knowledge is delivered and not constructed. Becoming an agent of change is a long-term prospect; as tutors observed 'this course is not the end, but the beginning of their training and professional development'.

*New Awareness*

CPD may initiate new awareness which involves a cognitive shift from previous assumptions about the curriculum, although a shift in awareness does not necessarily lead to a changed classroom practice (Hartland and Kinder 1997). Some participants talked

about their heightened awareness in response to the challenges they encountered in the course. They realised that they were at the beginning of their professional journeys and 'need to learn and widen their teaching', being 'left hungry for more' at the end of the course. One stated that 'I realised how much I do not know and also the work that I need to put in to expand my understanding of gifted and talented issues'.

   *Shifts in understandings of gifted and talented.*

All participants came to the PGCE Plus course with some ideas of what 'gifted' and 'talented' meant. Initially, their understandings revolved around notions of 'potential' or 'implicit giftedness', differences between gift and talent, and the link between gifted/ talented, behaviour and academic achievement. They agreed that 'gifted' related to academic abilities, whereas 'talented' related to creative subjects or the arts, without the two being mutually exclusive. They also recognised that being gifted and academic achievement 'are not necessarily correlated, as high achievers may not be gifted, while low achievers may be'. This was explained by stating that lack of stimulation and encouragement may engender boredom and under-achievement in pupils.

By the end of the 2-week course, an awareness shift had occurred as indicated by almost all participants agreeing or strongly agreeing that their views of gifted and talented young people had developed further as a result of attending the PGCE Plus course. Understandings of 'gifted and talented' were developed in three ways, namely confirming /retaining, broadening and revising their concept of 'gifted and talented'. Participants who found their previous views about giftedness confirmed were in the minority, although by the end of the course their understanding of gifted and talented had been

extended. Others retained the definitions encountered during the PGCE Plus course, and became aware of the lack of consensus on definitions of gifted and talented. As one teacher noted:

> 'I've found that everyone has got … different views, so I've kind of stuck to mine. But I have to say that over the summer, I found that the few different speakers gave different views on gifted and talented, which was confusing really, so … [my view] has not really evolved at all'.

Another student was also aware of various definitions for 'gifted' and 'talented', but did not feel the need for settling for any one of them, at any point during the course. He was curious as to what kind of 'gifted' and 'talented' students he would encounter and kept an open mind:

> 'I was well aware that there are many definitions of G & T—top 5% and the 10%, some a bit more higher-achieving schools, so 25% of their pupils are G & T. … I did not feel the need to form my own opinion. I found it interesting to see how schools have done it'.

Moreover, prior to the course, some participants talked about the differences between gifted and talented in crude terms, whereas after the course they were more analytical about giftedness and its link to achievement. One student pointed out that the interview with a Summer School student made him realise that being gifted or talented could relate to a particular subject area (e.g. nuclear physics) rather than the whole subject (science) and that this would have implications for his teaching:

> '… it made me aware that there might be just a fraction of the curriculum that someone's very able at … Yes [G & T could be in a particular area], as opposed

to a whole subject.'

Others revised their notion of 'gifted and talented', moving away from 'textbook'
descriptions to 'real' people:

'… before I started, … the way […gifted and talented] was … phrased to me in
the schools was 'students who do their work well and [have] excellent behaviour'
… And now, [I think] gifted and talented students are more [like] kids … they
[…do] not [have] impeccable behaviour … they are normal kids who are creative,
who want to do well for themselves and not necessarily to show off to anyone
else.'

At the end of the PGCE Plus course, some participants realised the lack of clarity and
consensus on identifying gifted and talented pupils:

'One of the most difficult things I find is the identification of gifted and talented
pupils. And I think the problem is that everybody you speak to has got some
different method for it and that's half the problem. … it depends what your
criteria are, and even with the same criteria, and you might both see different
things in the classroom. … I look at NAGTY's official line … the top 5%, the top
2%…Well, the top 5% of what ?. … of the whole nation or just of that school'.

Others observed that there are geographies of gift and talent, after becoming aware of the
extent to which definitions of gift and talent vary from one school to another.

*Affective and Social Outcomes*

Affective outcomes such as teachers' attitudes, motivation and self-confidence are
important for changing classroom practice, and can be supported through the creation of a
social space and a community of learning and practice. In this study, the creation of a

social space was facilitated by the social relatedness in the group that was said to be uniformly positive and appreciative, although there was a mix of personalities and temperaments: 'we're all quite different people, there's a nice balance of people'. Many participants were of similar age which fostered the development of a good group spirit between them: 'we gelled'. Participants referred to a developing sense of colleagueship and sharing of understanding without feeling threatened. Another PGCE Plus teacher talked about her heightened empathy regarding the needs of gifted and talented pupils, acquired through the PGCE Plus course.

> 'I realise that a lot is to do with pupils' confidence. Having looked at the
> theoretical side of gifted and talented, just really helped me think about how they
> probably felt going through school and how they wanted to be treated'.

*Critical Reflexivity*

Eraut (1994) comments that in a knowledge-based society, where managing and pursuing learning is an inherent component of life, people need to become 'professional learners' in order to become 'learning professionals' (p. 14). Critical reflection is an important component of teacher professional development, and requires a space for debating ideas about teaching to engage in critical scrutiny and develop a sense of ownership, professional control and self-regulation.

Within a critical / professional space, a 'critical colleagueship' that sets the stage for professional dialogue and on-going critique can be achieved (Lord, 1994), likely to move teachers from prescriptive models of professional development to collective inquiry. The notion of PGCE Plus as capable of creating a critical space, a community of learning and

practice, was reflected in tutors' accounts about the participants. The majority agreed that 'having the experience of a community for a week gives them a sense of what good teaching is and what they need to learn to become good practitioners'.

Critical reflexivity opens possibilities for moving teachers from informational outcomes and knowledge application to changed pedagogic practices. The findings from this study indicate that some participants engaged in reflexivity in that, by the end of the course, they appreciated how much more there is to be learned, assuming responsibility for their own learning. Critical reflexivity was also evident in their debates on giftedness, during which various interpretations of giftedness were constructed and contested.

Pedagogic practices rely on the development of critical and reflective thinking and teachers' capability to apply professional skills and knowledge in their classrooms but reflexivity is also related in turn to pedagogic practice. Initial positive feelings, capacity for reflection and professional knowledge acquired through the PGCE Plus course, however, may be short lived if they are not sustained through a culture of learning how to learn throughout teachers' professional lives.

A Model for Teacher Professional Development

PGCE Plus had multiple aims in terms of supporting NQTs acquire new knowledge with regard to G&T provision, raising their awareness about the wider community in Science and Maths and the nature of the term 'gifted and talented', and exposing them to models of good professional practice. By fostering a community of learning and practice during its course, it mediated cultures of learning for the NQTs, hopefully, to enable them to

sustain motivation and participation once they are in their own professional contexts.

PGCE Plus occupied a unique territory and extended out from familiar boundaries of continuing professional development into relatively unknown spaces that combined G&T pedagogy and pedagogies for all, emphasised learning how to learn and fostered communities of practice. In such a community, learning for NQTs became a process of 'legitimate peripheral participation' (Lave and Wegner, 1991), with the participants being introduced to commitments and responsibility gradually, allowing the newcomers time to adjust and learn from each other. PGCE Plus created a social and professional /critical space for teachers to collaborate, reflect and engage in collective inquiry, with the potential to transfer theory into professional practice.

As is typically found in the CPD literature (eg., Cordingley et al, 2003; Fielding et al, 2005, Hustler et al, 2003), many participants clearly associated the worth of PGCE Plus with 'doing something new', that can be transferred and applied in the classroom. The majority of participants perceived the benefits of PGCE Plus in terms of acquiring and applying new teaching techniques, such as differentiation, curriculum content and resources / materials with regard to G&T provision. Moreover, a smaller number of NQTs perceived the wider benefits of the PGCE Plus in terms of being exposed to models of professional dialogue, and active involvement in developing, refining and reviewing their teaching practices, as well as formulating an identity as learners. This is an interesting finding in the light of an ever increasing emphasis on life-long learning, developing learning communities, and engaging in reflective classroom practice.

Teachers articulating patterns of professional learning and changes at a personal and professional level, is an important indicator of impact and the first step towards delineating learners' experiences (Burchell, Dyson and Rees, 2002). In this study, the shifts in teachers' awareness of G&T, refinement of professional skills and knowledge and critical reflexivity suggest that their learning and professional development have been internalised (Kirkwood and Christie, 2006) and, thus, they are likely to model critical thinking in the classroom through questioning and reflection of their own practices.  In this regard, PGCE Plus was a successful programme in encouraging teachers to develop as professional learners and learning professionals, with the potential for action at a classroom level.

A major criticism of the PGCE Plus was that mentoring and teacher needs identification were not developed thoroughly. Mentoring is particularly important for sustaining a sense of community of learning professionals. Moreover, although PGCE Plus did not approach teacher professional development in an outcome-driven way, striking a balance between teachers' personal and professional development needs and national priorities was not easy. PGCE plus was an experimental programme developed, mainly, as a response to national agendas with regard to G&T provision, especially in 'dying' subjects such as Maths and Science.

A question which can be posed is whether the contrasting features of PGCE Plus, including lack of real teaching during the initial course, and of mentoring during the school-based element but the formation of a community of practice and the balancing (or

not) of individual with national priorities can co-exist without compromising its quality.

The evidence from this study indicates that NQTs valued the opportunity to engage with

theory and policy on G&T, refine their subject knowledge in Maths and Science and be

exposed to professional dialogue and inter-collaboration. They also valued the

opportunity to engage in experiential learning by participating in a community of

practice, however short- lived it might be.

It would appear that NQTs' desire to continue interacting with each other suggests that

informal learning opportunities are crucial for them to interrogate their practice within

their own professional settings. Regardless of its success, the PGCE Plus opened up the

practice of teaching as a public performance which can be shared, discussed and

scrutinised by peers (Kirkwood and Christie, 2006). However, it is worth asking whether

the exposure of teaching to public appraisal will continue at their schools and the extent

to which it will benefit them and their immediate colleagues. These questions raise the

need for research into sustaining informal networks for NQTs that function as sources of

experiential knowledge and peer cross-examination.

Moreover, it is worth considering the extent to which PGCE Plus constitutes an effective

response to the increasing complexity, skills requirement and team working of the

teaching profession. In addressing claims of effectiveness, caution should be exercised, in

that it is tempting to formulate general conclusions about what constitutes effective CPD

provision without addressing the questions of 'effective at what?' and 'under what

conditions?  Finally, it would be worth exploring whether the participants go into

developing the capacity to re-shape practices of pedagogy and sustain change in their

classrooms.

References

Arweck, E., Cullen, M. A., Cullen, S., and Lindsay, G. (2005) *Evaluation of the PGCE Plus 2005. Interim Report 1* (Centre for Educational Development, Appraisal and Research (CEDAR). University of Warwick).

Arweck, E., Cullen, S., Hartas, D., and Lindsay, G. (2006) *Evaluation of the PGCE Plus 2006. Interim Report 2* (Centre for Educational Development, Appraisal and Research (CEDAR). University of Warwick).

Bolam, R. (2000) Emerging policy trends: some implications for CPD. *Journal of In-Service Education*, 26(2), 267-280.

Burchell, H., Dyson, J., and Rees, M. (2002). Making a Difference: a study of the impact of Continuing Professional Development on professional practice, *Journal of In-Service Education*, 28 (2), 219-229.

Cordingley, P., Bell, M., Rundell, B., and Evans, D. (2003) *The Impact of Collaborative Continuing Professional Development on Classroom Teaching and Learning* (London: Centre for the use of Research and Evidence in Education).

Day, C. (1999) *Developing Teachers: The Challenges of Lifelong Learning*, (London: Falmer Press).

Department for Education and Employment (DfEE) (2001) *Learning and Teaching: a strategy for professional development* (the Green paper) (London, HMSO).

Edwards, R., and Nicoll, K. (2006) Expertise, competence and reflection in the rhetoric of professional development, *British Educational Research Journal*, 32 (1), 115–131.

Eraut, M. (1994) *Developing Professional Knowledge and Competence (*London: Falmer Press).

Fielding, M., Bragg, S., Craig, J., Cunningham, I., Eraut, M., Gillinson, S., Horne, M., Robinson, C., and Thorp, J. (2005) *Factors Influencing the Transfer of Good Practice* (London: DfES).

Goodall, J., Day, C., Lindsay, G., Muijs, D., Harris, A. (2005). *Evaluating the Impact of Continuing Professional Development (CPD)* (London: DfES).

Hargreaves, D.H. (1998) The knowledge-creating school. *British Journal of Educational Studies*, 47(2), 122-144.

Hargreaves, A. (1994) *Changing Teachers: Changing Times*, (London: Cassell).

Harland, J., and Kinder, K. (1997) Teachers' Continuing Professional Development: framing a model of outcomes. *British Journal of In-service Education,* 23(1), 71-84.

HMI (2006) *The Logical Chain: Continuing Professional Development in Effective Schools* (London: Ofsted).

Humes, W. (2001) Conditions for professional development, *Scottish Educational Review*, 33 (1), 6–17.

Hustler, D., McNamara, O., Jarvis, J., Londra, M. and Campbell, A. (2003) *Teachers' Perceptions of Continuing Professional Development* (London, DfES).

Kirk, G. (2004) The Chartered Teacher: a challenge to the profession in Scotland. *Education in the North*, 11, 10–17.

Kirkwood, M., and Christie, D. (2006) The role of teacher research in continuing professional development, *British Journal of Educational Studies*, 54 (4), 429-448.

Knight, P. (2002) A systemic approach to professional development: learning as practice, *Teaching and Teacher Education*, 18 (3), 229–241.

Lave, J., and Wegner, E. (1991) *Situated Learning: Legitimate Peripheral Participation* (Cambridge UK: Cambridge, University Press).

Leaton Gray, S. (2005) *An Enquiry Into Continuing Professional Development for Teachers* (Esmee Fairbank Report).

Lord, B. (1994) Teachers' professional development: critical colleagueship and the role of professional communities. In N. COBB (Ed.), *The Future of Education: perspectives on national standards in America* (175-204) (New York: College Board Publications).

Muijs. D., and Lindsay, G. (in press). Where are we at? An empirical study of levels and methods of evaluating continuing professional development. British Journal of Educational Research.

Noffke, S.E. (1997) Professional, personal and political dimensions of action research, *Review of Research in Education*, 22, 305-343.

Rose, J., and Reynolds, D. (2008) Teachers' continuing professional development: rooting practice in the classroom, *International Journal of Management in Education*, 2 (1), 14-29.

Sen, A. (2006) *Identity and Violence: The Illusion of Destiny* (Penguin, Allen Lane).

Teacher Training Agency (1995) *A Survey of CPD* (London, TTA).

Warwick, I., Rivers, K., Aggleton, P., Knight, Watson, E. and Zuurmond, C. (2004) *Developing a Programme of Continuing Professional Development (CPD) in Citizenship* (London: DfES).

Welsh, P. J. (2002) Reclaiming staff development: some reflections on research, teacher collaboration and the politics of professionalism, *Education and Social Justice*, 4(1), 56-61.

Wenger, E. (1998) *Communities of Practice Learning, Meaning and Identity,*

(Cambridge, Cambridge University Press).

Acknowledgements